McMaster University | Health Forum

Rapid evidence synthesis appendices

Artificial intelligence tools for reducing administrative burden among front-line healthcare providers

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Appendices

Appendix 1: Methodological details

Background to the rapid evidence synthesis

This rapid evidence synthesis mobilizes both global and local research evidence about a question submitted to the McMaster Health Forum's Rapid Response program. Whenever possible, the rapid evidence synthesis summarizes evidence drawn from existing evidence syntheses and from single research studies in areas not covered by existing evidence syntheses and/or if existing evidence syntheses are old or the science is moving fast. A systematic review is a summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select and appraise research studies, and to synthesize data from the included studies. The rapid evidence synthesis does not contain recommendations, which would have required the authors to make judgments based on their personal values and preferences.

The Forum produces timely and demand-driven contextualized evidence syntheses such as this one that address pressing health and social system issues faced by decision-makers (see our website for more details and examples). This includes evidence syntheses produced within:

- days (e.g., rapid evidence profiles or living evidence profiles)
- weeks (e.g., rapid syntheses that at a minimum include a policy analysis of the best-available evidence, which can be requested in a 10-, 30-, 60- or 90-business-day timeframe)
- months (e.g., full evidence syntheses or living evidence syntheses with updates and enhancements over time).

This rapid evidence synthesis was prepared over a 30-business-day timeframe and involved five steps:

1) submission of a question from a policymaker or stakeholder (in this case, the CMA Foundation)
2) engaging members of a working group, based at the CMA Foundation, focused on reducing administrative burden, and building on previous work completed by this working group and its partners (e.g., in refining the research questions and developing the organizing framework)
3) identifying, selecting, appraising and synthesizing relevant research evidence about the question
4) conducting and synthesizing a jurisdictional scan of experiences about the question from other countries and Canadian provinces and territories
5) drafting the rapid evidence synthesis in such a way as to present concisely and in accessible language the research evidence
6) finalizing the rapid evidence synthesis based on the input of at least two merit reviewers.

Identification, selection, quality appraisal and synthesis of evidence

For this rapid evidence synthesis, we searched Health Systems Evidence and PubMed for:
1) evidence syntheses
2) protocols for evidence syntheses that are underway
3) single studies (when no guidelines or evidence syntheses were identified or when they are older).

We developed and refined our search strategies using terms related to AI (e.g., machine learning, large language model etc.), terms related to administrative burden (e.g., workload, paperwork etc.), terms related to different 'use cases' for the application of AI in reducing administrative burden (e.g., scribing tools) and related to healthcare providers (e.g., doctors, nurses), ultimately determining that a streamlined approach centring on AI-related keywords and those related to administrative burden led to an appropriate balance between specificity and sensitivity. In Health Systems Evidence, we searched for evidence syntheses using the following strategy, and in PubMed, we searched using the following strategy: (((((((("Artificial Intelligence"[Mesh]) OR ("Algorithms"[Mesh])) OR ("Support Vector Machine"[Mesh])) OR ("Machine Learning"[Mesh])) OR ("Deep Learning"[Mesh])) OR ("Neural Networks, Computer"[Mesh])) OR ("Pattern Recognition, Automated"[Mesh])) OR ("Large Language Models"[Mesh])) OR ("Natural Language Processing"[Mesh])) OR ("artificial intelligence"[Title/Abstract] OR AI[Title/Abstract] OR "A.I."[Title/Abstract] OR "computational intelligence"[Title/Abstract] OR "computer reasoning"[Title/Abstract] OR "machine intelligence"[Title/Abstract] OR GAI[Title/Abstract] OR GenAI[Title/Abstract] OR ChatGPT[Title/Abstract] OR GPT*[Title/Abstract] OR "Generative pretrained transformer"[Title/Abstract] OR "text mining"[Title/Abstract] OR Claude[Title/Abstract]OR Copilot[Title/Abstract] OR perplexity[Title/Abstract] OR automat*[Title/Abstract] OR Gemini[Title/Abstract] OR DeepSeek[Title/Abstract] OR chatbot[Title/Abstract] OR "Bing AI"[Title/Abstract] OR "machine learning"[Title/Abstract] OR "deep learning"[Title/Abstract] OR "large language model"[Title/Abstract] OR LLM[Title/Abstract] OR "natural language processing"[Title/Abstract] OR NLP[Title/Abstract] OR "predictive analytics"[Title/Abstract] OR "Neural Networks"[Title/Abstract] OR "Pattern Recognition"[Title/Abstract]) AND ("administrative burden"[Title/Abstract] OR "documentation"[Title/Abstract] OR "administrative tasks"[Title/Abstract] OR "administrative workload"[Title/Abstract] OR "administrative work"[Title/Abstract] OR "office management"[Title/Abstract] OR "paperwork"[Title/Abstract] OR "Documentation Burden"[Title/Abstract] OR "administrative efficiency"[Title/Abstract] OR "clinical documentation"[Title/Abstract] OR "medical documentation"[Title/Abstract]OR "Clerical Burden"[Title/Abstract] OR "clerical task*"[Title/Abstract] OR "documentation time"[Title/Abstract] OR "time saving"[Title/Abstract] OR "time reduction"[Title/Abstract] OR "time burden"[Title/Abstract] OR "time management"[Mesh]) AND ("physician*"[Title/Abstract] OR "doctor*"[Title/Abstract] OR "nurse*"[Title/Abstract] OR "dentist*"[Title/Abstract] OR "practitioner*"[Title/Abstract] OR "clinician*"[Title/Abstract] OR "team*"[Title/Abstract] OR "anesthetist*"[Title/Abstract] OR "cardiologist*"[Title/Abstract] OR "dentist*"[Title/Abstract] OR "dermatologist*"[Title/Abstract] OR "gastroenterologist"[Title/Abstract] OR "gp"[Title/Abstract] OR "geriatrician*"[Title/Abstract] OR "gerontologist*"[Title/Abstract] OR "gynaecologist*"[Title/Abstract] OR "gynecologist*"[Title/Abstract] OR "hematologist*"[Title/Abstract] OR "haematologist*"[Title/Abstract] OR "intensivist*"[Title/Abstract] OR "neurologist*"[Title/Abstract] OR "obstetrician*"[Title/Abstract] OR "oncologist*"[Title/Abstract] OR "paediatrician*"[Title/Abstract] OR "pediatrician*"[Title/Abstract] OR "psychiatrist*"[Title/Abstract] OR "radiologist*"[Title/Abstract] OR "rheumatologist*"[Title/Abstract] OR "surgeon*"[Title/Abstract] OR "urologist*"[Title/Abstract] OR "Pharmacist*"[Title/Abstract] OR "Optometrist*"[Title/Abstract]). A total of 1,035 records were reviewed for eligibility up to 22 April 2025. An additional 970 records were reviewed between 22 April 2025 and 05 November 2025 for this update. The search terms highlighted in yellow above are the new terms added in this update.

A final inclusion assessment is performed both by the person who did the initial screening and the lead author of the rapid evidence synthesis, with disagreements resolved by consensus or with the input of a third reviewer on the team. The team uses a dedicated virtual channel to discuss and iteratively refine inclusion/exclusion criteria throughout the process, which provides a running list of considerations that all members can consult during the first stages of assessment.

For each evidence synthesis we included, we documented the dimension of the organizing framework (see Appendix 2) with which it aligns, key findings, living status, methodological quality (using AMSTAR), last year the literature was searched (as an indicator of how recently it was conducted), availability of GRADE profile, and equity considerations using PROGRESS PLUS.

Two reviewers independently appraise the methodological quality of evidence syntheses that are deemed to be highly relevant using the first version of the AMSTAR tool. Two reviewers independently appraise each synthesis, and disagreements are resolved by consensus with a third reviewer if needed. AMSTAR rates overall methodological quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. High-quality evidence syntheses are those with scores of eight or higher out of a possible 11, medium-quality evidence syntheses are those with scores between four and seven, and low-quality evidence syntheses are those with scores less than four. It is important to note that the AMSTAR tool was developed to assess evidence syntheses focused on clinical interventions, so not all criteria apply to those pertaining to health-system arrangements or implementation strategies. Furthermore, we apply the AMSTAR criteria to evidence syntheses addressing all types of questions, not just those addressing questions about effectiveness, and some of these evidence syntheses addressing other types of questions are syntheses of qualitative studies. While AMSTAR does not account for some of the key attributes of syntheses of qualitative studies, such as whether and how citizens and subject-matter experts were involved, researchers' competency, and how reflexivity was approached, it remains the best general quality-assessment tool of which we're aware. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, an evidence synthesis that scores 8/8 is generally of comparable quality to another scoring 11/11; both ratings are considered 'high scores.' A high score signals that readers of the evidence synthesis can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the evidence synthesis should be discarded, merely that less confidence can be placed in its findings and that it needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1): S8.)

For primary research (if included), we documented the dimension of the organizing framework with which it aligns, publication date, jurisdiction studied, methods used, a description of the sample and intervention, declarative title and key findings, and equity considerations using PROGRESS PLUS. We then used this extracted information to develop a synthesis of the key findings from the included syntheses and primary studies.

During this process we include published, pre-print and grey literature. We do not exclude documents based on the language of a document. However, we are not able to extract key findings from documents that are written in languages other than Chinese, English, French, Portuguese or Spanish. We provide any documents that do not have content available in these languages in an appendix containing documents excluded at the final stages of reviewing. We excluded documents that did not directly address the research questions and the relevant organizing framework. All of the information provided in the appendix tables was taken into account by the authors in describing the findings in the rapid evidence synthesis.

Identifying experiences from other countries and from Canadian provinces and territories

For each rapid evidence synthesis, we work with the requestors to collectively decide on what countries (and/or states or provinces) to examine based on the question posed. For other countries, we search relevant government and stakeholder websites. In Canada, a similar approach was used. While we do not exclude content based on language, where information is not available in English, Chinese, French, Portuguese or Spanish, we attempt to use site-specific translation functions or Google Translate. A full list of websites and organizations searched is available upon request.

Appendix 2: Detailed data extractions from evidence syntheses about AI tools for reducing administrative burden among front-line healthcare providers

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
  ○ Communication supports
  ○ Patient-discharge supports
• Sectors
  ○ Primary care
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
  ○ Nurses
  ○ Pharmacists
  ○ Allied health professionals
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Patient experience
• Barriers to adoption and scaling up
  ○ System-level barriers
	The scoping review found that artificial intelligence (AI) technologies (e.g., natural language processing, speech recognition machine learning) can significantly reduce clinicians' documentation burden while improving efficiency and accuracy, though challenges remain regarding error management, electronic health record (EHR) integration, and ethical/legal considerations that must be addressed for safe implementation (1)
	• Speech recognition and large language models (LLMs) reduced documentation time and improved workflow by automating transcription and summary generation, allowing clinicians to spend more time on patient care
	• AI-powered ambient scribes decreased clerical workload during ward rounds, improving clinician-patient interactions
	• Patient-friendly discharge summaries created using LLMs showed improved readability and understandability, potentially enhancing patient health literacy and treatment adherence
	• Studies comparing AI-generated clinical documentation with those produced by senior medical residents found comparable quality levels
	• Implementation barriers included the need for human oversight to catch errors (hallucinations, omissions, fabricated information), technical integration challenges with EHRs systems, and unresolved questions about liability and data privacy
		No	3 of 9	Review began: 23 October 2024	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Organizational-level barriers ○ Provider-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Provider-level facilitators						
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Home and community care ○ Specialty care ▪ Inpatient specialty care • Healthcare providers ○ Nurses • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Health outcomes	This scoping review explored the use of artificial intelligence to enhance clinical nursing care, including documentation, nursing diagnoses, care plans, patient monitoring, and prediction of outcomes such as falls and wound management, highlighting its potential to improve care quality through various use cases and underlying mechanisms (2) • Most studies were conducted in community, hospital and laboratory ward settings • Five common AI techniques identified to improve nursing care were machine learning, deep learning, expert systems, fuzzy logic and natural language processing (NLP) • Machine learning was found to increase the speed and efficacy of patient monitoring, greatly reducing the constant need for nurses to collect vital signs and freeing up time for other tasks • Machine learning can predict certain medical problems, such as falls and pressure ulcers, by analyzing past datasets, enabling quicker identification and prioritization of comorbidities, which aids nursing assessments and allows for more accurate care plans and improved patient care quality • Deep learning was used to enhance nursing care by generating quicker and accurate diagnoses, more efficient physiological monitoring, and fall predictions • Expert systems were used to improve nurses' quality of wound care, pressure ulcer management, nursing diagnoses, and to predict pressure injuries • Fuzzy logic was used to enable nurses to monitor intravenous transfusion and vital signs • NLP was used on clinical nursing shift notes recorded in the electronic health records systems	No	5 of 9	20 December 2020	No	Not reported
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Healthcare providers ○ Physicians • Outcomes	The systematic review found that current AI tools improve clinical documentation by structuring data, annotating notes, evaluating quality, identifying trends and detecting errors, while other AI-enabled tools assist clinicians in real time during office visits, though moderate accuracy limits their broad implementation (3) • AI tools can bridge the gap between free-text notes and structured data by organizing text and automatically populating fields, saving clinicians time • AI systems linking medical terms to lay definitions can improve patient comprehension, adherence, and reduce nonadherence costs	No	3 of 9	July 2024	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience	• AI-based speech recognition (AI-SR) programs show promise in reducing documentation time, though high error rates persist; NLP tools are improving error detection, and clinician interest in adoption is growing • AI real-time documentation assistants improve efficiency by transcribing audio, supporting decisions and suggesting codes, but accuracy issues may hinder clinical implementation • AI tools assess clinical note quality by identifying missing domains and redundant information, with NLP improving clarity and timeliness, though challenges remain in tracking changes and protocol adherence • AI tools identify documentation trends by analyzing metadata, enabling form standardization, efficiency improvement and EHR optimization					
• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Scribing and documentation tools ○ Communication supports • Sectors ○ Specialty care ▪ Emergency care • Healthcare providers ○ Physicians • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs • Barriers to adoption and scaling up ○ System-level barriers ○ Patient-level barriers	The scoping review found LLMs have the potential to fundamentally transform emergency medicine, enhancing clinical decision-making, optimizing workflows and improving patient outcomes (4) • LLMs play a pivotal role in clinical decision-making and support by enabling real-time triage, early recognition of patient urgency, advising the public before arrival, assisting in ED triage, and augmenting physician activities in diagnostics and predicting resource use • LLMs have the potential to enhance operational efficiency in efficiency, workflow and information management, particularly through automating patient record synthesis, reducing administrative burden, and improving patient-centric care • Education and communication possibilities emphasize LLMs' potential to enhance medical training, particularly through simulated patient interactions that foster improved communication skills • Risks, ethics and transparency were identified as concerns, particularly regarding the reliability of LLM outputs, with studies highlighting challenges in ensuring unbiased decision-making due to potentially flawed training data, emphasizing the need for thorough validation and ethical oversight	No	3 of 9	August 2023	No	Not reported
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools ○ Communication supports ○ Patient-discharge supports • Sectors ○ Specialty care	The systematic review found that LLMs have the potential to enhance healthcare delivery by assisting in diagnosis, treatment guidance, patient triage, physician knowledge augmentation and administrative tasks in clinical settings, as well as supporting surgeons with documentation, surgical planning and intraoperative guidance; however, concerns regarding accuracy, bias and patient privacy remain (5) • Commonly identified LLM applications included diagnosis, generating differential diagnoses, guiding treatment decisions and further workup,	No	3 of 9	14 September 2023	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations

• Healthcare providers
  ○ Physicians
  ▪ Specialists
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Health outcomes
• Barriers to adoption and scaling up
  ○ System-level barriers
  ○ Provider-level barriers
  ○ Patient-level barriers
	augmenting physician knowledge, and interpreting laboratory and imaging results
	• LLMs offer various applications in surgical settings, including managing documentation, creating perioperative materials, improving discharge instructions, enhancing communication during informed consent, and supporting clinical decision-making by guiding surgical intervention choices and assessing preoperative risks
	• Non-clinical applications of LLMs in healthcare include enhancing medical education through interactive tools, improving patient comprehension and communication, supporting virtual healthcare assistants, and assisting in medical research
	• LLMs in healthcare face limitations including accuracy issues, biased outputs, lack of patient-specific context, potential job displacement, inability to replicate empathy, and privacy concerns, requiring further development, oversight, and regulatory compliance					

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
• Healthcare providers
  ○ Physicians
  ▪ Specialists
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ○ Other equity-centred quadruple aim metrics
  ▪ Health outcomes
	This literature review indicated that AI tools can be used to support supportive and palliative care (SPC) clinicians in decision-making and reduce manual workload, leading to potentially improved care and outcomes for cancer patients (6)
	• Machine learning for predictive modelling and NLP for text screening are two commonly researched applications of AI in SPC
	• Machine learning techniques can be used to predict clinical outcomes, especially mortality, with high accuracy, which may facilitate improved decision-making and personalized care
	• NLP for text screening can rapidly identify relevant keywords and documents, improving efficiency and care quality
	• Despite significant potential, more rigorous clinical validation through prospective and multicentre studies is needed before these AI technologies can be routinely used in clinical setting
		No	3 of 9	Not reported (published between 2020 and 2022)	No	Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
  ○ Nurses
• Outcomes
  ○ Provider experiences
	The umbrella review highlighted AI's potential in clinical decision support, patient monitoring, nursing education and workflow optimization, while also noting challenges such as data privacy risks, biases and ethical concerns, which require addressing through proper training, data governance and policy frameworks for successful integration into nursing practice (7)
	• AI enhances clinical decision-making by analyzing data, predicting patient deterioration, optimizing treatment plans, with integration into EHRs, enabling real-time monitoring and early intervention
		No	5 of 9	Not reported (published between 2015 and 2024)	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs o Other equity-centred quadruple aim metrics ▪ Health outcomes • Barriers to adoption and scaling up o System-level barriers o Organizational-level barriers o Provider-level barriers o Patient-level barriers	• AI-driven imaging tools assist in wound care by assessing severity, monitoring healing and recommending treatments, while predictive analytics help identify high-risk patients, enabling more effective preventive strategies • AI has been widely utilized to streamline nursing workflows and reduce administrative burdens • AI improves remote monitoring with wearable devices, enhances virtual consultations through machine learning, and supports early detection in long-term care, improving patient safety and care efficiency • AI in nursing faces ethical and legal challenges, including data privacy concerns, AI bias, liability issues, and inconsistent regulations across regions, compounded by limitations in training data affecting model reliability and generalizability • Technological barriers to AI adoption in nursing include limited AI literacy, high costs, infrastructure compatibility issues, and conflicts between nurses' judgment and AI recommendations, necessitating clear guidelines and ethical frameworks					
• Types of AI tools for reducing administrative burden o Patient-scheduling and triage supports o Scribing and documentation tools • Sectors o Home and community care o Specialty care ▪ Outpatient specialty care ▪ Inpatient specialty care o Long-term care • Healthcare providers o Nurses • Outcomes o Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) o Other equity-centred quadruple aim metrics ▪ Health outcomes • Barriers to adoption and scaling up o System-level barriers o Organizational-level barriers	The rapid review highlighted the potential of AI systems across various nursing care settings, focusing on applications such as image and signal processing, activity tracking, health monitoring, care coordination, communication and fall detection (8) • In nursing care, AI streamlines care processes by tracking and monitoring health data, supporting care coordination and communication, assisting with nurse scheduling, and helping to detect, classify, and prevent falls, manage alarms and predict pressure ulcers • Hospitals are the primary research setting, followed by independent living at home, while nursing homes, ambulatory long-term care, and outpatient healthcare are less frequently explored • Various clinical and organizational outcomes were reported, with AI applications improving efficiency in nursing care, reducing monitoring time, lowering emergency visits and enhancing patient outcomes such as reduced pressure ulcers, shorter intensive care unit (ICU) stays, and decreased mortality • Requirements for AI in nursing care include compliance with data protection regulations, usability preferences, accurate data inputs, and involvement of caregivers and older adults in development • Reported challenges and barriers target accuracy of recognition, integration with sensor networks, privacy, security, human–machine interaction, and cognition impairment of users, acceptance and costs • The ethical, legal, and social aspects of AI in nursing care include consent, data privacy, workforce impact and fears of nurse replacement	No	5 of 9	June 2020	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Provider-level barriers ○ Patient-level barriers						
• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Communication supports • Sectors ○ Primary care • Healthcare providers ○ Physicians ○ Generalists	The scoping review found that the application of machine learning to automate administrative tasks in general practice primarily focuses on scheduling tasks using supervised learning methods, with limited general practitioner involvement (9) • General practice issues include appointment scheduling, teleconsultation, care management, communication, healthcare recommender systems, EMR interaction and resource management, with appointment scheduling being the most common problem • Administrative tasks in general practice primarily focus on scheduling, including predicting missed appointments, reducing no-shows and improving scheduling based on patient needs, with other tasks involving teleconsultation support, disease management, communication and data entry, most of which are considered fully automatable • Machine learning methods in administrative tasks varied, with most studies using supervised learning (mainly regression), and evaluations commonly relying on traditional metrics like accuracy and precision	No	2 of 9	20 April 2022	No	Not reported
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Primary care ○ Specialty care • Outcomes ○ Provider experiences • Accuracy of outputs	The scoping review found that while the digital scribe field is in its early stages, promising results have been achieved using context-sensitive word embeddings and attention-based neural networks (10) • All studies on automatic speech recognition (ASR) used physician-patient dialogs, with non-clinically trained systems achieving word error rates (WERs) up to 65%, while systems trained on clinical conversations had WERs as low as 18% • The NLP tasks performed were categorized into three types: entity extraction, classification and summarization • Although the digital scribe field is still emerging, the techniques presented show promising results, with the most promising models using context-sensitive word embeddings combined with attention-based neural networks	No	3 of 9	25 December 2020	No	Not reported
• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports • Sectors ○ Specialty care ▪ Emergency care • Healthcare providers ○ Nurses • Outcomes ○ Provider experiences	The systematic review found that triage nurses in the emergency department can utilize artificial intelligence as a supportive tool to aid in the triage process (11) • Most studies applied machine learning to triage, with only one using fuzzy logic, and all but one study employed a five-level triage classification system • In terms of model performance, the feed-forward neural network achieved 33% precision in level 1 classification, while the fuzzy clip model achieved 99% specificity and sensitivity • Triage prediction showed accuracy between 80.5% and 99.1% • Five studies examined triage reliability and outcomes, with findings including a kappa coefficient of 78.13% for the Naive Bayes model, AI reducing triage time by 27 seconds but with incomplete documentation, over-triage and	No	6 of 9	18 April 2023	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
• Accuracy of outputs	under-triage rates, and factors like arrival mode, age and vital signs influencing mis-triage, as well as the relationship between urgency classification and patient treatment outcomes					

• Types of AI tools for reducing administrative burden
  ○ Patient-scheduling and triage supports
  ○ Scribing and documentation tools
  ○ Communication supports
  ○ Prior authorization supports
  ○ Patient-discharge supports
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
  ○ Nurses
• Barriers to adoption and scaling up
  ○ System-level barriers
  ○ Organizational-level barriers
  ○ Provider-level barriers
  ○ Patient-level barriers
	Integrating AI in healthcare spaces has ethical barriers, technological barriers, liability and regulatory barriers, workforce barriers, patient safety concerns, and social barriers (12)
	• Identified ethical barriers include privacy, data ownership and consent to use and store data; lack of trust from providers stemming from lack of training or understanding of AI technology; and conflicts of interest for providers who are involved in AI development
	• Technological barriers were related to data quality, accuracy and dataset size, in addition to questions of variability in interpretations of data from experts, leading to potential embedded biases in the AI; practical technological concerns related to interoperability, usability, integration into workflow, data security, and infrastructure were also identified
	• Liability and regulatory barriers include establishing a process of accountability for outcomes of decisions provided by AI; additionally, regulation that aims to protect commissioners and patients can be a barrier for developers and innovators
	• Workforce barriers include training for clinicians, willingness to engage, fears of job displacement, funding limitations, and time required for training and implementation of the AI technology
	• Patient safety concerns include distributional shift (i.e., lack of reliability in recognizing changes from curated datasets to the complexity of real clinical environments), automation bias (i.e., physician complacency with AI decisions), and AI algorithms that develop to provide the best short-term results rather than long-term patient benefits
	• Social barriers include the underrepresentation of demographic groups in the training of an AI model leading to reduced accuracy when treating these patients, unequal access to AI-augmented healthcare, and lack of social acceptance from patients
		No	3 of 9	2021	No	Not reported

• Types of AI tools for reducing administrative burden
  ○ Patient-scheduling and triage supports
  ○ Scribing and documentation tools
  ○ Communication supports
• Sectors
  ○ Primary care
  ○ Specialty care
	Artificial intelligence in healthcare has the potential to reduce administrative burdens (e.g., by assisting with documentation and diagnostic screening) and improve patient care (e.g., through more accurate diagnoses and better clinical decision-making) (13)
	• Key barriers to AI adoption include concerns about data privacy (e.g., the protection of patient data), the need for better physician understanding and training (e.g., integration of AI into clinical workflows), and a lack of robust evidence proving AI's effectiveness in real-world healthcare settings
		No	1 of 9	Not reported	No	• Occupation
						• Education

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Public health • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Health outcomes ▪ Costs • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers ○ Provider-level barriers ○ Patient-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Organizational-level facilitators ○ Provider-level facilitators ○ Patient-level facilitators						
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools ○ Communication supports • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers	Digital scribes (i.e., AI-powered systems that automatically transcribe physician-patient conversations) reduce administrative burden, improve documentation accuracy (e.g., by capturing more detailed and reliable records), and free up more time for patient care (i.e., allowing providers to focus more on direct interactions with patients) (14) • Despite challenges such as technical limitations (i.e., issues with medical language complexity) and concerns about data privacy (e.g., the need for secure handling of patient information), digital scribes have the potential to improve overall healthcare efficiency and provider satisfaction	No	5 of 9	November 2022	No	• Race/ ethnicity • Gender/sex • Occupation • Education • Socio-economic status • Social capital

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Provider-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Organizational-level facilitators ○ Provider-level facilitators						
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools ○ Communication supports ○ Patient-discharge supports • Sectors ○ Specialty care ▪ Emergency care ○ Public health • Settings ○ Rural/remote communities (vs. urban communities) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Health outcomes ▪ Costs • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers ○ Provider-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Organizational-level facilitators ○ Provider-level facilitators	AI translation tools are being used in healthcare to improve communication and reduce administrative burdens (e.g., aiding in patient discharge instructions and medical documentation), while facing challenges related to accuracy (i.e., limitations in translating complex medical language) and adoption (e.g., concerns from clinicians about reliability and respect) (15) • Clinicians show reluctance to fully rely on AI tools due to concerns about trust, respect and the quality of translations (e.g., fears of miscommunication in high-stakes settings), preferring human interpreters for more detailed or emotionally charged discussions	No	6 of 10	July 2024	No	• Place of residence • Race/ ethnicity • Occupation

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Patient-level facilitators						
• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Scribing and documentation tools • Sectors ○ Primary care ○ Specialty care • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers ○ Provider-level barriers ○ Patient-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Organizational-level facilitators ○ Provider-level facilitators ○ Patient-level facilitators	AI tools reduce administrative burdens in healthcare (e.g., scribing, documentation patient scheduling), improve patient care by enhancing efficiency and decision-making (i.e., better diagnosis and treatment), and face adoption barriers (e.g., resistance to change, high costs,integration challenges with existing systems like electronic health records), with facilitators like interdisciplinary collaboration and training for healthcare providers (16) • Facilitators for successful AI adoption include training programs for healthcare providers (e.g., helping nurse managers manage AI applications), interdisciplinary collaboration (e.g., AI developers working with nurse managers), and coordinated efforts from policymakers and researchers to support AI integration	No	8 of 10	April 2024	No	• Occupation • Education
• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Scribing and documentation tools • Sectors ○ Home and community care ○ Specialty care	AI tools in nursing, such as process automation and predictive models, reduce administrative burden (e.g., optimizing scheduling and documentation), improve patient care (e.g., early detection through monitoring systems), help prevent burnout, and address ethical challenges (e.g., data privacy risks and clinician apprehension) (17) • Ethical concerns (e.g., data privacy risks, the potential for over-reliance on AI) pose challenges to widespread adoption, requiring clear guidelines and interdisciplinary collaboration (i.e., partnerships between nurses, data scientists, ethicists, IT professionals)	No	9 of 10	November 2024	No	• Place of residence • Occupation • Education

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
▪ Emergency care ○ Rehabilitation care • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Health outcomes ▪ Costs • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers ○ Provider-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Organizational-level facilitators ○ Provider-level facilitators						
New studies for November 2025 update						
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Primary care • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics	The use of AI tools for documentation by physicians have reportedly improved time management and decreased physician burnout by reducing documentation time per patient encounter, improving physician focus on listening to patients during assessments and increasing professional fulfilment; however, concerns were raised about the lack of verification for accuracy of AI-generated information and the potentially impersonal doctor-patient relationship that may result from the use of AI tools in patient care * (18) • This scoping review assessed the impact of AI on physician burnout in the context of medical charting and administrative tasks, but excluding its role in diagnosis or patient treatment • Among the eight studies included, AI modalities used were composed of LLMs such as ChatGPT (n=5) and language processing technology for transcription (n=2) ○ One study was conducted in Canada and the remaining studies in the United States	No	3 of 9	2024	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations

▪ Provider experience	• The use of AI among physicians focused mostly on generating automated responses to patient requests
	  ○ The average response generated by a LLM was three times the length of a physician's response, with the LLM struggling to convey the message that the patient was contacting a provider and recommending that the patients see a provider while self-referencing its responses
	• AI was also used to summarize patient encounters in EMRs, and comparisons of the AI-generated notes and those of physicians indicated that the summaries were acceptable
	• Time management was reported as the most common benefit of using AI tools in clinical practice, with a few studies reporting a statistically significant reduction in self-reported burnout among healthcare providers who incorporated AI technology into their practice
	  ○ One study reported that incorporating AI into documentation decreased the documentation time per patient encounter by 28.8% as well as the time spent documenting outside of scheduled hours by 11.8%
	• Furthermore, providers surveyed in a few included studies reported improvements in focus on listening to patients during clinical encounters and increased professional fulfilment after implementing AI in documentation
	• The review also highlighted the risks of AI use by physicians in that tools like ChatGPT derive information directly from the internet without any verification for accuracy by physicians with medical education, leading to patients potentially making misinformed healthcare decisions based on AI-generated recommendations
	• Concerns were also raised by participants about how AI might affect the doctor-patient relationship and make it impersonal					

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
  ○ Patient-discharge supports
  ○ Patient-scheduling and triage supports
• Sectors
  ○ Home and community care
  ○ Primary care
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
  ○ Rehabilitation care
	While there are several machine learning (ML) applications that can support nurses in clinical care, including applications for workflow optimization, documentation, decision support and diagnostic aid, there are challenges and ethical aspects of using ML applications in nursing that should be considered during implementation * (19)
	• This review discussed the fundamental concepts and primary categories of ML, described its applications in nursing practice, and discussed challenges arising from using ML
	• Machine learning is considered a subset of AI that uses algorithms that enable computers to learn from data, recognize patterns, correlations or relationships, and make decisions or predictions based on input data
	  ○ Different types of supervised, unsupervised and semi-supervised learning models were discussed
	• ML applications discussed in the review included:
		No	1 of 9	December 2024	No	• Place of residence

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Long-term care • Settings ○ Rural/remote communities (vs. urban communities) ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Provider experience • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers ○ Provider-level barriers ○ Patient-level barriers	○ a workflow optimization model that enabled hospital managers to flag nursing staff at high risk of absenteeism and intervene early to optimize bed management and maintain service quality ○ predictive risk assessment/early warning scoring to identify patients who may experience complications or deterioration so that they can be treated appropriately in a timely manner ○ applications that facilitated documentation, information-extraction and NLP so that unstructured data can be converted into formats suitable for ML analysis ○ algorithms that provide clinical decision support and diagnostic aid (e.g., classifying patients into levels of agitation-sedation to assist nurses in providing recommendations for adjusting medications) ○ applications for continuous patient monitoring ○ ML models for training and skills development (e.g., tools that improve the ergonomics and well-being of nurses) • Challenges of ML applications included: ○ compliance with data protection regulations ○ the possibility of ML model failure or error that can lead to incorrect healthcare decisions and unclear accountability ○ disparities in access to technology in areas lacking digital infrastructure ○ data security and susceptibility to cyberattacks ○ acceptance of ML tools by nursing staff and lack of nurses input in the development of tools ○ a lack of accepted reporting guidelines for use of ML in nursing education ○ the availability of large and high-quality datasets needed for ML training ○ the potential lack the resources or strategic infrastructure among healthcare organizations to support ML deployment • The study recommended the establishment of a framework correlating nursing interventions with ML tools and ensuring that nurses accurately interpret and safely apply the results of AI					
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Specialty care ▪ Inpatient specialty care • Outcomes ○ Provider experiences	ChatGPT shows strong potential to reduce administrative burden in pediatric care by improving documentation efficiency and patient communication, though accuracy varies in clinical decision-making and requires human oversight * (20) • The objective of the study was to systematically review the use of ChatGPT in pediatric healthcare systems, including its potential to reduce administrative burden through applications in documentation, decision support, education and training • One study reported that ChatGPT-assisted note drafting resulted in a 40% reduction in documentation time and a 33% decrease in provider effort, demonstrating meaningful administrative efficiency gains for clinicians	No	3 of 10	16 February 2025 (Search date)	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
▪ Time spent on administrative tasks (e.g., documentation) • Barriers to adoption and scaling up o Provider-level barriers • Facilitators of adoption and scaling up o Provider-level facilitators	• Another study found that ChatGPT extracted structured information from free-text notes with up to 97% sensitivity and processed data 40 times faster than manual review • Discharge instruction generation also showed improved efficiency and maintained accuracy even when simplified to lower reading levels • Across studies, ChatGPT's most consistent value in reducing administrative burden was in low-risk clerical and documentation support tasks rather than clinical decision-making, where accuracy was variable and human oversight remained necessary					
• Types of AI tools for reducing administrative burden o Scribing and documentation tools • Sectors o Specialty care ▪ Inpatient specialty care • Healthcare providers o Nurses • Outcomes o Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of Outputs o Other equity-centred quadruple aim metrics ▪ Provider experience • Barriers to adoption and scaling up o Provider-level barriers • Facilitators of adoption and scaling up o Provider-level facilitators	AI-enabled ICU command centres improve workflow efficiency, reduce administrative burden, and enhance situational awareness for clinicians, though further evaluation is needed to measure their full impact on outcomes and staff experience * (21) • The objective of the study was to review the design, function and impact of ICU command centres that use artificial intelligence and digital monitoring tools to support clinical decision-making and reduce workload for critical-care staff • The study found that command-centre platforms reduce administrative burden by automating surveillance tasks, organizing patient information, and decreasing the need for manual chart review • The reviewed evidence shows improvements in efficiency, including reduced time spent on routine documentation, earlier escalation of deteriorating patients, and more streamlined communication among multidisciplinary teams • The study identified that AI-driven alerts and dashboards enhance situational awareness, allowing nurses and physicians to focus more on direct patient care rather than data-gathering activities • Several implementations demonstrated reductions in ICU length of stay and delayed recognition of deterioration, suggesting potential downstream clinical benefits linked to improved workflows • The authors note that command centres can support remote or centralized monitoring models, which may mitigate staffing shortages and distribute cognitive workload across wider care teams • The review identifies challenges such as data overload, alert fatigue, workflow misalignment and the need for consistent training to ensure that command-centre insights are effectively integrated into bedside practice	No	4 of 9	March 2025	No	Not reported
• Types of AI tools for reducing administrative burden o Scribing and documentation tools	AI-powered voice-to-text tools produced documentation that matched or outperformed conventional methods, with studies noting improvement in documentation efficiency, reduction in clinician cognitive and administrative burdens, and better clinician attention to patients during visits; however, transcription errors, particularly with medication names, pose safety risks, and	No	7 of 10	20 September 2024	No	• Race/ language

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations

• Sectors
  ○ Primary care
  ○ Specialty care
  ▪ Outpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
  ○ Nurses
  ○ Pharmacists
  ○ Allied health professionals
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
	studies conducted in controlled environments with limited patient diversity constrain generalizability * (22)
	• This systematic review aimed to examine the evidence on using AI-powered voice-to-text tools to document individual patient-provider encounters in primary care and outpatient settings, and to assess their impact on care quality
	• Most included studies were conducted in the United States, with a few others in Bangladesh and the Philippines
	• In terms of effectiveness, all studies showed that AI-powered voice-to-text tools supported effective documentation and, to support effective use, most studies described clinician training for the AI tools, delivered through formats such as in-person sessions, virtual instruction and self-paced modules
	• In terms of efficiency, most studies reported improved documentation efficiency with AI tools, while one study noted that additional time spent reviewing and correcting transcripts sometimes increased after-hours work
	• In terms of safety, there was no clear consensus on the safety of using AI tools without clinician review, and one study reported concerns about medication name transcription errors; studies commonly assessed safety using metrics such as error rates and their potential clinical impact
	• In terms of patient-centredness, most studies reported positive findings, primarily noting that AI tools supported a more personalized consultation by allowing clinicians to focus more on patient interaction and improving the overall experience for both patients and providers
	• Equity concerns reflected limited participant diversity, as one study included mostly highly educated Caucasian participants, another focused only on people with diabetes, and another excluded groups such as pediatric or psychiatric patients; most studies also involved only native English speakers
	• The AI tools evaluated among eligible studies included:
	  ○ front-end medical speech recognition dictation software integrated with electronic health records (Dragon® 10.1 and Dragon® Medical 360)
	  ○ ambient voice documentation systems combining speech recognition, natural language processing and artificial intelligence (DAX™ (Dragon Ambient eXperience))
	  ○ a custom web-based digital scribe and prescribing system using long short-term memory model (AssemblyAI)
	  ○ commercial and open-source speech recognition engines (Bing Speech Application Programming Interface V1, Google Cloud Speech Application Programming Interface V1, IBM Speech to Text V1, Azure Media Indexer V1, Azure Media Indexer 2 Preview V2, Nuance SpeechAnywhere V3.2, Amazon Transcribe Preview V1, and Mozilla DeepSpeech V0.1)
						• Personal characteristics (health status)

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
	○ commercial cloud-based speech recognition tools using specific medical language models (Google Cloud Speech-to-Text (medical conversations model), Amazon Transcribe Medical (primary care + conversation model)) ○ a custom academic digital scribe prototype integrating Google Speech-to-Text with natural language processing ○ a custom electronic health record plugin for MyLifeEMR (combining IBM Watson Speech to Text, the HTML5 Web Speech Application Programming Interface, and the clinical Text Analysis and Knowledge Extraction System (cTAKES)) that generates structured Subjective, Objective, Assessment and Plan (SOAP) notes					
• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports • Sectors ○ Specialty care ▪ Emergency care • Healthcare providers ○ Physicians ○ Nurses • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs • Barriers to adoption and scaling up ○ System-level barriers ○ Provider-level barriers ○ Patient-level barriers	In emergency departments, artificial-intelligence-based triage systems showed promise for shortening triage time, strengthening documentation accuracy, and supporting clinical decision-making, with voice-driven systems producing documentation 19% faster than manual methods and machine-learning models lowering mis-triage rates by approximately 0.3–8.9% * (23) • This systematic review aimed to assess how AI-based triage systems in emergency departments influence patient outcomes, workflow efficiency and healthcare costs • The studies were conducted across multiple countries, spanning South Korea, Germany, Greece, Taiwan and China • The AI systems examined in the included studies were designed to support triage functions such as documentation, urgency prediction and decision-making, and featured voice-based AI with natural language processing, machine learning classifiers, fuzzy logic models and neural networks • A trade-off between innovation and validation emerged, with promising results in controlled settings but uncertain real-world applicability due to limited external validation and small-scale testing • Several integration and validation challenges were identified across the included studies, reflecting limitations within the research system evaluating these AI tools and implicating both clinicians and patients, including areas recommended for improvement such as: ○ risks of under-triage and inconsistencies in accuracy ○ limited assessment of user acceptance (e.g., lack of formal evaluation of nurse acceptance) ○ technical limitations (e.g., accuracy in categorical variables) ○ the largely single-centre nature of the studies ○ the lack of standardized outcome reporting, particularly patient-centred outcomes on satisfaction and equity impacts ○ the lack of long-term impact studies	No	6 of 10	December 2025	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
  ○ Patient-scheduling and triage supports
  ○ Communication supports
• Sectors
  ○ Primary care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ○ Nurses
• Barriers to adoption and scaling up
  ○ System-level barriers
  ○ Organizational-level barriers
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Organizational-level facilitators
  ○ Provider-level facilitators
	A mapping of current AI applications in primary healthcare identified tools across four themes – early intervention and decision support, chronic disease management, operational and patient management, and acceptance and implementation experiences – with many tools having demonstrated technical accuracy but not yet adopted in regular clinical workflows * (24)
	• This scoping review aimed to map empirical studies on AI applications in primary healthcare involving direct engagement with primary healthcare stakeholders, including clinicians (general practitioners, nurses) and patients
	• Tools that integrated smoothly into routine clinical tasks (screening, prescribing and documentation) were easier to use and more widely adopted when they lightened administrative workload while maintaining the autonomy of clinicians
	• The success of implementation was influenced more by human and organizational factors than the technology itself, particularly clinicians' trust, their perception of usefulness, available training and how well tools matched existing professional responsibilities
	• The broad and variable presentations in primary healthcare make it difficult for AI systems to consistently handle multimodal data and context-dependent reasoning, as shown by the inconsistent performance of triage tools and symptom checkers
	• Broader adoption remains constrained by ongoing challenges such as usability problems, poor workflow fit, trust concerns, equity gaps in health systems, and financial limitations
	• Details of the AI tools were not well described
		No	2 of 9	April 2024	No	• Place of residence

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
  ○ Patient-discharge supports
  ○ Communication supports
• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
	LLMs can streamline pediatric surgical workflows by speeding documentation and improving family communication and rapid reference, but their safe use requires clinician oversight due to persistent accuracy limits * (25)
	• Across pediatric surgical workflows, LLMs consistently reduced administrative workload by speeding up drafting of discharge summaries, operative notes, consent forms, post-operative instructions, and patient-education materials, with studies showing that over 90% of AI-generated drafts required only minor edits before sign-off while maintaining clinician-rated quality and safety
	• LLMs improved the readability and completeness of communication with families, producing clearer informed-consent documents, higher-quality post-operative instructions, and more empathetic, understandable responses in patient-facing chatbots; in several studies, both parents and surgeons preferred LLM-generated materials over traditional forms
	• For clinical decision support and rapid reference, general and reasoning-tuned models performed reliably on structured medical questions and benchmark tests, with accuracy strengthened when outputs were grounded
		No	2 of 9	August 2025	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs o Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Provider experience • Barriers to adoption and scaling up o System-level barriers o Organizational-level barriers o Provider-level barriers o Patient-level barriers • Facilitators of adoption and scaling up o System-level facilitators o Organizational-level facilitators o Provider-level facilitators o Patient-level facilitators	through retrieval-augmented generation (RAG) though performance dropped in nuanced, rare or context-dependent pediatric cases • Major limitations included persistent errors involving timelines, age and case nuance; weak performance on ICD/CPT medical coding; inconsistent translation accuracy outside high-resource languages; and risks related to privacy, logging, memorization of rare strings, and data leakage through poorly scoped tool integrations • The review emphasized that safe adoption depends on clinician-in-the-loop workflows, privacy-preserving deployments, version pinning, and ongoing monitoring; early use should focus on high-volume, low-risk, auditable tasks, while the field advances toward multicentre pediatric datasets, transparent benchmarks reporting accuracy, equity, calibration, and time saved, and prospective studies tied to patient-safety outcomes					
• Types of AI tools for reducing administrative burden o Scribing and documentation tools • Sectors o Specialty care • Settings o Academic- or research-oriented care settings (vs. community settings) • Outcomes o Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs o Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Provider experience • Barriers to adoption and scaling up o System-level barriers	The review found that ambient clinical documentation systems reduce documentation time and may improve clinician experience, but studies use highly inconsistent evaluation metrics * (26) • The review found substantial heterogeneity across studies in how ambient clinical documentation (ACD) systems are evaluated, with 11 included studies using widely varying metrics, tools and outcome categories • These metrics clustered into four major domains: model performance, documentation efficiency, clinician experience, and patient experience • Model performance metrics were the most common, with studies using F1 scores, ROUGE scores, BERTScore, BLEURT, and custom semantic-linking metrics to evaluate the accuracy and fidelity of machine-generated notes • Documentation efficiency outcomes demonstrated clear evidence that ACD reduces documentation burden, with included studies reporting faster documentation speeds, fewer after-hours charting minutes, and more rapid generation of clinical histories and exam findings (e.g., two to three times faster than typing or dictation) • Clinician experience outcomes showed promising improvements, including lower burnout scores (measured through validated tools like the Oldenburg Burnout Inventory and Mini-Z), higher workplace engagement, and strong ratings for feasibility, acceptability and usability • The authors identified major barriers to ACD implementation, including safety concerns (e.g., hallucinations, missing data, limited training sets), privacy	No	4 of 9	N/A	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Organizational-level barriers ○ Provider-level barriers ○ Patient-level barriers • Facilitators of adoption and scaling up ○ Organizational-level facilitators ○ Provider-level facilitators	considerations, risks of workflow disruption, patient discomfort with recorded encounters, and organizational costs related to infrastructure, training and integration					
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools ○ Communication supports • Healthcare providers ○ Nurses • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Provider experience ○ Patient-level barriers • Facilitators of adoption and scaling up ○ Provider-level facilitators	Artificial intelligence can support nurses' management of knee osteoarthritis by enabling real-time symptom management, supporting patients' engagement with services, and automating tasks for patient care * (27) • The purpose of this review was to explore the use of artificial intelligence for nurses' management of knee osteoarthritis • The types of AI tools in this study were broad including scribing tools, communication supports, chat boxes and imaging diagnostics • Artificial intelligence enabled real-time symptom monitoring facilitating early intervention and symptom monitoring • Patients appreciated supports of the AI-chat bots for guidance and it could increase their engagement with services • AI tools can automate administrative tasks, allowing for more time for patient care and reduce burnout in nurses • Digital literacy and training are needed to support nurses in clinical interpretations of AI	No	2 of 9	2025	Not avail-able	Not reported
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Primary care ○ Specialty care ▪ Emergency care ▪ Outpatient specialty care ▪ Inpatient specialty care • Outcomes	This systematic review found that AI scribes can streamline clinical documentation and improve workflow efficiency by summarizing patient encounters, subsequently reducing administrative workload and enabling patient engagement, although impact on burnout and long-term outcomes is still limited * (28) • Documentation burden decreased when using AI scribes, and provider/patient engagement increased • Provider burnout was limited by small sample and different methodological approaches • Documentation time generally fell while note quality remained the same	No	7 of 9	2024	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Health outcomes ▪ Provider experience • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers • Facilitators of adoption and scaling up ○ Provider-level facilitators	• One study found statistically significant but small improvement in productivity at system level, but no evidence on costs or wait times • No adverse safety events occurred because of AI scribes, and satisfaction was unchanged, with one study even highlighting an improvement in patient-provider communication • ChatGPT-4 and other large language models had some accuracy gaps, and some models required substantial edits • To enhance implementation, AI scribes need to be integrated into EHR, comprehensive training is required, and iterative evaluation and feedback loops are required to ensure providers can make the most of this tool • Other system level considerations include privacy and consent and bias safeguards needed to protect the privacy and quality of patient data					
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools ○ Patient-scheduling and triage supports ○ Communication supports • Sectors ○ Primary care ○ Specialty care ▪ Emergency care ▪ Inpatient specialty care • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers	AI tools in family medicine in Lithuania can reduce administrative burden through the automation of routine documentation, improving efficiency and enabling physicians to spend more time on patient care * (29) • Smart systems leveraging AI can help organize data, triage patients, manage appointments and reduce delays while enhancing care coordination • Healthcare practitioners understand AI as supportive, but not a replacement for clinicians • AI adoption requires careful consideration regarding proper training, transparency and ethical safeguards	No	2 of 9	2025	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
• Facilitators of adoption and scaling up ○ Provider-level facilitators						

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
	Artificial intelligence transcription tools vary in their accuracy, efficiency and usability; however, generally improve document completeness for structured and direct conversations * (30)
	• The purpose of this review was to explore the accuracy, efficiency and usability of artificial intelligence transcription tools
	• Artificial intelligence transcription tools were used emergency departments, inpatient wards and specialized clinics
	• The general aim of the tools were to accelerate documentation time, extract medically relevant content, and summarize or repropose notes
	• The accuracy, efficiency and usability of artificial intelligence transcription tools differed across studies but generally showed:
	  ○ challenges with dynamic conversations
	  ○ improved document completeness and accuracy
		No	6 of 10	2025	Not avail-able	Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
	Use of digital scribes for clinical documentation workflow could decrease documentation time, but no effects were seen for physician burnout and productivity * (31)
	• The purpose of this review was to explore the clinician efficiency, user satisfaction, quality and practice barriers of digital scribes using ambient listening
		No	4 of 9	2024	Not avail-able	Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
  ○ Patient-scheduling and triage supports
• Healthcare providers
  ○ Nurses
• Outcomes
  ○ Provider experiences
  ▪ Time available for patient care
• Accuracy of outputs
	Artificial intelligence, like machine learning, predictive analytics, robotic processes and natural language processing can improve clinical accuracy, efficiency and early detection for better patient outcomes * (32)
	• The purpose of this review was to evaluate the effectiveness of technologies to improve nursing efficiency and patient care
	• Artificial intelligence, like machine learning and predictive analytics, can support in optimizing resource allocation and personalizing patient care
	• Examples of this application include early sepsis detection, predicting early heart failure and acute conditions, and managing chronic conditions
	• Automation of robotic processes can assist in streaming repetitive processes (e.g., patient scheduling, data input) to increase compliance, efficiency and accuracy
	• Natural language processing can improve document accuracy, clinical design making and data utilization
		No	3 of 10	August 2024	Not avail-able	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Home and community care
  ○ Primary care
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
  ○ Rehabilitation care
  ○ Long-term care
  ○ Public health
  ○ Healthcare providers
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
• Outcomes
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ System-level barriers
  ○ Organizational-level barriers
  ○ Provider-level barriers
	Considerations for the implementation of scribes in clinical settings may include costs, time for training, linguistic variation, medicolegal compliance and interoperability issues * (33)
	• The purpose of this review was to explore barriers to digital scribe implementation
	• The upfront cost of scribes is a barrier but may be mitigated by cost savings later on after the tool has been implemented
	• The time required to learn the tool may be associated with burnout; this can be mitigated using process-based training or by providing financial compensation
	• There is linguistic variation that does not translate to all digital scribes; however, scribes can be trained to adapt to this variation over time
	• Digital scribes may not comply with all organizations but there are Health Insurance Portability and Accountability Act (HIPPAA) certified modules and features to protect data
	• Interoperability issues with existing computer systems can be supported with in-house IT support
	• Benefits from using digital scribes include allowing more time for interaction with patients, require minimal training, and are more cost effective than other scribes
		No	1 of 9	October 2020	Not avail-able	Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
  ○ Communication supports
  ○ Prior authorization supports
• Sectors
  ○ Home and community care
  ○ Primary care
  ○ Specialty care
  ▪ Inpatient specialty care
• Healthcare providers
  ○ Pharmacists
• Settings
  ○ Rural/remote communities (vs. urban communities)
	AI has the potential to augment many areas of clinical pharmacy work such as managing pharmacy stock, clinical decision support and personalized medication monitoring * (34)
	• This article is a narrative review examining the potential impacts of AI on pharmacists' work in community and hospital settings
	• AI can be used to assist in management of pharmacy stock by analyzing past usage and current inventory
	• AI may be used to prepare and monitor medications
	• AI can also assist in clinical decision-making, including a pharmacy management system that integrates patient data to detect issues with medications and an AI tool that evaluates concealed characteristics of drugs to predict interactions and adverse reactions with greater accuracy
	• AI can assist in gathering information for evidence-based patient education
		No	2 of 9	2025	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Health outcomes ▪ Provider experience ▪ Costs • Barriers to adoption and scaling up ○ System-level barriers	• AI offers an opportunity to augment patient engagement through tools such as chatbots offering personalized medication support, automated reminders or integrating with wearable health technology • AI offers an opportunity for pharmacists to redirect their role to focus more on patient interaction • Ensuring patient privacy is paramount in the successful integration of AI tools in clinical pharmacological settings					
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools ○ Patient-scheduling and triage supports ○ Communication supports ○ Prior authorization supports ○ Patient-discharge supports • Sectors ○ Home and community care ○ Primary care ○ Specialty care ▪ Emergency care ▪ Outpatient specialty care ▪ Inpatient specialty care ○ Rehabilitation care ○ Long-term care ○ Public health • Healthcare providers ○ Nurses • Settings	AI automation has the potential to augment nursing practice through reducing administrative burden and assisting in routine care practices, but must be supported by appropriate ethical and legal frameworks * (35) • Analysis exploring the impacts of automation on nursing roles in delivery of care • Automation has the potential to impact nursing tasks related to administrative work and documentation, with technologies such as voice-activated transcription tools and automated scheduling software reporting positive results in practice • Automation may also have positive impacts on medication administration and management, patient monitoring, infection control and assisting patient mobility • Concerns related to integrating automation in nursing care include the loss of the human quality of care, the risk of nurses losing proficiency in essential skills, and equitable patient access • Integrating AI into nursing practice will involve navigating ethical challenges related to the principles of autonomy, non-maleficence, beneficence, and justice • Some proposed strategies include: ○ inclusive co-design that engages nurses and other stakeholders ○ implementing AI as a tool to assist nurses with appropriate transition strategies	No	1 of 9	2025	No	Not reported

Dimension of organizing framework	Declarative title and key findings	Living status	Quality (AMSTAR)	Last year literature searched	Avail-ability of GRADE profile	Equity considerations
○ Rural/remote communities (vs. urban communities) ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Provider experience • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers ○ Provider-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Organizational-level facilitators • Provider-level facilitators	○ introducing legal and regulatory frameworks that clearly delineate responsibility for adverse outcomes • Legal models of AI integration are varied, though the authors identify the European Union's AI Act as a promising model					

* indicates studies included in the update

Appendix 3: Detailed data extractions from single studies about AI tools for reducing administrative burden among front-line healthcare providers

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Specialty care • Settings ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences	An initial assessment of the Pragmatic Trial Operations (PTOps) playbook to support the integration of artificial intelligence (AI) into electronic health records found that the weighted median of average provider utilization of the AI system was 65.4%, and that diagnostic entries were similar to pre-intervention levels after addressing some initial workflow issues that caused discrepancies (36) • To evaluate the impact of a playbook on the uptake of an AI program used to improve clinical note generation and provider burden, difference-in-differences	High	Publication date: 2024 Jurisdiction studied: United States Methods: Quasi-experimental study using difference-in-differences	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs • Barriers to adoption and scaling up o Organizational-level barriers o Provider-level barriers	analyses were used to assess utilization, accuracy, work outside of work, and time in notes • The alpha phase initially experienced workflow issues that led to discrepancies between International Classification of Diseases-10 (ICD-10) diagnosis entries compared to note content, which reduced accuracy from 79% to 35% ($p > 0.01$) • After addressing these issues with a new note template and provider training, accuracy issues were fully resolved • Difference-in-differences analyses did not detect significant changes in work outside of work or time in notes after implementing a new note template and provider training			
• Types of AI tools for reducing administrative burden o Patient-scheduling and triage supports o Scribing and documentation tools o Communication supports • Sectors o Specialty care • Outcomes o Provider experiences ▪ Time spent on administrative tasks (e.g., documentation)	A pre-post study on an ambient artificial intelligence documentation platform found that physicians' across specialties perceived their efficiency and overall experience as having improved following implementation (37) • The study aimed to evaluate the impact of an ambient AI documentation platform (Abridge) on documentation burden, after-hours work, burnout risk and job satisfaction • Response rate for pre-implementation was 51.9% and response rate for post-intervention was 74.4% • Ease of documentation workflow (OR = 6.91, 95% CI: 3.90–12.56, $p < .001$) and completing notes associated with the usage of the AI too (OR = 4.95, 95% CI: 2.87–8.69, $p < .001$) were improved significantly after implementation of the ambient AI tool • Physicians also reported decreased documentation burden, time spent documenting outside clinical hours, and risk of burnout due to documentation • It also increased perceived satisfaction at work • Although the study's findings are promising the lack of validated measures and short-term evaluation times limit the overall certainty of the findings, highlighting the need for additional research	High	Publication date: 2025 Jurisdiction studied: United States Methods: Pre-post-study	Not reported
• Types of AI tools for reducing administrative burden o Scribing and documentation tools • Sectors o Specialty care	Using a structured template for surgical note writing, ChatGPT-4 was found to be just as accurate (4.44 vs. 4.33, $p = 0.512$) and organized (4.54 vs. 4.24, $p = 0.064$) as surgeons' notes, but was less comprehensive (3.73 vs. 4.42, $p < 0.0001$), highlighting the potential of large	High	Publication date: 2024 Jurisdiction studied: United States	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
▪ Inpatient specialty care • Settings o Rural/remote communities (vs. urban communities) o Academic- or research-oriented care settings (vs. community settings) • Outcomes o Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs	language models to increase the efficiency of neurosurgical documentation (38) • 144 surveys with notes prepared by either surgeons or AI were assessed by three surgeons to evaluate the accuracy, comprehensiveness, and organization on a five-point scale • The readability of the notes, evaluated through Flesch-Kincaid Grade Level (FKGL) and Flesch Reading Ease (FRE) scores, identified that AI notes tended to use more complex language • Results are likely to vary to some extent across specialties • The study highlights that large language models have the potential to help increase the efficiency of neurosurgical notes by providing at minimum a starting point for notes in less than a minute, whereas another study found that surgeon's notes take on Yuval average over seven minutes to complete		Methods: Comparative evaluation study	
• Types of AI tools for reducing administrative burden o Scribing and documentation tools • Sectors o Specialty care ▪ Emergency care • Outcomes o Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs • Barriers to adoption and scaling up o Provider-level barriers	For more intricate clinical documentation tasks, ChatGPT-4 helped clinicians achieve a 40% reduction in time and 33% reduction in effort for supervisory notes, while no change was found in simpler notes (39) • The study used a comparative analysis of clinical documentation in pediatric emergency medicine with and without assistance of ChatGPT-4 across four clinical scenarios with different levels of complexity • ChatGPT summaries were scored 7.6/10 for completeness, 8.6/10 for accuracy, 8.2/10 for efficiency and 8.7/10 for readability • Participants had some concerns that included the absence of important negatives in the history of present illness and physical examination, the use of nonspecific action plans, infusing ChatGPT's interpretation into the text without being explicit, and odd wording choices at times • ChatGPT also occasionally omitted important details, highlighting the need for clinicians to validate ChatGPT produced documentation • Overall, clinicians were satisfied and expressed interest in adopting ChatGPT in their clinical practice	High	Publication date: 2024 Jurisdiction studied: United States Methods: Mixed methods with comparative evaluation and thematic analysis	Not reported
• Types of AI tools for reducing administrative burden o Scribing and documentation tools	In this before-and-after study the integration of a large language model based on ChatGPT was found to save	High	Publication date: 2024	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	23.3% (CI 95%: 13.8%–32.8%) of time spent on Pharmacovigilance documentation (40)
	• The study tested whether a large language model (MyGenAssist) based on ChatGPT could improve Pharmacovigilance documentation processes, and found a reduction of about five minutes (22.25 minutes versus 16.97 minutes) per case
	• Implementation only required two-hour training of the Pharmacovigilance Team, with no major difficulties identified, and could potentially save an average of 10.7 working days (eight hours) each year
			Jurisdiction studied: United States
			
			Methods: Before-and-after study using multiple linear regression	

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Primary care
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
  ○ Patient-level barriers
	A qualitative evaluation found that most primary care physicians found that a generative AI-facilitated clinical documentation tool reduced time spent documenting and anxieties about retaining important clinical details, allowing physicians to be more engaged during patient appointments (41)
	• The study evaluated physician's experiences with a generative AI clinical documentation tool (DAX Copilot – DAXC) in a multi-setting academic learning health system
	• The tool has the potential to mitigate administrative burden, and involves beginning a recording after obtaining verbal consent from the patient and generating a preliminary clinical note after the visit that can then be finalized on the electronic heath record (EHR) or via the physician's mobile phone
	• Physicians differed in perceptions about which types of clinical encounters the tool was most useful for
	• Given DAXC's difficulty dictating notes in chronological order, physicians often found they often had to reorganize notes chronologically instead of the order described in the patient's narrative
	• Physicians reported concerns related to 1) that DAXC transcripts could sometimes include errors, 2) that implementing DAXC might mean they would be asked to increase patient volume, and 3) that the notes could sometimes be overwhelming
	• DAXC reduced the time spent on clinical documentation for most physicians, alleviating cognitive burden and improving engagement during patient encounters
		High	Publication date: 2024
			
			Jurisdiction studied: United States
			
			Methods: Qualitative evaluation using semi-structured interviews	

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• The technology allowed for more personable provider-patient interactions but had limitations such as errors in patient details and inappropriate diagnoses			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	An open-source AI model for radiotherapy image segmentation (OSAIRIS) was found to provide significant time savings for prostate and head and neck contouring, and demonstrated industry-leading accuracy, highlighting potential to reduce administrative burden in clinical practice despite the need to address potential bias (42)
	• Compared to manual approaches, OSAIRIS was found to save an average of 5.4 minutes (95% CI: +/– 2.1) on prostate contouring, representing 36% of the total time spent segmenting contours
	• OSAIRIS-assisted head and neck contouring saved an average of 30.3 minutes (95% CI: +/– 8.7), representing 67% of the time spent segmenting contours
	• Compared time to manually segment the contours versus the time to edit contours generated by OSAIRIS
	• Comparing OSAIRIS with a senior radiation oncologist using geometric scoring found that OSAIRIS outperforms other state-of-the-art systems at 0.88 for prostate and 0.94 for head and neck
	• These results demonstrate a small non statistically significant increase in accuracy for prostate segmenting and a large statistically significant improvement for head and neck segmenting
	• Despite clinicians checking outputs from OSAIRIS and editing where necessary, judgments and decisions may have had potential bias introduced due to clinicians trusting the AI system (anchor bias)
	• This potential bias was mitigated by clinicians with varying rates of success across disciplines, highlighting the need to implement AI systems with caution and with proper training
		High	Publication date: 2025
			
			Jurisdiction studied: United Kingdom
			
			Methods: Comparative evaluation
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Outpatient specialty care
• Healthcare providers
	Ambient scribing can reduce mental effort and time needed for documentation, leading to better provider and patient satisfaction; however, accuracy verification is needed (43)
	• This study aimed to investigate the association between ambient scribing and perceived burden of clinical documentation
		High	Publication date: 19 February 2025
			
			Jurisdiction studied: United States
			
			Methods: Prospective study
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Patient experience
  ▪ Health outcomes
	• A total of 46 clinicians from 17 different specialists in an outpatient setting were surveyed
	• Clinicians completed both a pre and post questionnaire
	• Participants were trained to use the ambient scribe tool named DAX copilot, a flexible mobile application with an audio recording feature
	• The application produces interpretations of the conversation and was able to segment the conversation in categories of patient history, physical assessment, and future treatment plans
	• The average time to produce a report was less than a minute
	• The use of ambient scribing tool was associated with 20.4% less time needed for documentation in outpatient settings, leading to an overall of 30% less after-hours' time needed for work
	• Generally, participants found the tool easy to use, with a score of 74/100
	• Appointment closure rate was 9.3% greater compared to baseline
	• The percentage of clinical documentation completed by the physician was 29% lower compared to baseline
	• The use of the tool was associated with less distraction and mental overload
	• Qualitatively participants reported greater efficiency, less time spent on documentation, and better patient engagement
	• Participants noted that the tool did not eliminate documentation burden, but decreased the mental effort needed
	• Mixed feedback was seen regarding the length and quality of documents, and participants noted that editing and proofreading was needed			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
	Ambient listening tool is associated with increased productivity and provider satisfaction on clinical documentation in an urban academic medical institution (44)
	• The purpose of this study was to examine the impact of an ambient listening tool on clinician documentation in an urban academic medical institution
		High	Publication date: October 2024
			
			Jurisdiction studied: United States
			
			Methods: Survey
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care	• A total of 117 clinicians participated in this study and 55 completed the post survey • Approximately 71% of participants felt that the tool met their documentation needs, and 48% felt that it was easy to use • The type and name of ambient listening tool was not specified • Negative impacts of documentation on well-being decreased from 71 to 38% • Participants generally reported satisfied experiences with the tool, with 35% likely to recommend it to a peer, 58% stated that it increased their productivity, and 29% intended to use it for the majority of notes			
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Specialty care • Healthcare providers ○ Physicians ▪ Specialists ○ Nurses • Settings ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs	Generative AI can produce discharge summaries similar in quality to psychiatrists, but with less time and greater conciseness, in a psychiatric clinic (45) • This study explored the use of AI in generating discharge summaries in a psychiatric clinic • The authors generated two fictional patients using clinical experience, medical history and treatment outcomes ○ A total of three physicians and three psychotherapists were given the document summaries of the fictional patients and asked to generate discharge reports ○ ChatGPT-4 was also asked to generate a discharge report ○ All reports were coded and evaluated by four physicians, on a scale of one to three, who were not aware of the purpose of the study ○ The evaluation criteria focused on clarity and conciseness of writing, flow, coherence, structure, completeness, accuracy and time taken to prepare report • The highest-ranking summary was completed by a psychologist, followed by the AI-generated report (four-point difference) • The AI-generated report was faster and more concise, but lacked emotion	Medium	Publication date: May 2025 Jurisdiction studied: United States Methods: Exploratory	Not reported
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors	An AI scribing platform was associated with better treatment attendance, greater symptom reduction, and overall patient satisfaction in patients in an outpatient therapy for depressive or anxiety disorder (46)	High	Publication date: 10 July 2023 Jurisdiction studied: United States	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ Specialty care ▪ Outpatient specialty care • Healthcare providers ○ Physicians ▪ Specialists • Outcomes ○ Provide experiences ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience	• This study determined the feasibility, acceptability and efficacy of an AI platform for clinical outcomes in outpatient therapy • A total of 47 participants in an outpatient clinic for depressive or anxiety disorder were included in this study • The use of the AI platform was to summarize and transcribe therapy sessions, provide feedback on evidence-based practices, and integrate data with standardized questionnaires • The comparison group was usual care • Participants in the AI session were 67% more likely to attend their healthcare sessions and showed greater symptom reduction • Participants in both groups were satisfied with their treatments • Depression symptoms were reduced by 34% with Eleos, compared to 20% for TAU, and anxiety symptoms were reduced by 29% with Eleos, compared to 8% for TAU • Participants in the AI group attended 67% more sessions than those in TAU, and therapists submitted progress notes 55 hours earlier on average		Methods: Exploratory	
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Specialty care ▪ Emergency care • Healthcare providers ○ Physicians ▪ Generalists ▪ Specialists ○ Nurses • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience	Digital tools documentation and synthesizing patient history led to better communication, patient-clinician rapport and decreased time; however, some physicians did not believe it would be useful for all specialities (47) • The purpose of this study was to explore the association of a digital tool with rapport building, documentation and time efficiency in an emergency department setting • The tool has two components: a patient and healthcare professional facing component ○ Patient facing for patients in the waiting room to document their history ○ Healthcare professional facing to display assessment to emergency department staff in an accessible and efficient way • A total of 81 participants completed this survey, including patients, physicians and nurses	High	Publication date: 7 February 2022 Jurisdiction studied: United States Methods: Exploratory	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• Patients reported positive comments on the engagement of the tool and its comprehension, usability and rapport with healthcare professionals • Nurses also had positive reports with improved understanding, patient rapport, helpfulness of medical information, and time saving, and all stated they would recommend to their peers • Some physicians found the tool helpful, but only for certain specialities, such as surgery			

• Types of AI tools for reducing administrative burden
  ○ Prior authorization supports
  ○ Communication supports
• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Specialists
  ○ Nurses
• Outcomes
  ○ Provider experiences
  ▪ Time available for patient care
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Health outcomes
• Barriers to adoption and scaling up
  ○ Patient-level barriers
	A qualitative study indicated a significant opportunity to use robotic systems to perform noncomplex tasks in intensive care units (ICUs), thereby potentially improving efficiency and reducing staff burden (48)
	• A total of 78 distinct tasks were identified as potentially suitable for robotic assistance, with 50 tasks related to direct patient care (e.g., repositioning patients, assisting with procedures), 19 tasks focused on indirect patient care (e.g., delivering supplies, cleaning), six tasks involving administrative duties (e.g., answering call lights), and three tasks classified as a combination of direct and indirect care (e.g., sitting with a patient to provide comfort)
	• Most participants supported automating routine, non-critical tasks (e.g., responding to nurse calls, measuring glucose levels) as a means to reduce workload and improve efficiency, while high-complexity tasks requiring clinical judgment (e.g., adjusting ventilator settings) were considered unsuitable for full automation
	• Ethical and safety concerns about using robots in ICU care include ensuring patient privacy and security, maintaining human judgment in direct care, addressing potential technology access disparities, and preserving human connection to prevent emotional isolation
		Medium	Publication date: 28 March 2025
			
			Jurisdiction studied: United States
			
			Methods: Qualitative study
				Not reported

• Sectors
  ○ Specialty care
  ▪ Outpatient specialty care
  ○ Public health
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Barriers to adoption and scaling up
	A survey of dental professionals across India on AI use in dental practice revealed that technical concerns were the most significant perceived barrier to AI adoption, while perceived utility and ease of use were the most significant factors affecting AI adoption decisions (49)
	• The study aimed to assess familiarity with AI tools among dental professionals, as well as their perceived
		High	Publication date: February 2024
			
			Jurisdiction studied: Pan-India
			
			Methods: Cross-sectional study
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ System-level barriers ○ Organizational-level barriers ○ Provider-level barriers • Facilitators of adoption and scaling up ○ Provider-level facilitators ○ Patient-level facilitators	barriers, attitudes and usage patterns influencing decisions to adopt AI • Dental professionals were recruited from different geographical areas and practice settings, including public health clinics, private practice and academic institutions • Among the perceived barriers to AI adoption, technical concerns were more significant than financial considerations, ethical and legal issues, and organizational and cultural factors • The extent of AI use varied, with more professionals reporting AI use in diagnostic and administrative support, and less in planning treatments and managing patients • Among the factors influencing AI adoption, regression analysis found "perceived utility" and "ease of use" to be statistically significant, while "compatibility with workflows," "peer influence," "training and support," and "patient acceptance" were not statistically significant			
• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Scribing and documentation tools ○ Communication supports ○ Prior authorization supports ○ Patient-discharge supports • Sectors ○ Primary care ○ Specialty care ▪ Emergency care ▪ Outpatient specialty care ▪ Inpatient specialty care • Healthcare providers ○ Nurses • Settings ○ Rural/remote communities (vs. urban communities) ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences	Nurses identify key barriers (lack of understanding, technical infrastructure) and facilitators (training and timing) to implementing AI in healthcare environments (50) • Barriers to implementing AI identified by nurses include lack of understanding of AI technologies, concerns of AI bias impacting decision-making, and technical challenges including a stable network, computer infrastructure, and additional training for nurses • Nurses expressed the importance of adequate training and optimal timing for smooth implementation of AI tools • Nurses expressed different attitudes toward the potential for adoption of AI in healthcare ranging from optimism regarding improved workflow, efficiency and patient outcomes, to fear of losing patient-provider connections and human care • Younger nurses and nurses who were less resistant to change were significantly more likely to express positive attitudes towards AI in healthcare	Medium	Publication date: 2025 Jurisdiction studied: Alexandria, Cairo, and Aswan in Egypt Methods: Mixed methods involving semi-structured interviews and a cross-sectional survey	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Health outcomes • Barriers to adoption and scaling up ○ System-level barriers ○ Organizational-level barriers ○ Provider-level barriers ○ Patient-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Organizational-level facilitators ○ Provider-level facilitators				
• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Scribing and documentation tools ○ Communication supports • Sectors ○ Specialty care ▪ Outpatient specialty care ▪ Inpatient specialty care • Healthcare providers ○ Physicians ▪ Generalists ▪ Specialists ○ Nurses • Settings ○ Rural/remote communities (vs. urban communities) ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Health outcomes • Barriers to adoption and scaling up ○ System-level barriers	Clinicians involved in multidisciplinary teams supporting breast cancer treatment expressed optimism regarding the potential for clinical decision support systems to increase efficiency and streamline current workflow, though they cautioned against several potential drawbacks (51) • The main benefit of clinical decision support systems (CDSSs) identified by clinicians is the time-saving ability to streamline tedious tasks in current workflow • Providers identified multiple ways that CDSS can be useful in streamlining their workflow in multidisciplinary team meetings (MDTMs) including: ○ supporting the time-consuming task of preparing patient information for MDTMs ○ facilitating efficient discussions by providing a clear, integrated, visual overview ○ simplifying gathering patient information from multiple departments and electronic medical records ○ simplifying clinical trial matching ○ supporting clinical decision-making by comparing individual patient data to clinical guidelines • Providers identified potential drawbacks to implementing CDSSs including: ○ potentially inaccurate or unreliable information ○ workflow disruptions as providers switch between multiple electronic programs ○ lack of flexibility outside of established guidelines to support individual patient needs	High	Publication date: 2024 Jurisdiction studied: Netherlands Methods: Qualitative, semi-structured interviews	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ Organizational-level barriers ○ Provider-level barriers ○ Patient-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Organizational-level facilitators ○ Provider-level facilitators ○ Patient-level facilitators	○ clinicians becoming too reliant on CDSS technology ○ potential impacts of privacy laws • Providers additionally expressed the importance of being included in CDSS development to ensure functionality in clinical practice			
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Specialty care ▪ Emergency care ▪ Outpatient specialty care ▪ Inpatient specialty care • Healthcare providers ○ Physicians ▪ Specialists • Settings ○ Rural/remote communities (vs. urban communities) ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs	The majority of physicians and physician trainees examining surgical reports for functional endoscopic sinus surgery created by a natural language processing tool estimated the tool would reduce workload and have time-saving benefits (52) • Physician and physician trainee participants provided an average of 23.25 corrections to functional endoscopic sinus surgery reports made by a natural language processing (NLP) tool before they were considered adequate • 66.67% of participants estimated using the NLP to make surgical reports would save 30 to 60 minutes of time each day; 61.11% estimated 16–30 minutes saved; 27.78% estimated 1–15 minutes saved; 5.56% estimated 31–45 minutes saved • 61.11% of participants stated they expected a workload to be reduced when using the NLP surgical report tool • 66.66% of participants expected to see clinical benefits when using the NLP surgical report tool • 33.33% of participants found the NLP-generated reports (with physician corrections) to be similar to conventionally generated reports in content • 27.78% of participants found the NLP-generated reports (with physician corrections) were similar in form to conventionally generated reports • 11.11% of participants strongly agreed, and 55.56% agreed, that they would use this tool in the future	High	Publication date: 2023 Jurisdiction studied: Germany Methods: Development and evaluation (using a questionnaire) of a natural language processing tool in a clinical setting	Not reported
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Specialty care ▪ Emergency care ▪ Outpatient specialty care	Pediatric ENT physicians reported an average satisfaction of 4.64 out of 5 when using an AI speech recognition technology, though timeliness received a score of 4 out of 5 (53) • An AI speech recognition technology (Speaknosis) was evaluated for the purpose of medical	High	Publication date: 2025 Jurisdiction studied: Spain Methods: Quasi-experimental design	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
▪ Inpatient specialty care • Healthcare providers o Physicians ▪ Specialists • Settings o Rural/remote communities (vs. urban communities) o Academic- or research-oriented care settings (vs. community settings) • Outcomes o Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs • Barriers to adoption and scaling up o System-level barriers o Organizational-level barriers o Provider-level barriers	documentation among pediatric (otolaryngologist) ENTs • Semantic relevance and accuracy of Speaknosis reports was given a score of 96.50% • Physicians reported an average satisfaction of 4.64 on a 5-point Likert scale, with satisfaction increasing with the amount of time spent using the Speaknosis technology • Instances of error (omissions, introducing non-existent conditions, formatting errors) demonstrate the need for continued human oversight in refining the Speaknosis technology • Timeliness of the technology received a mean score of 4 out of 5 using the Physician Document Quality Instrument (PDQI-9)			
• Types of AI tools for reducing administrative burden o Scribing and documentation tools • Sectors o Primary care o Specialty care ▪ Emergency care ▪ Outpatient specialty care ▪ Inpatient specialty care • Healthcare providers o Physicians ▪ Generalists ▪ Specialists • Settings o Rural/remote communities (vs. urban communities) o Academic- or research-oriented care settings (vs. community settings) • Outcomes o Provider experiences ▪ Time spent on administrative tasks (e.g., documentation)	The DAX Copilot ambient AI scribe tool was rated favourably by physicians and produced time saving effects when embedded into the electronic health record (54) • DAX Copilot ambient AI scribe was embedded • A statistically significant reduction in the physician task load and burnout scores was observed after a three-month trial with the DAX Copilot tool • The usability of the DAX Copilot tool was found to be a moderate statistically significant improvement over current clinical documentation tools • Physicians expressed increased positive perceptions of the DAX Copilot's ease of use and the level of training they received after the three-month trial • Physicians reported improved efficiency in documentation tasks (65%), quality of records (52%) and user-friendliness (98%) with the DAX Copilot tool • Physicians reported often using the DAX Copilot tool in their practice (65%) and that they would use it long-term (78%) • An estimated 20 minutes/half day was saved when using the DAX Copilot tool in clinical practice	High	Publication date: 2025 Jurisdiction studied: Northern California, United States Methods: Prospective quality improvement study	Not reported
• Types of AI tools for reducing administrative burden o Communication supports	Non-ophthalmologist health professionals receiving standard ophthalmology communication notes positively rated AI-generated plain language summaries for	High	Publication date: 2025	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Sectors
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
  ○ Nurses
  ○ Pharmacists
  ○ Allied health professionals
• Settings
  ○ Rural/remote communities (vs. urban communities)
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
• Accuracy of outputs
	increased understanding and clearer guidance regarding the patient's ophthalmological condition (55)
	• Non-ophthalmologist health professionals receiving standard ophthalmology notes (SONs) with AI-generated plain language summaries (PLSs) versus those receiving SONs without the PLS were 9% more likely to report that the SON increased their understanding of the patient's diagnosis, 21.5% more likely to say they were happy with the level of detail, 12.1% more likely to be happy with the conciseness of the SON, and 23% more likely to report that the SON clearly explained the patient's condition
	• Among non-ophthalmological health professionals receiving SONs with an AI-generated PLS, 85% reported that the PLS gave clearer guidance than the SON with no PLS, 88% found the SON with the PLS easier to understand, and 85% reported that they preferred the SON with the PLS overall
	• Compared to those receiving standard SONs, non-ophthalmologist health professionals receiving SONs with the PLS who reported a lower baseline comfort with ophthalmology notes were more likely to approve of the clarity of the notes, have increased understanding of unfamiliar terms, and strongly prefer the PLS with the SON
	• 75.5% of ophthalmologists were very satisfied with the PLS, the majority reported that PLSs were reflective of the SON content, and 63.2% found reviewing the PLSs was no added burden
	• Prior to editing, 4% of PLSs were missing information and 26% contained incorrect information; most ophthalmologists reported these to have no risk of harm, but only 42.1% said the errors had no clinical significance
			Jurisdiction studied: Rochester, Minnesota, United States
			
			Methods: Randomized quality improvement study	

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Primary care
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
	Medical students reported positive aspects of using Autoscriber software to automatically summarize patient encounters, though improvements are still necessary (56)
	• The median time medical students spent manually summarizing a patient consultation was 202 seconds, while the median time spent editing summaries automatically generated by the Autoscriber software was 152 seconds
		High	Publication date: 2024
			
			Jurisdiction studied: Netherlands
			
			Methods: Quasi-experimental usability study
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Healthcare providers
  ○ Physicians
  ▪ Specialists
• Settings
  ○ Rural/remote communities (vs. urban communities)
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
	• Overall, medical students had positive experiences using Autoscriber and reported the technology was easy to use, interesting and had potential for use
	• Some students reported negative experiences with Autoscriber due to the number of errors and the time spent waiting for technology to load
	• 12 out of 18 students reported that they would use Autoscriber in their work			

• Types of AI tools for reducing administrative burden
  ○ Patient-scheduling and triage supports
  ○ Scribing and documentation tools
  ○ Communication supports
  ○ Prior authorization supports
  ○ Patient-discharge supports
• Sectors
  ○ Primary care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ○ Nurses
  ○ Pharmacists
  ○ Allied health professionals
• Settings
  ○ Rural/remote communities (vs. urban communities)
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ○ Other equity-centred quadruple aim metrics
  ▪ Patient experience
  ▪ Health outcomes
• Barriers to adoption and scaling up
  ○ Provider-level barriers
	Healthcare professionals expressed mixed views towards a natural language processing tool that could automate clinical documentation with some professionals viewing it as a potentially useful tool, while other expressed concerns about negative impacts on clinical skills and physicians' ability to critically reflect on patient interactions (57)	Medium	Publication date: 2020
			
			Jurisdiction studied: England
			
			Methods: Mixed methods design
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Types of AI tools for reducing administrative burden
  ○ Communication supports
  ○ Patient-discharge supports
• Sectors
  ○ Primary care
  ○ Specialty care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
• Settings
  ○ Rural/remote communities (vs. urban communities)
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Health outcomes
	Discharge summaries from an inpatient Infectious Diseases service written by ChatGPT 3.5 performed well in summarizing patient demographics and medical history, describing patient medical issues during hospitalization, and communicating follow-up plans after patient discharge (58)	Medium	Publication date: 2025
			
			Jurisdiction studied: Singapore
			
			Methods: Quasi-experimental design
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Primary care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
• Settings
  ○ Rural/remote communities (vs. urban communities)
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
	AI offers many opportunities to support general practitioners, particularly in administrative work, but must preserve professional autonomy and employ a bottom-up approach to development (59)
	• In considering the potential impact of AI in healthcare, general practitioners (GPs) emphasized the importance of preserving professional autonomy in their ability to provide care in an individualized manner and expressed concerns regarding the authority of human GPs versus AI in a clinical scenario, as well as the potential for automation bias
	  ○ GPs emphasized bottom-up technology design and the importance of adapting AI to physician preferences, to preserve their autonomy
	• GPs expressed some concerns regarding potential bias within AI models, personal time they must invest in training the AI, limitations of AI systems (e.g., dealing with complex cases), the potential for AI to act
		Medium	Publication date: 2020
			
			Jurisdiction studied: Australia
			
			Methods: Co-design workshops
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Patient experience
  ▪ Health outcomes
• Barriers to adoption and scaling up
  ○ System-level barriers
  ○ Organizational-level barriers
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ System-level facilitators
  ○ Organizational-level facilitators
  ○ Provider-level facilitators
	as an auditing tool, and the potential of AI fully replacing human physicians
	• GPs identified desired features of AI systems including the ability to adapt to personal work styles, data security, recreating the writing experience, speech-based communication, and writing patient summary letters			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Primary care
  ○ Specialty care
  ▪ Outpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
  ○ Allied health professionals
• Settings
  ○ Rural/remote communities (vs. urban communities)
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Patient experience
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
  ○ Patient-level facilitators
	Introducing an AI tool to write clinical notes and letters during patient consultations had positive results including reducing perceived burden on clinicians and allowing clinicians to focus more on the patient interaction (60)
	• Clinical notes and letters written by AI and uploaded to the EHR following simulated consultations were scored higher in quality of documentation than those inputted into the EHR following standard practice
	• Consultations conducted with the assistance of the AI documentation tool were found to be significantly shorter
	• Clinicians stated the AI tool functioned well with multiple speakers, and appreciated the tool's ability to filter out irrelevant information from the conversation
	• Clinicians reported reduced computer disruption, increased ability to focus fully on their patients (100%), and an overall positive experience (94%)
	• Clinicians reported improvements in perceived workload, particularly in feeling less hurried during patient consultations
	• Parent actors in simulated pediatric consultation scenarios reported increased attention from the clinician with the use of the AI tool (87% vs. 75%)
	• AI-produced documentation achieved higher Sheffield Assessment Instrument for Letters (SAIL) scores, with consultations 26.3% shorter on average, without impacting patient interaction time
	• Clinicians expressed some concerns in regard to the potential for errors with the AI tool and recommended that the tool should be individualized to the need of each department for optimal performance
		High	Publication date: 2024
			
			Jurisdiction studied: London, England
			
			Methods: Mixed methods
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• Though clinicians expressed initial hesitation to the AI tool, this decreased with exposure			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Outpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Specialists
  ○ Allied health professionals
• Settings
  ○ Rural/remote communities (vs. urban communities)
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Patient experience
  ▪ Costs
	Clinicians reported that the Dragon Ambient eXperience (DAX) digital scribe tool improved the quality of patient consultations while saving time and decreasing stress associated with documentation (61)
	• Clinicians using the DAX digital scribe tool reported positive experiences, with 83.3% reporting they would be "very disappointed" if the DAX tool was unavailable for future use, and that the tool "significantly improved" their patient encounters
	• Clinicians using DAX expressed satisfaction with the regards to time saved, decreased stress and improved quality of patient interactions
	• Patients additionally reported positive experiences attending consultations where DAX was used
	• The DAX tool may offer some cost saving benefits compared to in-person scribes
		High	Publication date: 2024
			
			Jurisdiction studied: Wisconsin, United States
			
			Methods: Mixed methods
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Costs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	The Gemini AI chatbot evaluated its ability to reduce administrative burden by generating accurate billing codes for patient encounters in a hand surgery clinic (e.g., assigning Current Procedural Terminology codes from medical documentation) (62)
	• The Gemini AI chatbot showed 68% overall agreement with the hand surgeon's billing recommendations (i.e., 68% of the time, the chatbot's CPT code matched the surgeon's) and a moderate interrater reliability (Cohen's kappa coefficient of 0.586)
	• The chatbot performed best for post-operative encounters (98% agreement) and least accurately for new patient visits (48% agreement) (e.g., the chatbot's agreement was highest for follow-up care and lowest for initial consultations)
	• The chatbot recommended higher billing levels than the surgeon 31 times and lower billing levels 10 times
		High	Publication date: 2024
			
			Jurisdiction studied: United States
			
			Methods: Retrospective analysis
				• Occupation

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	(i.e., suggesting more complex or less complex visits than the surgeon's assessment), with four wrong encounter type codes (e.g., misclassifying a return visit as a new patient encounter)			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Home and community care
  ○ Primary care
  ○ Specialty care
  ▪ Inpatient specialty care
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	A machine learning-based speech recognition system was implemented to reduce the documentation burden for nurses in a psychiatric ward (e.g., improving transcription accuracy from 87.06% to 95.07%) and enhance efficiency, allowing more time for patient care (63)
	• The system processed 30,112 words in 32,456 seconds (i.e., 0.928 words per second), showing similar speed to manual typing, with no significant difference in overall time spent on documentation ($P > 0.05$)
	• Barriers to adoption included voice recognition quality issues (e.g., unclear pronunciation, inconsistent speaking pace) and initial unfamiliarity with the system, but familiarity and pre-training led to improved accuracy and user comfort over time (e.g., recognition accuracy improved as nurses adapted to the system)
		High	Publication date: 2023
			
			Jurisdiction studied: Taiwan
			
			Methods: Pilot study design with pre- and post-intervention evaluations
				• Occupation

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Primary care
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Barriers to adoption and scaling up
  ○ System-level barriers
  ○ Organizational-level barriers
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	Clinicians using an AI-powered clinical documentation tool experienced reduced time on EHR tasks (e.g., 47.1% reported less time on EHR at home) and decreased frustration with documentation (e.g., 44.7% reported less frustration), though not all clinicians saw the expected benefits (e.g., some did not find time-saving advantages or improved EHR experience) (64)
	• Despite positive outcomes for some, a significant subset of clinicians (e.g., 18.2% in the intervention group) did not experience time-saving benefits or improved EHR experience
		High	Publication date: 2024
			
			Jurisdiction studied: United States
			
			Methods: Non-randomized clinical trial design
				• Occupation
				• Gender
				• Education

• Types of AI tools for reducing administrative burden
  ○ Patient-scheduling and triage supports
  ○ Scribing and documentation tools
• Sectors
	The use of AI-assisted programs in outpatient speciality services can decrease queuing time and increase patient satisfaction (65)
	• The study assessed the use of an AI-assisted program called Smart-doctor to traditional outpatient internal
		High	Publication date: August 2022
			
			Jurisdiction studied: Shanghai, China
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ Specialty care ▪ Outpatient specialty care • Healthcare providers ○ Physicians ▪ Generalists ▪ Specialists • Settings ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care ○ Other equity-centred quadruple aim metrics ▪ Patient experience	medicine care at a children's research hospital in Shanghai, China ○ Smart-doctor uses a deep learning-driven NLP model to model itself on doctor's reasoning and decision-making, which allows it to prescribe tests and treat many patients simultaneously • The primary outcome assessed was queuing time, as well as secondary outcomes of consulting time, test time, total time, and patient satisfaction score, using an electronic questionnaire administered to patient's parents • 720 patients were recruited into either the AI-assisted group or the conventional human physician group (114 withdrew) • The study found that the median queuing time in minutes was lower in the AI-assisted group (8.78 IQR 3.97,33.88) compared to the conventional group (21.81 IQR 6.66, 73.10) with $p < 0.01$ • The consulting time in minutes was shorter in the AI-assisted group (0.35 IQR 0.18, 0.99) compared to the conventional group (2.68 IQR 1.82, 3.80) with $p < 0.01$ • The total time in minutes was shorter in the AI-assisted group (40.20 IQR 26.40, 73.80) compared to the conventional group (110.40 IQR 68.40, 164.40) with $p < 0.01$ • The overall satisfaction score showed an increase in the AI-assisted group by 17.53% with $p < 0.01$		Methods: Randomized control trial	
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Primary care ○ Specialty care ▪ Outpatient specialty care • Healthcare providers ○ Physicians • Settings ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation)	The use of AI scribe technology in ambulatory settings decreased EHR documentation times in a variety of clinical specialties (66) • The study assessed the use of a language model-powered ambient AI scribe (DAX Copilot, Nuance Communications, Inc.) on utilization for EHR and documentation time per note in ambulatory settings at an academic medical centre in Stanford, California, United States ○ Secondary measures included the amount of daily documentation time, after hours documentation time, and total documentation time • The study took place over three months (October 2023–January 2024) and included 45 physicians in the analysis representing eight medical specialities	High	Publication date: December 2024 Jurisdiction studied: United States Methods: Prospective quality improvement study	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• DAX Copilot was utilized in 55.25% of encounters (9629/17428) with a median 52.5% utilization at the individual physician level (IQR 17.86% to 80.97%) ○ There was significant heterogeneity in utilization between users • The median change in documentation time per note was –0.57 minutes (IQR –1.3 to –0.13) and was statistically significant (P < 0.01) • The median change in documentation time per day was –6.89 minutes (IQR –22.37 to –0.65) which was statistically significant (p < 0.01) • There was statistically significant differences in daily afterhours documentation time (–5.17 IQR –21.32 to 3.82) and daily total documentation time (–19.95 IQR –39.34 to –3.64) (p < 0.01)			

• Types of AI tools for reducing administrative burden
  ○ Prior authorization supports
• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Specialists
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
• Accuracy of outputs
	AI-generated plastic surgery consent forms show no significant difference in completeness or accuracy compared to consent forms created by plastic surgeons, and are significantly shorter and easily readable (67)
	• The study compared plastic surgery informed consent forms generated by an AI chatbot (ChatGPT-4) to surgery consent forms created by plastic surgeons for five commonly performed plastic surgeries
	• 10 informed consent forms developed by plastic surgeons (from the American Association of Plastic Surgeons (ASPS)) were compared to forms generated by the AI chatbot for each of the five types of plastic surgery
	  ○ Consent forms were compared on the length, reading level, accuracy and completeness
	• The average length (by word count) was lower in the AI chatbot forms compared to the ASPS forms (1,023 vs. 2,901, p = 0.01)
	• The average reading level in the AI chatbot forms was lower than the ASPS forms (11.2 vs. 12.5, p = 0.02)
	• The study found no significant difference in accuracy and completeness between the AI chatbot forms and the ASPS forms
	• The AI chatbot forms scored higher for descriptions of expected pain (1.80 vs. 1.40, p = 0.02) and recovery time (1.64 vs. 1.24, p = 0.02) within the forms, whereas the ASPS forms scored higher for describing
		High	Publication date: October 2024
			
			Jurisdiction studied: United States
			
			Methods: Cross-sectional study
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	potential surgery complications (2.88 vs. 2.48, p = 0.002)			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
	AI-based voice information systems perform significantly better in ICU settings for documentation, resulting in increased efficiency and fewer errors compared to paper based and information systems (68)
	• The study compared paper-based documentation, patient data management systems (PDMSs) and new AI-based voice information and documentation systems (VIDSs) in an ICU setting
	• The methods were assessed on performance, accuracy, mental workload and user experience
	• Performance was assessed using a set of typical ICU tasks involving documentation and medical interpretation
	• The study found that VIDS showed a statistically significant advantage over the other two methods
	  ○ Tasks were completed significantly faster (p < 0.01)
	  ○ Significantly significant fewer errors were made compared to PDMS (p = 0.03) and paper documentation (p < 0.001)
	  ○ Subjective user perception was found to be statistically significant in VIDS compared to PDMS and paper documentation (p < 0.001)
	• No statistically significant difference was found between VIDS and PDMS for mental workload (p = 0.06)
		High	Publication date: November 2023
			
			Jurisdiction studied: Germany
			
			Methods: Crossover clinical trial
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Primary care
• Healthcare providers
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Barriers to adoption and scaling up
  ○ System-level barriers
• Facilitators of adoption and scaling up
  ○ System-level facilitators
	AI tools such as NLP for documentation, predictive analytics for patient flow, and automated discharge planning (e.g., improving discharge dates and reducing delays) were found to reduce administrative burdens in mental health inpatient units, improve clinician efficiency, enhance patient care through better resource allocation, and address barriers such as regulatory challenges and trust issues, with system and organizational facilitators identified as key to successful AI adoption (69)
	• Barriers to AI adoption included regulatory concerns, trust in technology, and lack of infrastructure, while facilitators included strong organizational leadership and investment in AI training and systems
	• Interviewees identified potential roles for AI in improving patient flow in mental health inpatient units
		High	Publication date: May 2021
			
			Jurisdiction studied: United Kingdom
			
			Methods: Mixed methods, semi-structured interviews
				• Occupation
				• Education

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ Patient-level facilitators	related to standardizing and recommending patient treatments, diagnoses and discharges, mitigating human error, and assisting with administrative tasks or transcribing notes • Interviewees highlighted the importance of introducing AI as a tool to assist in healthcare settings, rather than take on healthcare decisions • Though interviewees recognized the potential uses of AI in mental health care, they identified three challenges – technical, regulatory and humanistic – that must be addressed before AI tools are implemented in this setting, and noted the importance of investment and infrastructure to scale up and seamlessly integrate AI technologies			
New studies for November 2025 update				
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Primary care ○ Specialty care • Healthcare providers ○ Physicians ▪ Generalists ▪ Specialists • Settings ○ Rural/remote communities (vs. urban communities) ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Provider experience	Implementation of the DAX Copilot and Abridge ambient listening tools to support clinical documentation showed positive results, including reduced documentation time and improved physician perceptions of effectiveness, efficacy, quality of patient connection, and mental burden associated with documentation * (70) • Physicians implemented the DAX Copilot and Abridge ambient listening tools in their clinical practice via the Epic Haiku mobile application or an integrated web browser-based approach in connection with EHR to automatically draft clinical notes • Observations indicated a 14% relative reduction (about seven minutes each day) in clinical documentation time, with less time spent on documentation per appointment (9.91 minutes reduced to 8.82 minutes), per day (55.97 minutes reduced to 49.13 minutes), and per note (6.37 minutes reduced to 5.58 minutes) • An increase in the length of clinical notes was additionally observed • Physicians reported positive patient experiences when using the ambient listening tools including improvements in capacity to give undivided attention to patients, patient-centred care, high-quality care and patient safety • Physicians reported improved clinical efficiency with the use of ambient listening tools including improved	High	Publication date: October 2025 Jurisdiction studied: California, United States Methods: Quality improvement pilot, survey analysis	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	effectiveness, efficiency, specialty-specific workflow support, and system response time • Physicians additionally reported a reduced mental demand associated with documentation burden in addition to decreased perceived effort on documentation • Physicians reported improved perception of EHR training, mastery and organizational support in addition to improved system integration with organizations and with external organizations • Physicians identified areas for improvement of the clinical documentation tool including improved customization for individual staff needs, minimizing workflow disruptions, and ensuring content accuracy			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Home and community care
  ○ Primary care
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
  ○ Rehabilitation care
  ○ Long-term care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
  ○ Nurses
  ○ Allied health professionals
• Settings
  ○ Rural/remote communities (vs. urban communities)
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
	A comparison of six AI scribes demonstrated that though AI scribes can effectively produce clinical notes in a timely manner, improvement is still required in technical accuracy and ease of use * (71)
	• Six AI scribes were compared on measures of usability, effectiveness and technical performance, accuracy and quality in documentation
	• Of the AI scribes evaluated it was found that the majority were accessible on multiple types of electronic devices and demonstrated some integration with electronic medical records, though there was variability in other features such as sign-in and encounter initiation processes
	• AI scribes were able to produce a medical note an average of one minute after a 15-minute clinical encounter, with documentation time increasing by encounter length and complexity
	• AI scribes demonstrated varying ability to manage background noise or conversations with more than two individuals
	• Each of the AI scribes demonstrated frequent grammatical, syntactical or deletion/omission errors in transcriptions
		High	Publication date: July 2025
			
			Jurisdiction studied: Toronto, Ontario, Canada
			
			Methods: Competitive analysis
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Primary care
  ○ Specialty care
  ▪ Emergency care
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Patient experience
  ▪ Provider experience
• Barriers to adoption and scaling up
  ○ System-level barriers
  ○ Organizational-level barriers
  ○ Provider-level barriers
  ○ Patient-level barriers
• Facilitators of adoption and scaling up
  ○ Organizational-level facilitators
  ○ Provider-level facilitators
  ○ Patient-level facilitators
	Most clinicians and patients with experience using generative AI for ambient documentation reported that it was important to have multiple opportunities before the clinical visit to ask questions and share information prior to consenting to the recording of their conversation, while also ensuring patients had the option to opt out if they felt uncomfortable * (72)
	• This evaluative study assessed ambulatory clinician and patient experiences with the consent process for ambient documentation assisted by AI, its limitations, and how decisions to use or decline the use of these documentation tools are associated with the patient-clinician relationship
	  ○ Ambient clinical documentation uses audio from clinical visits to generate electronic health record documentation
	• 121 ambient documentation pilot users (18 ambulatory clinicians and 103 patients) participated in this evaluation at a large urban academic health centre in New York between March and December 2024
	• Participating clinicians in ambulatory clinic settings were observed while using the ambient documentation tools and interviewed immediately after observation while patient perspectives were obtained from the commercial user research platform Dscout that obtained their consent to share their experience with ambient documentation tools during clinic visits
	• While most patients (74.8%) reported being comfortable or very comfortable with their clinician using ambient documentation, they also voiced concerns about data confidentiality, storage and trust in the management of their personal information, specifically when it came to a third-party vendor having access to their personal data
	  ○ This would impact patients' intent to consent as well as what information they felt comfortable disclosing
	• Clinicians expressed similar concerns to patients in that they were unsure about how clinical data was being stored or secured and wanted more education about data practices prior to using the AI-assisted ambient documentation technology with patients
		High	Publication date: July 2025
			
			Jurisdiction studied: United States
			
			Methods: Qualitative evaluation
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• Trust was identified as a key factor in patients' willingness to consent and clinicians' use of ambient documentation • Among clinicians and patients, perceived benefits of ambient documentation included reduced documentation burden, enhanced communication and rapport, and improved recall while risks involved data security, cognitive impacts, legal liability and equity concerns ○ Clinicians were more likely than patients to view responsibility for the use of the technology as being shared among individual clinicians, hospital systems, and the ambient documentation vendors • Most participants (clinicians and patients) wanted a flexible approach to using AI-assisted ambient documentation that allowed for multiple touchpoints ahead of the clinical visit to obtain information and ask questions prior to consenting			

• Types of AI tools for reducing administrative burden
  ○ AI diagnostic and decision support tools
• Sectors
  ○ Specialty care
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time available for patient care
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	The findings of this clinical case study comparing ChatGPT's proposition of differential diagnoses, additional examinations and treatments to those of clinical practitioners of laryngology and head and neck surgery indicate that ChatGPT is not ready to select the best additional examinations considering all these important outcomes and patient history * (73)
	• The performance of ChatGPT, the Chatbot Generative Pre-trained Transformer that was launched in November 2022 by OpenAI, was assessed for its management of clinical cases of laryngology and head and neck surgery
	• The data of 48 patients with complete historical and clinical information collected by the Laryngology–Head and Neck Surgery division of CHU Saint-Pierre in Belgium were presented to ChatGPT version 3.5 and it was asked for differential diagnoses, additional examinations and potential treatments
	  ○ The study used a modified version of the General Items off the Amsterdam Clinical Challenge Scale test (ACCS) to rate the complexity of clinical cases submitted to ChatGPT
	• The performance of ChatGPT was assessed using the Ottawa Clinic Assessment Tool (OCAT), which is a
		High	Publication date: October 2023
			
			Jurisdiction studied: Belgium
			
			Methods: Clinical case series
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	clinical tool used to evaluate the performance of residents or fellows-in-training ○ ChatGPT responses were compared with the responses/propositions of two blinded senior laryngologists • Differential diagnoses: ChatGPT had the highest performance in the proposition of plausible differential diagnoses (90%) and the proposition of the most plausible diagnosis (65%) • Additional examinations: A total of 74 additional examinations were indicated by the senior laryngologists (mean per patient = 1.78 ± 1.00), compared to 108 additional examinations (mean per patient = 2.78 ± 1.3) proposed by ChatGPT ○ Some additional examinations prescribed by practitioners were never proposed by ChatGPT while some examinations were only prescribed by ChatGPT ○ Study judges reported that some additional examinations prescribed by ChatGPT were not necessary, and ChatGPT forgot some indispensable examinations in 55–75% of cases • Potential treatments: ChatGPT reported highest performance in the proposition of a series of adequate therapeutic options (60–68%) • The findings of the study indicate that ChatGPT is not ready to propose the best additional examinations considering all these important outcomes and patient history			
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Primary care • Healthcare providers ○ Physicians • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Facilitators of adoption and scaling up ○ System-level facilitators ○ Provider-level facilitators	SPELL (**S**nippet-**P**rimed r**E**gex **LL**M Pipeline), a scalable NLP workflow that analyses targeted snippets of clinical data has processed 31 million clinical reports between 1976 and 2024 from eight affiliated hospitals resulting in a processing time reduction by 68% compared to traditional full-document analysis, and by more than 95% compared to manual physician annotation * (74) • A scalable NLP workflow called SPELL (**S**nippet-**P**rimed r**E**gex **LL**M Pipeline) was developed to systematically extract structured clinical insights from large volumes of clinical EHR narratives • Rather than entire documents, SPELL analyses targeted snippets for clinical interpretation	High	Publication date: November 2025 Jurisdiction studied: United States Methods: Experimental study (pre-print)	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• SPELL processed 31 million clinical reports between 1976 to 2024 from eight affiliated hospitals • Processing time was reduced by 68% compared to traditional full-document analysis, and by more than 95% compared to manual physician annotation			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
  ○ Patient-scheduling and triage supports
• Sectors
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
• Settings
  ○ Urban communities
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Health outcomes
  ▪ Provider experience
• Barriers to adoption and scaling up
  ○ System-level barriers
  ○ Organizational-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	AI-generated neurology consultation summaries in the emergency department achieved very high semantic similarity to physician-written notes, produced significantly shorter and more readable documentation, and accurately matched clinical disposition decisions in nearly 80 percent of cases, indicating strong potential to reduce documentation burden while maintaining clinical quality * (75)
	• The authors aimed to evaluate whether a large language model (LLM) could automatically generate neurology consultation reports in the ED that preserve clinical content, reduce documentation burden, and even include recommendations for next steps (e.g., admit vs. discharge)
	• A retrospective cohort study of 250 consecutive neurology consultations from the ED of Rambam Health Care Campus (Level-1 Trauma and Academic Hospital)
	• They screened 1,368 ED neurology consultation cases from 1 January to 29 February 2024, and ultimately included 250 with complete data
	• The inclusion criteria for the consultation notes include ≥ 18 years old, full consult note, lab/radiology data, neurologist's free-text note, etc.
	• They used Gemini 1.5-pro, hosted on Google Vertex AI, set with temperature = 0 (to minimize "hallucinations")
	• They computed cosine similarity between LLM-generated and physician-authored reports using Clinical-BioBERT embeddings
	• The outcomes that the study looked at were semantic alignment, textual similarity/overlap, readability, length of summaries, accuracy of next-step recommendations, and bias/robustness across sub-groups
	• The AI summaries retained core clinical content very well, while being significantly more concise, which is promising for reducing documentation burden
		High	Publication date: November 2025
			
			Jurisdiction studied: Israel
			
			Methods: Retrospective study
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• The improved readability (lower grade level) suggests that they could also be more accessible to other providers or even patients • The 78.8% agreement on next-step recommendations is encouraging but not perfect; there is risk of error, and in some cases the model made incorrect suggestions • The divergence in phrasing (low ROUGE) suggests the AI has a different writing style, standardized and less personalized than a neurologist's note • Temporal variation hints at human factors (fatigue, shift times) affecting documentation			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	Integrating a multi-agent AI system into electrodiagnostic reporting did not improve report quality compared with physician-only interpretation, while fully automated AI reports performed significantly worse, and physicians reported low usability and minimal workload reduction despite moderate trust in the AI's diagnostic suggestions * (76)
	• The objective of the study was to determine whether a multi-agent AI framework (INSPIRE) could improve the quality, accuracy and efficiency of electrodiagnostic (EDX) reporting compared with standard physician-only interpretation
	• The study used a single-centre, prospective randomized controlled trial in which 200 outpatients undergoing EDX were randomly assigned to either an AI-assisted interpretation arm or a physician-only control arm
	• The intervention involved an AI system that generated a preliminary Electromyography (EMG)/ Nerve Conduction Studies (NCS) report that physicians then reviewed and revised, whereas the control group relied solely on physician-authored reports without AI assistance
	• The primary outcome of the trial was report quality, measured using the AI-Generated EMG Report Score (AIGERS), a composite metric evaluating detection of findings (50% weight) and diagnostic accuracy (50% weight)
	• Secondary outcomes included physicians' perceived quality of AI collaboration, ease of use, trust, workflow
		High	Publication date: August 2025
			
			Jurisdiction studied: Israel
			
			Methods: Single-centre, prospective randomized controlled trial
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	impact, and compliance, assessed through post-task surveys and a final questionnaire • The study found that AI-assisted physician reports performed equivalently to physician-only reports on the AIGERS, indicating no measurable improvement in report quality through AI augmentation • The AI-only reports, included for comparison, performed significantly worse than both AI-assisted and physician-only reports on all accuracy and diagnostic metrics, showing that unsupervised AI was not reliable for clinical reporting • The AI system demonstrated high sensitivity (93.3%) for detecting abnormal studies and high specificity (92.0%) for identifying normal studies, yet borderline cases frequently triggered misclassification • Key findings from the physician satisfaction surveys indicated that clinicians trusted the AI's diagnostic suggestions moderately (mean 3.7/5) and believed it improved report professionalism (4.0/5), yet they rated usability (1.7/5), efficiency (2.0/5) and workload reduction (1.7/5) very poorly due to workflow interruptions and interface issues			

• Types of AI tools for reducing administrative burden
  ○ Patient-scheduling and triage supports
  ○ Scribing and documentation tools
  ○ Communication supports
• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	Ambient listening tools powered by generative AI significantly reduced physicians' documentation time while simultaneously increasing note length and detail, demonstrating improved efficiency, faster workflows and enhanced documentation output without adding to clinicians' administrative burden * (77)
	• The objective of the study was to evaluate whether ambient listening tools powered by generative AI could reduce physician documentation workload by analyzing changes in EHR note characteristics and writing time before and after implementation
	• The study used a quantitative, exploratory design that analyzed EPIC Signal system-logged metrics to objectively assess documentation behaviors among physicians participating in a pilot implementation of two ambient listening tools: Nuance DAX Copilot and Abridge
	• The researchers compared pre-implementation baseline data from the three months before tool adoption with cumulative averages at one-, two-, and three-months post-implementation for four core
		High	Publication date: August 2025
			
			Jurisdiction studied: United States
			
			Methods: Retrospective study
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	documentation metrics: average characters per note, characters per appointment, time spent writing each note, and time spent writing notes per day • The analytic sample included physicians who used an ambient listening tool for at least four weeks and generated at least 10 notes, resulting in 42 participants with one-month data, 32 with two-month data, and 31 with three-month data after quality control and removal of outliers • The methods included assessing normality using the Shapiro–Wilk test and employing paired two-sample t-tests for statistical comparisons when assumptions were met, ensuring that observed differences were not driven by data irregularities • The study found that the average time spent writing a note decreased significantly from 6.58 minutes at baseline to 5.45 minutes after three months of ambient listening tool use, representing a meaningful reduction in per-note documentation time ($p < 0.001$) • The results also demonstrated a significant reduction in total daily documentation time per provider, which decreased from an average of 63.99 minutes at baseline to 53.33 minutes after three months, indicating improved overall workflow efficiency • Despite reductions in documentation time, the study found that note length increased, with average characters per note rising from 7,952 to 8,511 across the pre- to post-pilot period, suggesting that physicians produced longer, more detailed notes in less time • The average number of characters documented per appointment also increased substantially by approximately 1,021 characters after implementation of the ambient listening tools, showing statistically significant growth across all three follow-up months • The study findings indicated that the most pronounced improvements occurred during the first month of implementation • The authors suggest a rapid adoption curve in which early exposure yields the greatest efficiency gains, followed by smaller but sustained changes over time			
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools	The use of an ambient artificial intelligence scribe substantially reduced documentation time, improved the	High	Publication date: November 2025	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	quality of clinical documentation, and lowered perceived workload among junior doctors * (78)
	• The study aimed to evaluate whether an ambient AI scribe could reduce documentation time, improve documentation quality, and lower perceived workload among junior doctors in a simulated orthopaedic inpatient setting
	• Researchers conducted seven simulated ward rounds involving postgraduate year-one doctors, using a commercially available ambient AI scribe to generate real-time progress notes and discharge summaries
	• Documentation time was measured for both manual and AI-assisted notes, with quality assessed using the Physician Documentation Quality Instrument-9 (PDQI-9) and workload evaluated with the NASA-Task Load Index
	• The study found that ambient AI reduced progress note documentation time by approximately 79%, dropping median completion time from 128 seconds manually to 27 seconds with AI
	• Discharge summaries were also completed substantially faster with AI, with median times decreasing from 459 seconds manually to 114 seconds when using the ambient AI tool
	• AI-generated progress notes demonstrated significantly higher PDQI-9 quality scores than manual notes, particularly in the domains of thoroughness, currency and usefulness, without compromising accuracy
	• Discharge summaries produced using AI achieved markedly higher quality scores across comprehensibility, organization, consistency and synthesis, showing improvement even as case complexity increased
	• Junior doctors reported lower perceived workload when using the ambient AI system, with the greatest reductions seen in frustration and effort scores, reflecting a meaningful alleviation of cognitive and administrative burden
			Jurisdiction studied: Australia
			
			Methods: Simulated experimental study	

• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors	Easy-ICD AI tool reports significant reduction coding time for longer clinical notes and modestly improved accuracy * (79)	High	Publication date: July 2025	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ Specialty care ▪ Inpatient specialty care • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs • Barriers to adoption and scaling up ○ Provider-level barriers • Facilitators of adoption and scaling up ○ Provider-level facilitators	• The objective of the study was to evaluate whether the Easy-ICD artificial intelligence tool could improve the efficiency and accuracy of clinical coding among Scandinavian healthcare staff compared with traditional manual coding approaches • Seventeen participants were enrolled and 15 completed the study, contributing a total of 300 coded clinical notes for analysis, with incomplete records excluded • The study measured outcomes including coding time, coding accuracy and user satisfaction to assess whether the AI tool reduced administrative workload and improved coding performance • The use of the AI tool reduced median coding time for longer clinical notes by 46%, with a statistically significant median difference of 123 seconds compared with manual coding • For shorter clinical notes, the AI tool did not significantly reduce coding time, indicating that its efficiency benefits were primarily associated with longer and more complex documentation • Coding accuracy improved modestly for both long and short notes when using the AI system, though these improvements were not statistically significant in either category • User satisfaction ratings showed slightly higher approval of the AI-generated code suggestions for longer notes, though only one-third of note evaluations were submitted, limiting interpretation		Jurisdiction studied: Scandinavia (Norway and Sweden) Methods Crossover randomized controlled trial	
• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Scribing and documentation tools ○ Communication supports • Sectors ○ Specialty care ▪ Inpatient specialty care • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs	AI-enabled Life Concerto® platform reports the reduction of administrative burden for front-line healthcare providers by automating documentation, integrating real-time clinical data, and streamlining communication across care teams * (80) • The study aimed to design, implement, and evaluate Life Concerto®, an AI-enabled integrated communication and collaboration platform intended to reduce fragmentation in elderly care and streamline administrative tasks for front-line healthcare providers • The platform incorporated a BERT-based natural language processing system for automated keyword and message classification, enabling structured data	High	Publication date: 2025 Jurisdiction studied: Taiwan Methods: Pilot implementation study	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	extraction, clinical categorization, and reduction of manual documentation burdens
	• Expert-developed decision-support algorithms were integrated to automate alerts, generate structured questionnaires, and guide caregivers through evidence-based responses, reducing the need for repetitive manual assessments by clinicians
	• The pilot was implemented across 897 chat rooms and 2,167 users in 35 healthcare institutions, supporting communication among family caregivers, foreign caregivers, nurses, and medical professionals in long-term care, home-based acute care and dementia care settings
	• Results showed that Life Concerto facilitated an average of 5.5 weekly interactions between care teams and patients allowing clinicians to monitor patients remotely without added administrative load
	• In dementia care workflows, the platform reduced the time required for each visit by 66.4% by automatically integrating vital signs, clinical symptoms and geriatric syndrome data, directly reducing provider documentation and assessment time
	• AI-assisted care summary tools automatically extracted relevant clinical information from communication logs, improving information retrieval for healthcare providers and decreasing time spent reviewing patient histories
	• Multilingual, real-time translation and structured communication features minimized time-consuming clarification tasks for nurses and significantly improved efficiency in working with foreign caregivers			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
  ○ Physicians
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
	Nabla AI scribe reduced documentation time by 9.5%, while both Microsoft DAX© and Nabla© AI scribes modestly improved physician burnout, work exhaustion and task load, demonstrating broadly positive but variable effects on reducing administrative burden * (81)
	• The study aimed to evaluate whether two ambient AI scribe systems (Microsoft DAX© and Nabla©) could reduce physician documentation time and improve physician well-being, usability, accuracy and safety
	• The researchers also sought to compare the performance of the two AI vendors to inform health-
		High	Publication date: July 2025
			
			Jurisdiction studied: United States
			
			Methods: Randomized controlled trial (pre-print)
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
• Facilitators of adoption and scaling up ○ Provider-level facilitators	system investment decisions in emerging AI documentation technologies • The trial used a randomized, three-arm design with 238 physicians assigned to DAX, Nabla or a contemporaneous control group using covariate-constrained randomization to ensure baseline balance • Randomization accounted for baseline Epic time-in-note metrics, single-item burnout scores, and weekly clinic days to minimize allocation bias • Earlier evaluations of DAX demonstrated decreases in documentation time, EHR time, task load and some aspects of burnout, though one large nonrandomized study detected no significant changes in financial or EHR-use metrics • A large pilot of the Nabla AI scribe reported small reductions in note-writing time and generally positive physician reception, suggesting modest but favourable efficiency gains • The study found that prior evidence for AI scribes was inconsistent, with small pilot studies showing reductions in documentation time and burnout, while larger cohort studies showed no significant objective improvements despite physicians reporting subjective benefits			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
  ○ Physicians
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	Clinicians see GenAI tools as valuable for reducing documentation burden and improving workflow efficiency, but prefer medium automation to maintain safety and oversight * (82)
	• The objective of the study was to evaluate clinicians' experience with Generative AI tools for clinical documentation and determine acceptable automation levels across three tasks: information extraction, summarization and speech-to-text
	• A total of 38 practicing clinicians interacted with a high-fidelity prototype embedded in an Electronic Health Record interface and completed structured questionnaires on automation use and relevance to practice
	• Results showed that clinicians found all three AI-enabled documentation tasks highly relevant to their practice, with information extraction and summarization rated highest in perceived value
		High	Publication date: August 2025
			
			Jurisdiction studied: Australia
			
			Methods: Mixed methods study
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• More than 50% of participants believed AI-enabled automation could improve workflow efficiency, particularly by reducing time spent on information retrieval and note creation • Medium automation emerged as the most preferred level across tasks, described as providing efficiency benefits while maintaining clinician oversight and perceived safety • Safety perceptions declined significantly as automation increased, with high-automation speech-to-text and summarization rated "probably unsafe" by up to one-third of clinicians • Thematic analysis identified five major themes influencing adoption: efficiency and documentation quality gains, reliability concerns, medico-legal risks, automation bias, and the need for customizable system settings • Study outcomes highlighted that clinicians desire AI to reduce documentation burden by streamlining repetitive tasks, but still expect the ability to verify and edit AI-generated outputs			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
  ○ Physicians
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	AI-assisted documentation in palliative care substantially reduced clinician workload, improved documentation speed and consistency, and supported monitoring and decision-making, but still required human oversight due to potential inaccuracies * (83)
	• The objective of the study was to evaluate the real-world utility of a ChattGPT-based artificial intelligence tool in supporting clinical documentation, symptom monitoring, and decision support in a palliative care unit
	• The researchers conducted a retrospective, single-centre observational study including 25 consecutively admitted palliative care patients during April 2025
	• The AI tool was used to generate draft clinical notes, discharge summaries, medication suggestions, and family-facing educational material through a text-based human-in-the-loop workflow
	• AI-assisted documentation significantly reduced the average time required to complete discharge summaries from 20.4 ± 5.6 minutes to 6.1 ± 1.8 minutes, representing approximately a 70% time reduction
		High	Publication date: June 2025
			
			Jurisdiction studied: Turkey
			
			Methods: Observational study
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• The AI flagged clinically relevant patient trends (such as elevated C-reactive protein values) in eight cases, leading to earlier review and care adjustments by the clinical team • In six cases, the AI system suggested medication-related adjustments, all of which were validated through consultation with internal medicine or infectious disease specialists • Physicians reported reduced cognitive load and increased clarity and consistency of documentation while continuing to retain full clinical oversight of AI-generated output			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
  ○ Nurses
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	AI-powered closed-loop system reports reduced documentation errors and audit time while improving accuracy, efficiency and nurse satisfaction * (84)
	• The objective of the study was to develop and clinically validate a locally deployed, AI-powered closed-loop quality control system (CLQCS) designed to improve the accuracy, completeness and efficiency of electronic nursing documentation
	• Researchers conducted a retrospective analysis of 556 electronic nursing records, comparing 278 pre-implementation and 278 post-implementation documents that were evaluated by blinded auditors using standardized error definitions aligned with national medical record specifications
	• The AI system used a DeepSeek model deployed locally with an SDK that provided contextual prompts, floating error labels, and optional voice alerts, ensuring non-intrusive, real-time feedback during documentation
	• The system's underlying BERT-BiLSTM-CRF model achieved an F1 score of 0.92, demonstrating strong precision and recall in identifying documentation errors, which is essential for reliable automated quality control
	• Implementation of the AI tool reduced the average nursing documentation quality-control time from 238 seconds to 74 seconds, representing a 3.2-fold improvement in audit efficiency
	• The AI-augmented workflow significantly decreased error rates, including a drop in assessment omissions from 7.19% to 1.79%, logical inconsistencies from
		High	Publication date: October 2025
			
			Jurisdiction studied: China
			
			Methods: Retrospective analysis
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	9.35% to 0.72%, and timeliness errors from 8.63% to 0% • Nurse satisfaction with the AI-enabled system was high, with a mean score of 102.73 out of 115 across dimensions such as system quality, information quality, service quality and net benefits			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Emergency care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Provider-level facilitators
	Primary care physicians view artificial intelligence as a valuable tool for reducing administrative burden and improving workflow efficiency, but emphasize that successful adoption requires human-centred design and seamless integration into existing clinical processes* (85)
	• The study aimed to explore how primary care physicians (PCPs) perceive the integration of artificial intelligence tools, with a specific focus on designing human-centred AI that reduces administrative burden and supports rather than disrupts clinical workflows
	• Researchers conducted a qualitative phenomenological study using four focus groups (n = 40) that included PCPs, residents and AI developers, enabling in-depth discussion about real-world workflow needs, perceptions of AI, and preferred implementation strategies
	• Physicians emphasized that AI tools should act as "silent partners" that streamline repetitive tasks without creating additional alerts, interruptions or workflow disruptions that would compound administrative burden
	• A major finding was that poor user interface design, lack of interoperability, and technology implemented without clinician input create inefficiencies; thus, AI tools must be co-designed with front-line clinicians to ensure they reduce administrative responsibilities
		Low	Publication date: 2025
			
			Jurisdiction studied: Israel
			
			Methods: Qualitative phenomenological study
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
  ○ Physicians
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
	Retrospective note-comparison analysis showed that physicians must make substantial edits to automatic speech recognition-generated notes, revealing that current speech recognition workflows still create significant administrative burden despite easing initial documentation * (86)
	• The study aimed to understand how physicians use asynchronous automatic speech recognition (ASR) to create clinical notes and to characterize the types of edits required to finalize ASR-generated documentation
		Low	Publication date: 2025
			
			Jurisdiction studied: United States
			
			Methods: Retrospective analysis
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ Provider-level barriers • Facilitators of adoption and scaling up ○ Provider-level facilitators	• Researchers analyzed 649 dictated inpatient progress notes from nine physicians, comparing ASR transcripts with the final edited versions using token-level alignment to identify and categorize all edits • Physicians added 40% of the words in the final notes during editing, indicating that ASR alone did not produce complete or accurate documentation without substantial manual revision • Only about 3% of dictated content required short error-correction edits affecting clinical accuracy, suggesting that many manual corrections were minor but time-consuming • The majority of editing time occurred in the Assessment & Plan section, where physicians frequently expanded or clarified clinical data, plans and reasoning that had not been fully captured during dictation • Some physicians inserted large amounts of new clinical information manually during editing, such as laboratory results, assessments or copied material from previous notes • The use of verbalized commands to automatically insert structured clinical data reduced some manual editing tasks but was inconsistently adopted among physicians • Overall, the findings reveal that ASR-based documentation in a noninteractive workflow imposes a significant administrative burden due to extensive required editing, despite reducing initial note creation time			
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools ○ Communication supports • Sectors ○ Specialty care ▪ Inpatient specialty care • Healthcare providers ○ Physicians ▪ Specialists ○ Nurses ○ Allied health professionals • Outcomes	Ray-Ban Meta consumer-grade, artificial intelligence-powered smart glasses may be effectively utilized during foot and ankle limb preservation surgery, supporting hands-free intraoperative stepwise procedural documentation without compromising sterility or appreciably prolonging operative times * (87) • This study aimed to evaluate the feasibility and utility of smart glasses for hands-free documentation during limb preservation surgery • The device was piloted by two primary foot and ankle surgeons on a typical limb salvage urban adult cohort undergoing limb preservation or reconstructive surgery	High	Publication date: 4 October 2025 Jurisdiction studied: Los Angeles, United States Methods: Pilot cohort study	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ Provider experiences	• The device included a camera operated through voice commands for taking photos and videos, and surgeons activated recordings using verbal prompts • First-person footage from the device was viewed by trainees as more engaging than typical instructional videos • The device enabled real-time streaming for remote consultation and tele-mentoring • No device-related adverse events or significant user discomfort were reported, and the glasses caused minimal disruption to the roles of perioperative staff • The device's impact on administrative burden was not evaluated beyond facilitating education, communication and documentation to the extent that operative workflow was not negatively impacted			
• Sectors ○ Home and community care • Healthcare providers ○ Nurses • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Barriers to adoption and scaling up ○ Provider-level barriers	Integrating AI into home healthcare nurses' wound care practices may contribute to administrative burden, while opportunities and challenges were identified across relational (e.g., building trust), embodied (e.g., sensory judgment) and adaptive (e.g., situational awareness and improvisation) practice dimensions * (88) • This study examined home healthcare nurses' perceptions of wound care, the AI integration therein, and the opportunities and challenges that may arise ○ Semi-structured interviews were conducted with 14 registered nurses from two Swedish municipalities • Nurses described several ways AI could assist their work, through improving documentation, supporting wound image interpretation, and facilitating care team communication, insofar as they reduced administrative burden or strengthened decision-making while still maintaining the human aspects of care • Nurses highlighted that relational work is fundamental for establishing patient trust, supporting adherence to treatment, and delivering improved outcomes in wound care ○ They also noted that current digital systems had added to their administrative workload instead of reducing it, which in turn diminished the time they could devote to relational patient care ○ Concerns were also expressed that AI may favour efficiency and standardization at the expense of	Low	Publication date: 19 June 2025 Jurisdiction studied: Sweden Methods: Qualitative study, thematic analysis	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	the context-specific interactions central to wound care while risking the reduction of patients to medical objects or data • Nurses' perspectives showed that embodied practices through the simultaneous engagement of touch, sight and smell were central to home-based wound care of which AI may not be capable • Nurses noted the improvisational nature of care arising from individual patient situations and unpredictable home settings, requiring adaptive practices that represented challenges for AI tools • The AI technologies were not specified			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
• Healthcare providers
  ○ Physicians
  ▪ Specialists
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Costs
• Facilitators of adoption and scaling up
  ○ System-level facilitators
  ○ Organizational-level facilitators
  ○ Provider-level facilitators
	The use of an LLM-based clinical decision support system (PEACH (PErioperative AI CHatbot)) in perioperative consultations did not show statistically significant reduction in overall documentation time among resident physicians, but was associated with time reductions for moderately complex cases and for more experienced physicians subgroups, was preferred in 57.1% of consultations, and was projected to generate annual institutional savings of US$146,297 (sensitivity estimates range: US$36,280 to $146,295) * (89)
	• This study examined the impact of an LLM-powered chatbot on the primary outcome of documentation efficiency, and on the secondary outcomes of documentation quality, user acceptance, and institutional cost-effectiveness
	• PEACH was built on the PAIR Chat platform, a large-context language model hosted on the secure Government Commercial Cloud and designed for healthcare AI that handles restricted or sensitive data, using Claude 3.5 Sonnet
	• Researchers found that PEACH did not significantly reduce overall documentation for resident physicians at Singapore General Hospital
	• The subgroup finding of significant documentation efficiency in intermediate-complexity cases and among experienced physicians suggests that low-complexity cases allowed little improvement, while high-complexity cases still required nuanced human decision-making beyond LLM's capabilities
	• Per-case time efficiency gains, though limited, aggregated into considerable institutional savings,
		High	Publication date: 21 July 2025
			
			Jurisdiction studied: Singapore
			
			Methods: Prospective, randomized crossover trial
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	supporting the clinical viability and cost-effectiveness of LLM-assisted workflows • The variability in LLM uptake and use across clinicians may be addressed by facilitators including leadership endorsement, structured training, normalization among peers, and improved system integration (embedding into EHR systems, optimizing user interfaces and enabling real-time support)			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
  ○ Patient-discharge supports
• Sectors
  ○ Specialty care
  ▪ Emergency care
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Barriers to adoption and scaling up
  ○ Organizational-level barriers
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Organizational-level facilitators
  ○ Provider-level facilitators
	The study evaluated an LLM-based discharge documentation and found that AI-assisted notes were faster to produce and higher in quality than manual notes * (90)
	• The AI tool (Y-KNOT-EDN) cut emergency physicians' documentation time nearly in half, reducing median writing time from 69.5 seconds (manual) to 32 seconds (LLM-assisted), showing strong effectiveness for reducing administrative burden in a high-pressure clinical environment
	• The study used 50 real emergency department cases, generating three versions of each discharge note (manual, fully AI-generated, and AI-assisted), which were then independently evaluated by physicians using a structured 4C rubric (completeness, correctness, conciseness, clinical utility), providing a controlled and systematic way to measure both burden reduction and documentation quality
	• LLM-assisted notes were consistently higher quality than manually written notes across all evaluated dimensions, indicating that AI support can improve documentation outcomes while reducing effort
	• When physicians used the AI-generated drafts as a starting point, the resulting notes showed better alignment with clinical standards than both fully manual notes and notes generated by the AI alone, demonstrating that optimal performance comes from human-AI collaboration, not fully automated documentation
	• The study highlights important contextual constraints: the tool performed well in an emergency department of a large academic hospital using a custom internal platform; the authors note that generalizability across disciplines, EHR systems and real-world clinical environments remains uncertain
		High	Publication date: October 2025
			
			Jurisdiction studied: South Korea
			
			Methods: Comparative effectiveness
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• The authors identified accuracy risks (omissions and confabulations) in AI-generated notes, which required physician review and correction			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Primary care
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Barriers to adoption and scaling up
  ○ Organizational-level barriers
  ○ Provider-level barriers
• Facilitators of adoption and scaling up
  ○ Organizational-level facilitators
  ○ Provider-level facilitators
	The study found that an ambient-AI documentation tool reduced in-visit documentation time, lowered clinicians' cognitive workload, improved their ability to focus, did not reduce after-hours EHR work, and produced longer but more detailed clinical notes * (91)
	• The study involved 313 clinicians across multiple clinics who completed surveys before and after implementation, combined with automated extraction of EHR metadata on documentation time and note length, allowing for triangulation of subjective and objective workload measures
	• After implementation of the ambient-AI documentation platform, the average time clinicians spent writing notes per appointment decreased from 6.2 minutes to 5.3 minutes ($p < 0.001$), indicating a measurable reduction in documentation burden
	• Clinicians reported a substantial drop in subjective workload across mental demand, temporal demand, frustration and overall effort, with all workload dimensions showing significant improvements after adopting the AI tool
	• The majority of clinicians (especially in primary care) reported greater ability to give undivided attention to patients, with agreement rising from 57.9% to 93.0%, suggesting meaningful improvements in perceived patient-provider interaction quality
	• Off-hours EHR use ("pyjama time") did not significantly decrease, indicating that although the AI reduced in-appointment documentation time, it did not meaningfully reduce after-hours administrative burden
	• Documentation length increased significantly, as notes produced with AI assistance contained more characters, implying that the system generated fuller or more detailed documentation, which could improve completeness but may also inflate note volume
		High	Publication date: May 2025
			
			Jurisdiction studied: California, USA
			
			Methods: Quality improvement
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
  ○ Physicians
	A web-based medical speech recognition technology can shorten the time and length of documents * (91)
	• The purpose of this study was to describe the effects of a web-based medical speech recognition system on
		Low	Publication date: November 2015
			
			Jurisdiction studied: German
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ health workers ○ Caregivers • Settings ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation)	documentation speed and length, and physician satisfaction • A total of 28 physicians were randomized to one of two conditions: intervention or control • Participants were physicians from the surgical department at a University Hospital in Germany • The documentation speed of the intervention group was 26% of the group • The length of documents was shorter in the intervention condition (649 vs. 356 characters) • Physicians' mood rating when using the tool was similar hen using the tool (1.3) vs in the control (1.6)		Methods: Randomized control trial	
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Healthcare providers ○ Pharmacists • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation)	A customized electronic health record can reduce the time required for pharmacists to make decisions on renal dosing, allowing for more recommendations to be made * (92) • The purpose of this study was to evaluate the use of a customized clinical pharmacist responsibility (CPR) dose adjustment tool • The researchers compared the patient records between July–August 2022 (pre-implementation) to July–August 2023 (post-implementation) • Compared to the pre-implementation group, the post-implementation group had 68.2% more interventions completed and required 47.2% fewer reviews	Low	Publication date: 2 April 2025 Jurisdiction studied: United States Methods: Retrospective observational cohort	Not reported
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Specialty care ▪ Emergency care ▪ Outpatient specialty care • Healthcare providers ○ Physicians ▪ Generalists ▪ Specialists • Outcomes • Provider experiences ○ Time spent on administrative tasks (e.g., documentation) ○ Time available for patient care • Accuracy of outputs	Ambient scribe tools are generally well received by clinicians who tried it; limitations to use of the tool included style incapability, errors and inability to capture nuances * (93) • The purpose of this study was to explore the feasibility of an electronic health record integrated ambient scribe technology used in a large academic health system • Healthcare professionals who used the technology were ambulatory and emergency department physicians and advanced practice providers • The tool was compatible with apple devices and sent transcripts to the Microsoft cloud • Users were provided training to use the tool, including a video instruction • The tool was available to over 24,000 professionals	High	Publication date: 1 October 2025 Jurisdiction studied: United States Methods: Case report	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
• Barriers to adoption and scaling up ○ Provider-level barriers	• Within a three-month period 1% of notes used scribing and 1,223 clinicians had tried it • Approximately 90% would be disappointed if they lost access to the tool and 85% were satisfied with the training experience • Reasons for not trying the tool include lack of awareness, felt that workflow was already optimized, hesitancy on artificial intelligence, and insufficient time to learn the tool • Reasons for incomplete use of the tool included extensive time for drafting, lack of style of notes, errors in notes, and lack of capture of nuances			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
• Healthcare providers
  ○ Physicians
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Accuracy of outputs
	GPT-40, a large language model, had good accuracy, recall, precision and decreased documentation time, and was well-received by clinicians to generate whole-organ MRI scores and assist in knee osteoarthritis categorization * (94)
	• The purpose of this study was to evaluate the performance of large language models to generate whole-organ MRI score to predict knee osteoarthritis severity
	• A total of 160 reports were used in this study
	• Clinicians found the generated reports easier to interpret than the original reports and spent 58.65% less time with reports
	• The technology used was GPT-40 (full) and had good accuracy (93.9%), recall (87.3%) and precision (94.2%)
		High	Publication date: 14 May 2025
			
			Jurisdiction studied: China
			
			Methods: Retrospective
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Specialists
• Outcomes
  ○ Provider experiences
  ○ Time spent on administrative tasks (e.g., documentation)
  ○ Time available for patient care
	GPT-40, a cross-language transformation tool, could decrease the time required for documenting thoracic surgical procedures, with a high accuracy and precision * (95)
	• The purpose of this study was to explore the accuracy and efficiency of cross language transformation for documenting thoracic surgical oncology procedures
	• A total of 466 lobectomy records from seven oncological centres were included in this study
	• The cross-language transformation used was Generative Pre-trained Transformer 4 Omni (GPT-40)
	• The tool had an accuracy of 0.966, precision 0.981, and recall 0.982 in both English and Chinese
		High	Publication date: 2 May 2025
			
			Jurisdiction studied: China
			
			Methods: Cross-sectional
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
• Accuracy of outputs	• Few (less than 2%) errors were seen with the tool including terminology misinterpretation, sequence errors and detail omission			

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Home and community care
  ○ Primary care
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Time spent on administrative tasks (e.g., documentation)
  ○ Time available for patient care
	Ambient documentation technology has the capacity to improve burnout and clinician well-being in clinicians, but it may not be able to capture important nuances for complex patient cases * (96)
	• The purpose of this study was to determine the association between ambient documentation technology and clinician burden and burnout
	• A total of 1,430 clinicians from two academic medical centre where systems were surveyed, pre- and post-implementation of ambient documentation technology (min. 42 days of exposure)
	• Participants were physicians or advance practice practitioners working in primary care, urgent care, hospital, surgeries or other subspecialities
	• Qualitatively participants reported increased contact with patients and more comprehensive documentation
	• Some participants expressed that the technology was good for basic cases, but may miss nuances on more complex cases (e.g., pediatrics)
	• Post test results showed reduction in burned and improved well-being in clinicians
		High	Publication date: 21 August 2025
			
			Jurisdiction studied: United States
			
			Methods: Cross-sectional
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Inpatient specialty care
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
• Facilitators of adoption and scaling up
  ○ System-level facilitators
	A customized LLM was able to perform similarly to physician-written summaries in terms of completeness and accuracy, and led to reduced documentation time from around seven minutes to under 16 seconds * (97)
	• This study showed that LLM-generated summaries were non-inferior to ones that physicians prepared, without showing any factual errors
	• LLM summaries tended to be longer (100 words versus 60), and rated as less concise, but this was found to have limited relevance at a clinical level
	• LLMs generated summaries around 28 times faster and were trusted as much by physicians as physician-written ones, highlighting their acceptance for clinical use
	• Integration with EHR, customization of prompts for specialty providers, and more refinement is expected to further improve the real-world usefulness of LLM-generated summaries
		High	Publication date: 2025
			
			Jurisdiction studied: Netherlands
			
			Methods: Cross-sectional non-inferiority study
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
• Settings
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Provider experience
• Facilitators of adoption and scaling up
  ○ Organizational-level facilitators
	AI summaries of patient encounters reduced EHR review time, especially among clinicians with more documentation workloads, while still retaining accuracy, utility and safety * (98)
	• Average clinical review time decreased from 3:22 to 3:04 minutes per visit, but wasn't statistically significant
	• However, providers that had higher review times showed a much larger reduction, suggestion a targeted implementation approach might be warranted
	• Most clinicians believed the tool to be accurate, safe and time saving, with more than half preferring to work in practices using AI summary tools
	• Minor errors (2.9%) were reported but were largely due to user error than model error
	• Implementation requires bias monitoring and workflow integration
		High	Publication date: 2025
			
			Jurisdiction studied: United States
			
			Methods: Pre-post test
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ Time available for patient care
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Costs
	AI-assisted pharmacy clinical trial documentation led to an 80% reduction in preparation time and generated cost savings, thereby allowing pharmacists to focus on higher-value clinical and research-related tasks * (99)
	• Average preparation time was reduced from 148 minutes to 30 per summary (80% reduction)
	• Overall, annual workflow costs dropped from more than US$20,000 to $7,000 and had an incremental cost effectiveness ratio of -$97 per hour
	• Net monetary benefit was estimated to be around $300,000 over 10 years across sensitivity analyses and 10,000 Monte Carlo simulations
	• The cost-effectiveness appeared to persist even for low task volumes and with pessimistic assumptions, suggesting that it can be implemented in a variety of settings and at different levels of scale
	• Overall, an estimated 142 hours of pharmacist labour was made available for other tasks like medication therapy management and clinical oversight
	• The outcomes were robust, despite the requirement of some error correction in AI outputs, which suggests
		High	Publication date: 2025
			
			Jurisdiction studied: United States
			
			Methods: Pre-post-test with cost-effectiveness and cost-avoidance analyses as well as modelling to predict future economic benefits
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	that more refined models can improve the benefits gained			

• Sectors
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ After-hours work reduction decreases in work outside standard hours
• Accuracy of outputs
	AI-contours showed excellent descriptive performance of radiotherapy scores and saved time* (100)
	• The purpose of this study is to evaluate the real-world performance of an auto contouring software for head and neck radiotherapy
	• Participants were asked to compare clinician vs AI generated rapports
	• Generally, there were mixed results for the preferences of contours, with 1/3 of participants preferring clinicians, 1/3 AI, and 1/3 perceiving no differences
	• Clinician-generated contours for larynx, oral cavity and pharyngeal constrictors
	• AI-generated contours were preferred for optic chiasm and elective target volume (TV)
		High	Publication date: 8 July 2025
			
			Jurisdiction studied: United Kingdom
			
			Methods: Retrospective study
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Specialty care
• Healthcare providers
  ○ Physicians
• Outcomes
• Accuracy of outputs
	Inconclusive results were found on the accuracy, organization and usefulness of an ambient scribe tool in a palliative medicine outpatient setting * (101)
	• The purpose of this study was to evaluate the utility and time of ambient scribe tools in a palliative medicine outpatient setting
	• The name of the tool was Scribeberry, a tool hosted on a Canadian server
	• The trial was piloted for two one-month periods by two palliative medicine resident physicians
	• The tool was provided with a prompt from a clinical encounter, and the note was then evaluated for accuracy, organization and usefulness
	• Results were mixed, with one resident experiencing time savings and improved usefulness of the tool over time and the other resident experiencing no improvements
		High	Publication date: 26 August 2025
			
			Jurisdiction studied: Canada
			
			Methods: Pilot study
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Sectors
  ○ Home and community care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
	After 30 days of implementation, artificial intelligence scribes could reduce odds of burnout and cognitive task load, and increase attention and patient confidence in care physicians and advance care practitioner * (102)
	• The purpose of this study was to examine the association between artificial intelligence scribes and clinician administrative burden and burnout
		High	Publication date: 2 October 2025
			
			Jurisdiction studied: United States
			
			Methods: Quantitative
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
▪ Specialists • Settings ○ Academic- or research-oriented care settings (vs. community settings)	• The study was conducted with ambulatory care physicians and advance care practitioners across six community and academic healthcare systems • After 30 days of using the scribe, participant odds of experiencing burnout was lowered by 74%, along with increased attention with patients and confidence in understanding notes, and reduced cognitive task load			
• Sectors ○ Specialty care • Healthcare providers ○ Physicians ▪ Specialists • Outcomes • Accuracy of outputs	Model assisted radiographs were 15.5% more efficient; however, there was no difference in clinical accuracy or textual quality * (103) • The purpose of this study is to explore the association between a workflow-integrated generative model and documentation efficiency, clinical accuracy, and textual quality of final reports • The model was a multimodal encoder-decoder transformer-based model • A total of 23,960 radiographs (n = 11,980 equal n per group; model use and non-model use) were analyzed	Low	Publication date: 5 June 2025 Jurisdiction studied: United States Methods: Quantitative	Not reported
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Specialty care • Healthcare providers ○ Physicians ▪ Specialists • Outcomes • Accuracy of outputs	ChatGPT can improve the structure, efficiency and accuracy of notes when done in collaboration with a human with expertise in the area * (104) • The purpose of this study was to compare the quality, accuracy and efficiency of notes taken by a surgical resident to an attending surgeon using ChatGPT, ChatGPT alone, and an attending alone • The prompt provided stated that the response must include chronological description of the indication for surgery, procedural steps, surgical manoeuvres tools, anatomic structures manipulated, and closing techniques; the bot was also told not to invent any findings and to use professional language • A total of five prompts were completed per group (n = 20) • Ten blinded residents and attending (n = 5/group) independently rated each prompt • Notes written by an attending and ChatGPT received the highest approval rate from raters (79%) and ChatGPT only prompts received the lowest approval rate (23%) • Time to complete the notes were fastest in the groups using AI, with ChatGPT alone being the fastest group	High	Publication date: 14 August 2025 Jurisdiction studied: United States Methods: Blinded multicentric study	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
	• ChatGPT-only notes had the most frequent omissions and exaggerations			

• Types of AI tools for reducing administrative burden
  ○ Communication supports
• Sectors
  ○ Primary care
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
• Healthcare providers
  ○ Physicians
  ▪ Generalists
  ▪ Specialists
• Settings
  ○ Rural/remote communities (vs. urban communities)
  ○ Academic- or research-oriented care settings (vs. community settings)
• Outcomes
• Accuracy of outputs
  ○ Other equity-centred quadruple aim metrics
  ▪ Patient experience
  ▪ Provider experience
	An AI chatbot providing information on radiology exams was evaluated favourably by patients, trainee physicians and physicians * (105)
	• This study evaluates the impact of an AI chatbot using the Botpress platform in assisting communication on clinical radiology topics
	• The AI chatbot successfully engaged in conversation and provided accurate information regarding radiology exams including MRI, CT, X-ray and ultrasound
	• Specialist physicians, general physicians, trainee physicians and patients rated the AI tool's clarity, relevance and accuracy positively
	• Quality assessment scores of the AI tool were highest among patients, followed by trainee physicians, and then specialists
		High	Publication date: 2025
			
			Jurisdiction studied: Not reported
			
			Methods: Structured evaluation
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
  ○ Prior authorization supports
  ○ Patient-discharge supports
  ○ Patient-scheduling and triage supports
  ○ Communication supports
• Sectors
  ○ Home and community care
  ○ Primary care
  ○ Specialty care
  ▪ Emergency care
  ▪ Outpatient specialty care
  ▪ Inpatient specialty care
  ○ Rehabilitation care
  ○ Long-term care
  ○ Public health
• Healthcare providers
	Health systems have found success in using AI to support tasks such as clinical documentation, risk stratification and revenue cycle, but identify barriers to continued successful adoption * (106)
	• A survey administered to health systems in the United States evaluated perceived successes and challenges of AI in healthcare
	• Health systems identified their most important priorities for AI as reducing caregiver burden and improving satisfaction, followed by patient safety/quality, workflow efficiency, financial benefits, and patient experience
	• Health systems most commonly used AI for imaging and radiology, detecting sepsis, clinical notes, and determining risk of deterioration or unplanned readmission
		Medium	Publication date: 2025
			
			Jurisdiction studied: United States
			
			Methods: Cross-sectional survey
				Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations
○ Physicians ▪ Generalists ▪ Specialists ○ Nurses ○ Pharmacists ○ Allied health professionals ○ Lay/community health workers ○ Caregivers • Settings ○ Rural/remote communities (vs. urban communities) ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Health outcomes ▪ Provider experience ▪ Costs • Barriers to adoption and scaling up ○ Organizational-level barriers • Facilitators of adoption and scaling up ○ Organizational-level facilitators	• The AI uses associated with a "high degree of success" were clinical documentation (53%), clinical risk stratification (38%), and revenue cycle (23%) • Identified barriers to implementation of AI in health systems were lack of AI tool maturity, financial concerns, regulatory uncertainty, lack of clinician use, insufficient technology or expertise, and insufficient leadership support			
• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Healthcare providers ○ Physicians • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ After-hours work reduction decreases in work outside standard hours	Clinical documentation software can reduce time spent documenting, burnout and frustration for clinical care providers, particularly early adopters * (107) • The purpose of this study was to evaluate the impacts of ambient clinical intelligence, a clinical documentation software on documentation workload and provider well-being • Early implementers of the program used the software for 20–40% of visits and late implementers 0% • Early adopters had a reduction in after-hours time of 26 minutes per day and late implementers of 0.2 minutes per day • Early adopters had a 26 minute per day reduction for day hours and 3.2 for late implementers • Software use was correlated with a reduction in provider burnout and frustration	High	Publication date: 10 October 2025 Jurisdiction studied: United States Methods: Quantitative	Not reported

Dimension of organizing framework	Declarative title and key findings	Relevance rating	Study characteristics	Equity considerations

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
  ○ Physicians
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ After-hours work reduction decreases in work outside standard hours
	An artificial intelligence documentation system can reduce time needed to document notes for advanced practice providers, physicians and podiatrists * (108)
	• The purpose of this study was to evaluate the use of an artificial intelligence documentation system on provider efficiency in electronic health records
	• Participants were advanced practice providers, physicians, and podiatrists
	• The average time to write notes per day was 16.9 minutes, a 3.1 decrease
	• Time for unscheduled days decreased by 31%, 22.3 minutes
	• Time for afterhours decreased by 61%, –23.6 minutes
		High	Publication date: 16 September 2025
			
			Jurisdiction studied: United States
			
			Methods: Quantitative
				Not reported

• Types of AI tools for reducing administrative burden
  ○ Scribing and documentation tools
• Healthcare providers
  ○ Physicians
• Outcomes
  ○ Provider experiences
  ▪ Time spent on administrative tasks (e.g., documentation)
  ▪ After-hours work reduction decreases in work outside standard hours
	Artificial intelligence scribes could significantly reduce appointment time and time spent documenting for ambulatory clinicians * (109)
	• The purpose of this study was to evaluate the association between artificial intelligence scribes and electronic health record efficiency for ambulatory clinicians
	• No differences in after-hours electronic health record use or time to close a case were seen
	• A two-minute reduction in appointment time was seen, which could approximate one hour of savings in a day
		High	Publication date: 10 October 2025
			
			Jurisdiction studied: United States
			
			Methods: Quantitative
				Not reported

* indicates studies included in the update

Appendix 4: Detailed findings from a jurisdictional scan of Canadian provincial and territorial experiences with AI tools for reducing administrative burden among front-line healthcare providers

Jurisdiction	Key findings	Component(s) of the organizing framework addressed

Canada (federal/national)	• Canada Health Infoway is a federally funded not-for-profit organization that works to increase digital health innovation and secure information sharing
	  ○ It aims to increase use of AI in healthcare by working with industry and public partners for the adoption of artificial intelligence (AI) technologies including AI scribes, scheduling tools, and analytic planning decision support systems
	• In June 2025, Canada Health Infoway launched the AI Scribe Program to provide 10,000 primary care providers (PCPs) with a one-year, fully funded license from one of nine AI scribe vendors
	• An evaluation of the program was conducted by the Women's College Hospital Institute for Health System Solutions and Virtual Care (WIHV) evaluation team and the Infoway Research and Analytics team, with preliminary findings indicating that:
	  ○ more than half of the program registrants (mostly family physicians) demonstrate active AI scribe use
	  ○ respondents of a pre-implementation survey found that AI scribes reduced their documentation burden and mental load and improved their work-life balance
	  ○ AI scribes enhanced the structure of medical notes and helped PCPs to be more present with their patients and use appointment times more efficiently
	• Next steps for the evaluation team are to continue analyzing the findings to measure the impact of the AI Scribe Program to inform a final evaluation report
	• A toolkit was developed to assist healthcare systems across Canada to understand and implement AI and a procurement toolkit to ensure compliance to AI regulations, ethics and safety
		• Types of AI tools for reducing administrative burden
		  ○ Patient-scheduling and triage supports
		  ○ Scribing and documentation tools
		• Healthcare providers
		  ○ Physicians
		  ▪ Generalists
		  ▪ Specialists
		• Settings
		  ○ Academic- or research-oriented care settings (vs. community settings)
		• Outcomes
		  ○ Provider experiences
		  ▪ Time spent on administrative tasks (e.g., documentation)
		  ▪ Time available for patient care
		• Facilitators of adoption and scaling up
		  ○ System-level facilitators

	• The AI Strategy for the Federal Public Service 2025–2027 was developed to ensure AI adoption and use by public servants aligns with government values, delivers the greatest benefits, is efficiently and collaboratively developed, and mitigates risks and harms
	  ○ The strategy includes initiatives like CANChat, which is a multilingual chatbot that assists in drafting, editing and information management
		• Types of AI tools for reducing administrative burden
		  ○ Scribing and documentation tools
		  ○ Communication supports
		• Facilitators of adoption and scaling up
		  ○ System-level facilitators

	• Scale AI is a federally funded AI global innovator (a part of the Pan-Canadian Artificial Intelligence Strategy) based in Montreal that aims to improve Canada's AI supports in a variety of sectors including healthcare to streamline processes and improve service delivery
	  ○ It aims to improve productivity and optimize hospital operations to improve healthcare delivery
		• Types of AI tools for reducing administrative burden
		  ○ Patient-scheduling and triage supports
		  ○ Scribing and documentation tools
		  ○ Communication supports
		• Outcomes
		  ○ Provider experiences
		  ▪ Time spent on administrative tasks (e.g., documentation)
		  ▪ Time available for patient care

	• CareWay, a Canadian-based AI medical assistant scribe, has partnered with CAN Health Network to streamline physician workflows	• Types of AI tools for reducing administrative burden

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
	○ CareWay generates medical documentation and completes medical forms during medical consultations using a microphone ○ This collaboration aims to improve workflow, increase efficiency, reduce clinician burnout and increase patient care	○ Scribing and documentation tools • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care
	• In 2017, the Canadian Medical Association (Joule) partnered with Cloud DX Inc, an Ontario digital healthcare AI company, to improve quality of patient care and reduce physician burden through the use of mixed reality (VR) technologies ○ The technology allowed physicians to increase triage efficiency and make quicker decisions	• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care
British Columbia (B.C.)	• Doctors of BC has released a policy statement outlining the measures they believe are important to successfully integrating AI technology into healthcare spaces ○ Recommendations include involving physicians in leadership and governance, establishing risk mitigation, continuous monitoring and evaluation, privacy protections, transparency, training for clinicians, and consideration of ethical implications • The Fraser Health Authority has worked with Deloitte Canada to develop and implement an AI tool that will assist with scheduling and predicting trends in demand for healthcare ○ With funding from a $1.5 million Scale AI award, the AI tool has been piloted in an emergency department with positive results, allowing staff to better understand trends in patient arrivals and optimize scheduling accordingly ○ A similar tool is being developed for use by hospitalists to predict surges and proactively adjust clinician workflow • The Fraser Health Authority has developed and implemented an AI tool to predict when patients are ready for discharge ○ The tool was found to be 86% accurate in predicting when patients are ready for discharge; this is four times more accurate than traditional human predictions ○ With the use of the AI discharge tool 600 patients might be discharged in a day, compared to 250–300 without • The Artificial Intelligence Scribe Burdens pilot program evaluated the potential for an AI scribe to reduce physician administrative workloads from late 2024 to early 2025 ○ The pilot was conducted by Doctors of BC, in collaboration with Canada Health Infoway and the Amplify Care • Some findings include: ○ a reduction of 2.7 hours per week of administrative tasks ○ a projection of 5.7 hours saved weekly on post-appointment documentation ○ 97% of participating clinicians would recommend an AI scribe ○ 78% of participating clinicians felt they would be more efficient with the AI scribe ○ 78% of participating patients felt they received increased attention from their physician • The B.C. Digital Health Strategy published in 2024 identifies the use of AI as one way to reduce the time providers spend on administrative tasks • The BC Scribe Trial Program running from July to December 2025 allows physicians, nurse practitioners, midwives and dentists in ambulatory or outpatient settings to participate in a free six-week trial of an ambient AI scribe	• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Scribing and documentation tools ○ Patient-discharge supports • Sectors ○ Primary care ○ Specialty care ▪ Emergency care ▪ Outpatient specialty care ▪ Inpatient specialty care • Healthcare providers ○ Physicians ▪ Generalists ▪ Specialists ○ Nurses • Settings ○ Rural/remote communities (vs. urban communities) ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation)

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
		▪ After-hours work reduction decreases in work outside standard hours ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Health outcomes • Facilitators of adoption and scaling up ○ Organizational-level facilitators ○ Provider-level facilitators
Alberta	• Alberta Innovates has given $9.5 million in funding to research projects aimed at integrating AI into healthcare spaces • Projects include: ○ development of an AI scribe technology ○ improving Alberta 811 Health Link to predict opioid overdoses and increase diagnostic imaging efficiency ○ identifying and treating stroke patients, ○ patient decision support tools ○ infection control within hospitals ○ understanding impacts of social determinants of health in primary care • The University of Alberta is developing and piloting an AI scribe technology for emergency departments in partnership with Alberta Health Services ○ The Alberta Machine Intelligence Institute reported on some preliminary data from this project, stating that it had been employed in over 6,700 clinical sessions by 58 physicians in 10 emergency facilities, and has been used to process over 7,500 conversations for up to 85% of patient encounters ○ The next phase of the pilot plans to expand this tool to over 850 emergency physicians • The Alberta Medical Association has developed a Principles and Policy document outlining their position on the use of AI in healthcare with respect to ethics, patient care, physician education, implementation processes, medical accountability, privacy and data management, environmental impact and governance and regulation • Professional associations including the Alberta College of Dental Hygienists, College of Physicians & Surgeons of Alberta and Alberta Association of Nurses have released guidance on the use of AI in healthcare, emphasizing aspects such as patient privacy and technological bias • A 2023 report by the Alberta College of Family Physicians and Alberta Medical Association regarding decreasing administrative burden in primary care identified AI as a potential technology to alleviate administrative burden through referrals, electronic medical records and documentation assistance • The Office of the Information and Privacy Commissioner of Alberta has released guidelines for providers intending to use AI scribes in their practice to assess the impact of these tools on patient privacy in accordance with the *Health Information Act*	• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Primary care ○ Specialty care ▪ Emergency care ▪ Outpatient specialty care ▪ Inpatient specialty care • Healthcare providers ○ Physicians ▪ Generalists ▪ Specialists ○ Nurses ○ Allied health professionals • Settings ○ Rural/remote communities (vs. urban communities) ○ Academic- or research-oriented care settings (vs. community settings) • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Health outcomes • Facilitators of adoption and scaling up ○ Organizational-level facilitators

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
		○ Provider-level facilitators
Saskatchewan	• The Saskatchewan Medical Association provides AI Scribe Resources to help physicians identify appropriate AI solutions for their practice ○ The webpage provides guidelines for selection an appropriate tool considering privacy, requirements and functional needs ○ The webpage states that the benefits of AI might include reduced burden, enhanced patient experience, reduced time, increased patient care time, reduced cognitive load, improved workflow, captured dialogue, auto-populated reports, and instantaneous drafts ○ Risks of AI might include data breaches, errors, biases, training time and integration issues ○ Physician obligations when using AI scribe resources include ensuring accuracy, monitoring outcomes, ensuring informed consent and maintaining transparency ○ The organization provides steps for conducting a privacy impact assessment of using AI scribe resources including defining the project objectives, identifying legal frameworks, visualizing data flows, conducting a privacy analysis, monitoring document progress, and ensuring ongoing evaluation of privacy ○ A threat assessment may also be helpful, including to identify data and processes, threats and vulnerabilities, potential impacts, security measures, risk levels, and proposed mitigation strategies ○ The AI scribe uses large amounts of data collection, training, feedback loops to refine performance, and continuous learning ○ The organization also includes an AI Scribe Product Assessment to help individuals select their preferred vendor, which asks about the following dimensions: ▪ Bias and non-discrimination: Describing sources of bias in training data, accounting for incomplete data, bias checking policies, third party audits of bias ▪ Explainability: In-depth description of products, consistent organizational requirements, explanation on result interpretation, willingness to enhance AI transparency ▪ Transparency and knowledge transfer: Documentation on risks and limits, details on training description, data storage and access, procedures to access data ▪ Accuracy and effectiveness: Steps to account for errors, minimum performance metrics, involvement of healthcare professionals in development and testing, consistency with legal obligations ▪ Regulatory compliance: Adherence for transparency and other regulatory requirements, data protection requirements, protections ▪ User and patient experience: Acknowledgement of organizational values, privacy policies ▪ Ethics: Procedure on updates to data handling, ability to disable functionalities, safeguard for overreliance on the tool, alignment with ethical standards, track record of reputable connections in healthcare ○ Approximately 3,300 members currently utilize the software to create and edit patient reports • The College of Physicians and Surgeons of Saskatchewan created a guidance document for AI in medical practice ○ The document states that AI should augment, not replace, medical judgment; physicians must remain accountable for decisions, continuous learning is needed, and privacy and biases issues must be mitigated ○ Physicians must be transparent on their use of AI and ensure informed consent ○ AI can be used to create educational materials to improve engagement and health literacy ○ Examples of AI include: ▪ artificial intelligence for diagnosis, treatment planning and patient care ▪ machine learning for prediction, disease detection and personalizing treatment plans ▪ deep learning for image recognition	• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Healthcare providers ○ Physicians • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs ○ Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Health outcomes

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
	▪ natural language processing to analyze clinical notes and outcomes ▪ generative AI to create educational materials or treatment plans ▪ large language models for literature reviews ▪ computer vision for analyzing medical imaging	
Manitoba	• The 2024 report from the Joint Task Force to Reduce Administrative Burden for Physicians in Manitoba recommends using AI to simplify scheduling and documentation tasks o The report provides no specific examples, but it can be inferred that strategies to facilitate completion of medical forms and easily update electronic record systems be implemented • The College of Physicians and Surgeons of Manitoba completed a report providing suggestions for the responsible use of artificial intelligence o Potential applications of GenAI include generating diagnoses, prescriptions, treatment plans and educational materials; however, there is limited evidence supporting its use o Physicians must be responsible for their use of AI and any harms of benefits its use may have o When using tools physicians should ensure they are up to date, valid, transparent and explainable to patients along with any risks • In 2024, the College of Physiotherapists of Manitoba created a guideline for the use of AI in clinical practice o Physiotherapists should use AI responsibly, ensure informed consent, verify the accuracy of information if used for documentation, and verify any potential biases associated with AI o The report also states that GenAI may support shared decision-making and physiotherapists should be open to discussing patient's concerns or strategies learned through use of GenAI • Doctors Manitoba describes an overview of responsibilities for AI Scribes: o physicians are responsible to secure patient consent, maintain accurate records and mitigate bias o physicians can utilize the list of programs deemed secure by the Canadian Health Infoway o in a survey conducted by the organization, 60% were interested in trying AI but only 6% used it; of that 6% they reported a time savings of 30–60 minutes per day o considerations for utilizing AI scribe include adequate technology (e.g., computer and microphone), reliable internet connection, and adequate workflow preparation o Canada Health Info way has a maximum of 400 free licenses for Manitoba primary care clinicians to test AI scribes • The College of Registered Nurses of Manitoba released a support document for mitigating risks of AI use o AI may support nurses by facilitating meeting documentation, summarizing data to facilitate review, diagnosis, and treatment planning, and supporting educating clients o AI may not be reliable due to errors, possible bias, overconfidence, hallucinating/falsifying results, and training using misinformation o human oversight should always be used to confirm accuracy of materials developed using AI o critical thinking and application of risks of bias should be accounted for o train AI using diverse sources o store data on secure platforms o complete a privacy impact assessment o ensure informed consent of clients o be familiar with local AI laws and expectations o stay informed on updates on AI use and development o develop plan to manage potential breaches in data o reduce overreliance on data	• Types of AI tools for reducing administrative burden o Scribing and documentation tools • Sectors o Rehabilitation care • Healthcare providers o Physicians o Allied health professionals • Outcomes o Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs o Other equity-centred quadruple aim metrics ▪ Patient experience ▪ Health outcomes

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
	○ conduct regular professional development • The College of Physiotherapists of Manitoba developed a guideline for using AI in clinical practice ○ AI may support physiotherapy practice by automating patient records, assisting with data synthesis for treatment planning, diagnostic accuracy, and patient monitoring, streamlining scheduling services, and supporting research initiatives ○ Risks associated with AI include biases in AI, privacy breaches, lack of patient trust with AI, AI hallucinations, and overreliance on AI ○ Physiotherapists are expected to do the following when using AI: ▪ have a basic understanding of AI ▪ select appropriate tools aligned with patient needs ▪ critically evaluate AI insights ▪ ensure patient autonomy and consent by disclosing the use of AI, capabilities and limitations, and safeguards for reliability and validity ▪ ensure that clinical decisions are not biased ▪ ensure compliancy with employer policies	
Ontario	• Ontario has piloted AI scribe tools to address administrative burdens faced by front-line healthcare providers • These tools, powered by AI, transcribe patient-provider conversations into clinical documentation in real time, aiming to reduce the time spent on paperwork and electronic health record entries ○ Clinicians reported a 70% reduction in documentation time, saving up to four hours per week ○ Over 80% of providers expressed interest in continuing to use AI scribes beyond the pilot ○ The tool enabled 79% of participants to spend more time on patient care, while 76% experienced a reduction in cognitive burden during clinical encounters ○ Overall, early evidence from Ontario suggests that AI scribes can improve clinician well-being and efficiency without compromising quality of care • OntarioMD has launched the AI Knowledge Zone to support clinicians in adopting and utilizing AI tools, particularly AI scribes, within primary care settings ○ This initiative addresses common concerns among healthcare providers, such as data privacy, security and the reliability of AI applications ○ The AI Knowledge Zone offers resources focused on privacy and legal requirements, aiming to guide clinicians through the integration of AI into their practices ○ As more AI tools become available, OntarioMD plans to expand the content of the AI Knowledge Zone to encompass a broader range of applications in primary care • At Unity Health Toronto, AI tools have been developed to streamline administrative tasks ○ The Emergency Department Nurse Assignment Tool reduced the time to assign up to 27 nurses per shift from three hours to 15 minutes or less ○ This optimization also decreased the repeat rate of nurses being assigned to the same role in consecutive shifts from over 20% to 5%, promoting varied experiences and job satisfaction ○ Additionally, predictive models assist in planning interprofessional resource teams by forecasting staff absences, aiding in efficient workforce management • St. Michael's Hospital in Toronto utilizes CHARTWatch Surgical, an AI tool that monitors patient data in real time to predict deterioration risks ○ Since its implementation in October 2020, the hospital observed a 26% reduction in unexpected deaths in units where the tool is active	• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Scribing and documentation tools ○ Communication supports ○ Patient-discharge supports • Sectors ○ Primary care ○ Specialty care ▪ Emergency care • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs • Facilitators of adoption and scaling up ○ System-level facilitators

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
	○ The system provides hourly assessments, enabling timely interventions and informed discussions about patient care preferences	
Quebec	• In May 2024, the Quebec government announced an $8 million investment in IVADO (Institute for Data Valorization) to strengthen the province's AI ecosystem ○ This funding, extending through 2026, aims to enhance collaborative research and innovation programs, facilitating the adoption of AI technologies by Quebec companies and organizations ○ Led by Université de Montréal, in partnership with Polytechnique Montréal, HEC Montréal, Université Laval and McGill University, IVADO serves as a bridge between academic research and industry application ○ The initiative is expected to promote the commercialization of AI innovations, support digital transformation across sectors, and contribute to the creation of highly qualified jobs • The Centre hospitalier de l'Université de Montréal (CHUM) has implemented AI tools for predictive analytics, assisting in early detection of patient deterioration and optimizing resource allocation ○ By leveraging AI, CHUM developed a scheduling model that reduced the time required to organize radiologist appointments by half, freeing up 11 additional hours of treatment per day without increasing staff ○ Applying AI to predict patient treatment times, CHUM achieved a 5% increase in efficiency in its infusion clinic, equating to 11 extra hours of treatment capacity daily ○ Collaborating with AssistIQ, CHUM implemented AIQ Capture to track the usage of single-use surgical instruments in real-time, leading to a 24.5% cost reduction and potential annual savings between $4.5 million and $8.4 million • The Government of Quebec, through Santé Québec, announced plans in August 2025 to begin piloting AI-powered medical-note transcription and summarization tools starting in 2026 ○ The initiative is part of the province's broader digital-transformation agenda aimed at alleviating administrative burden in primary care ○ The upcoming pilot will test speech-to-text and automated summary technologies that generate clinical documentation directly from patient-physician conversations, allowing clinicians to validate and finalize notes within seconds rather than typing them manually ○ Plume IA, a Montreal-based health-tech company specializing in privacy-compliant AI transcription, was cited among the vendors preparing for certification under Santé Québec's guidelines; these certifications will require that all participating vendors comply with provincial data protection, cybersecurity and interoperability standards before any deployment in family-medicine groups (GMFs) ○ While implementation is not expected until 2026, this announcement signals a key transition from exploratory research to applied system-level pilots ○ This also positions Quebec as one of the first Canadian provinces to introduce a government-led AI documentation program	• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Scribing and documentation tools ○ Patient-discharge supports • Outcomes ○ Provider experiences ▪ Time available for patient care • Accuracy of outputs • Sectors ○ Primary care ○ Specialty care ▪ Emergency care ▪ Outpatient specialty care • Facilitators of adoption and scaling up ○ System-level facilitators
New Brunswick	• Researchers at the University of New Brunswick have developed a groundbreaking AI system known as "curious AI," which combines curiosity-driven exploration with efficient decision-making ○ This approach enables the AI to actively seek out new information while performing tasks, allowing it to refine strategies in real-time and adapt to unpredictable situations ○ The AI system employs a method called dual iterative linear quadratic Gaussian (iLQG) control, enhancing decision-making in uncertain environments	• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools ○ Communication supports • Settings ○ Academic- or research-oriented care settings (vs. community settings)

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
	○ Unlike traditional adaptive control systems that react based on past data, this AI proactively tests its assumptions, similar to a driver cautiously tapping brakes to assess icy road conditions ○ This proactive learning allows the AI to make better-informed decisions, especially when stakes are high ○ In practical applications, the AI demonstrated its effectiveness by outperforming traditional models in managing COVID-19 policies, balancing health and economic risks more efficiently ○ Notably, the system operates with minimal computing power, having been run on a decade-old laptop, making it accessible for various applications • The Vitalité Health Network has begun implementing AutoScribe, an AI-enabled transcription tool, across its primary care sites ○ Approximately 130 family physicians and nurse practitioners are participating in the rollout ○ The tool generates structured clinical notes in real time, directly integrated into the electronic medical record (EMR), allowing clinicians to review and validate the output before finalizing documentation ○ This implementation forms part of the broader Canada Health Infoway AI Scribe Program, which offers licensed access to vetted AI documentation platforms to support time savings and reduced administrative workload ○ Early reports from Vitalité indicate that the initiative is intended to decrease documentation time and cognitive load for clinicians, enabling greater focus on patient care and reduced duplication of data entry ○ The approach aligns with federal priorities on digital health transformation and clinician well-being, emphasizing standardized deployment across participating jurisdictions • The New Brunswick Medical Society (NBMS) has released an AI Scribe Toolkit outlining best practices for local adoption ○ While this guidance covers privacy, security, and workflow integration, no province-specific regulatory standards have yet been issued by the College of Physicians and Surgeons of New Brunswick (CPSNB) regarding informed consent, medico-legal responsibility or documentation authorship ○ As a result, early adopters are encouraged to treat these implementations as pilot-stage deployments while maintaining direct accountability for record accuracy and patient communication	• Outcomes ○ Provider experiences • Accuracy of outputs • Facilitators of adoption and scaling up ○ System-level facilitators
Nova Scotia	• Nova Scotia Health is collaborating with Google Cloud to implement AI healthcare tools by fall 2025 aimed at reducing physicians' administrative workload, including: ○ a natural-language search function that enables clinicians to quickly find relevant details in a patient's health record, saving time in navigating files and enhancing decision-making ○ AI support for radiologists by generating preliminary findings for chest X-rays to add efficiency • As of 2024, the Government of Nova Scotia plans to invest $42 million in its partnership with Google Cloud over five years • The College of Physicians & Surgeons of Nova Scotia acknowledges and supports the use of AI scribe technology in clinical care due in part to its potential to reduce administrative burden on physicians, and sets out standards and guidelines governing its use • Doctors Nova Scotia, the Department of Health and Wellness, and Nova Scotia Health are collaborating to pilot AI scribe technology • Nova Scotia Health is partnering with Canada Health Infoway to pilot Mika AI Scribe (by Mikata Health) ○ A one-year AI Scribe license is available with limited availability and at no cost to eligible providers, funded by Canada Health Infoway and managed by the Nova Scotia Department of Health and Wellness ○ Eligibility criteria include: ▪ a practicing primary care physician or nurse practitioner in good standing with the relevant regulatory college ▪ active use of EMR ▪ willingness to complete pre- and post-implementation evaluations, attend required training to receive AI Scribe licence, and use the AI Scribe a minimum of 10 times each month	• Types of AI tools for reducing administrative burden ○ Patient scheduling and triage support tools ○ Scribing and documentation tools • Sectors ○ Primary care • Healthcare providers ○ Physicians ▪ Generalists ○ Nurses • Facilitators of adoption and scaling up ○ System-level facilitators ○ Provider-level facilitators

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
	○ A video demonstrating how the AI Scribe may be integrated with Nova Scotia EMRs is available	
Prince Edward Island (P.E.I.)	• The Digital Health Strategy 2024–2029 developed by the Department of Health and Wellness and Health Prince Edward Island defines a strategic goal to "enhance the use of digital health tools," which is in part actioned by evaluating opportunities for the use of machine learning and/or AI to improve administrative efficiency and care quality • In Health Prince Edward Island's call for innovation posting seeking solutions from companies to improve documentation efficiency in patient interactions – with the goal of easing administrative burdens on healthcare providers and improving care experience – it looks for a number of essential outcomes relating to transcription accuracy, user experience, documentation time required, documentation quality, integration with existing electronic medical records system, and data security • Health PEI and the Department of Health and Wellness are adopting a single-solution approach to AI Scribe implementation, which is to be piloted with select eligible primary care providers to inform broader roll-out • The 2025–2026 Business Plan of the Department of Health and Wellness and of Health PEI describe the launch of the AI Scribe Pilot Project to reduce administrative burden experienced by primary care physicians, though further information is not detailed • The College of Physicians and Surgeons of Prince Edward Island released its policy on Artificial Intelligence (AI) Scribes in Clinical Care in October 2025; it outlines provider responsibilities for AI Scribe use, including obtaining consent, ensuring the accuracy of generated documentation, and protecting patient privacy	• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools • Sectors ○ Primary care • Healthcare providers ○ Physicians ▪ Generalists • Facilitators of adoption and scaling up ○ System-level facilitators
Newfoundland and Labrador (NL)	• The Health Accord NL report outlines a 10-year plan to transform the healthcare system, emphasizing the adoption of digital technologies to improve efficiency and patient care; the focus on digital transformation suggests adopting and leveraging virtual care technologies to streamline administrative processes and support healthcare providers ○ Newfoundland and Labrador's HealthTech and BioTech Ecosystem 2024–2026 Action Plan involves investing in new start-up firms to improve delivery and management of healthcare services • The Newfoundland and Labrador Medical Association (NLMA) provides information on AI scribes, digital tools designed to automate the documentation of patient encounters; these tools can record, transcribe and summarize real-time conversations into structured notes, such as SOAP notes, and can assist in preparing referral letters and patient instructions ○ Physicians are encouraged to consult guidelines from the College of Physicians and Surgeons of Newfoundland and Labrador (CPSNL) and the Canadian Medical Protective Association (CMPA) regarding privacy, security, and best practices when implementing AI scribes in their practice • The Government of Newfoundland and Labrador is providing $553,693 to SiftMed through the Business Growth Program to support a 13-month R&D project focused on enhancing its AI-driven platform that sorts medical documents and predicts claim complexities, improving risk assessment and triage ○ In July 2025, the Government of Newfoundland and Labrador invested $652,295 in SiftMed Inc. to advance its AI-powered platform that automates the organization and summarization of complex medical records, improving efficiency for healthcare and insurance professionals • SiftMed, based in St. John's, is also receiving up to $400,000 in federal support from The National Research Council of Canada Industrial Research Assistance Program (NRC IRAP) to further develop its medical AI technology, with provincial funding helping create six new technical positions ○ The company's AI tools are aimed at streamlining workflows for legal, insurance and medical professionals • NL Health Services has established a "Living Lab" innovation environment in November 2025 to pilot and scale healthcare technologies, including AI, across acute, community and long-term care ○ Through partnerships with vendors such as Amazon Web Services, Deloitte and Mariner Innovations, Living Labs will support projects in digital health, software development and data analytics	• Types of AI tools for reducing administrative burden ○ Scribing and documentation tools ○ Communication supports • Healthcare providers ○ Physicians • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
	• This structure positions NL Health Services to co-develop AI applications that improve patient flow, access to care and administrative efficiency by integrating intelligent systems into real-world healthcare operations across Newfoundland and Labrador	
Yukon	• No tools identified	

Northwest Territories (NWT)	• As part of the Department of Health and Social Service (DHSS)'s medical equipment evergreening program, hospitals in Stanton, Inuvik and Hay River now use Fujifilm endoscopy systems equipped with CADEYE AI software, which supports front-line providers by automating polyp detection and characterization
	  ○ This AI integration improves efficiency and accuracy in colonoscopies, allowing clinicians to focus more on patient care rather than manual interpretation and administrative tasks related to image review and reporting
	  ○ By minimizing equipment downtime with on-site loaner scopes and improving workflow with user-friendly, high-resolution tools, the upgrade streamlines clinical operations and reduces administrative delays in cancer screening services
	• The 2021 Proposed Amendments to the Northwest Territories Nursing Profession Act recommend expanding the scope of Registered Psychiatric Nurses in the NWT, including prescribing and test-ordering within their mental health and addictions role, along with consensus that the Nursing Regulation in Northwest Territories and Nunavut should have bylaw-making authority over telehealth and virtual care to keep pace with evolving technologies like AI
	• In the NWT legislature in May 2025, government statements confirmed that they are leading a practitioner-driven innovation to propose solutions to exploring AI-powered tools, e-consult options and expanded virtual care
	• The 2023–2026 bilateral health agreement between Canada and the NWT includes digital tools and health data infrastructure (interoperability) as a key shared priority; this creates the policy/funding context for AI and administrative automation
		• Types of AI tools for reducing administrative burden
		  ○ Communication supports
		• Outcomes
		  ○ Provider experiences
		  ▪ Time available for patient care
		• Accuracy of outputs
		  ○ Other equity-centred quadruple aim metrics
		  ▪ Health outcomes
		• Healthcare providers
		  ○ Nurses

Nunavut	• No tools identified	

Appendix 5: Detailed findings from a jurisdictional scan of international experiences with AI tools for reducing administrative burden among front-line healthcare providers

Jurisdiction	Key findings	Component(s) of the organizing framework addressed

Australia	• The Australian Health Practitioner Regulation Agency released a statement on meeting professional organizations while using artificial intelligence
	  ○ Possible benefits include improved diagnostic times, care and patient satisfaction
	  ○ Healthcare professionals must remain accountable and verify the accuracy of records, understand potential risks to privacy, and remain transparent on use
	• The Australian Government Department of Health and Aged Care released an artificial intelligence (AI) transparency statement
	  ○ The department uses AI to automate activities to make tasks more efficient
	  ○ Possible domains of AI use include compliance and fraud detection and service delivery
	  ○ The department does not use AI for decision-making
	  ○ The department mandates that the use of AI must be verified for accuracy by a human
	• The New South Wales Agency for Clinical Innovation has a living document for AI use
	  ○ Automate routine and indirect tasks such as clinical documentation
	  ▪ This has been found to improve workflow, facilitate appointment scheduling and triage, ensure resource allocation and management, reduce burnout, and allow more time with patients
	  ▪ Materials should still be verified for accuracy
	  ○ Reduce errors for prescriptions, drug interactions, infections and other adverse events
	  ○ Quality and process improvement to improve workflow and evaluate clinician skill
	  ○ Evaluate patient reported data
	  ○ Automate patient triage, management of surgical waitlists, predict bed capacity, and monitor discharge goals
	  ○ Suggest improvements in system organization, for example emergency service allocation, predicting patient demand, and predicting staffing needs
	  ○ Automate patient reminders, billing and fraud identification
	• Australia's National Science Agency created a 2024 report on AI trends in healthcare
	  ○ AI can be used at a systems level to identify areas needing improvement, reducing administrative burden, and allowing more time for patient care
	  ○ At a clinician level, AI can allow for more time for patient care, reduce cognitive demand, and streamline diagnostic planning
	  ○ At a patient level, AI can allow for better treatment and more personalized treatment plans, ultimately leading to better experiences and health outcomes
	• In 2023, the Australian Medical Association released a position statement on AI in healthcare
	  ○ Physicians must be transparent on AI use, remain accountable for AI use, ensure privacy, and verify biases that may occur
	  ○ The statement states that AI can assist with diagnosis, treatment recommendations and transitions of care; no specific examples were provided
	• In 2025, the Australian Digital Health Agency released a transparency statement for AI use
	  ○ The Agency uses Microsoft Copilot for internal documentation tasks, data analysis and cyber security monitoring
	  ○ Employees must complete training before using the tool
	• In 2021, the Australian Alliance for Artificial Intelligence in Healthcare released a Roadmap for Artificial Intelligence in Healthcare, providing the following recommendations:
	  ○ developing an ethical framework to support AI in routine practice and improve safety monitoring systems
		• Types of AI tools for reducing administrative burden
		  ○ Patient-scheduling and triage supports
		  ○ Scribing and documentation tools
		  ○ Communication supports
		  ○ Patient-discharge supports
		• Sectors
		  ○ Primary care
		  ○ Specialty care
		  ▪ Emergency care
		  ▪ Outpatient specialty care
		  ▪ Inpatient specialty care
		  ○ Rehabilitation care
		  ○ Long-term care
		• Healthcare providers
		  ○ Physicians
		  ▪ Generalists
		  ▪ Specialists
		  ○ Nurses
		• Settings
		  ○ Rural/remote communities (vs. urban communities)
		• Outcomes
		  ○ Provider experiences
		  ▪ Time spent on administrative tasks (e.g., documentation)
		  ▪ Time available for patient care
		• Accuracy of outputs
		  ○ Other equity-centred quadruple aim metrics
		  ▪ Patient experience
		  ▪ Health outcomes
		  ▪ Costs
		• Barriers to adoption and scaling up
		  ○ System-level barriers

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
	○ healthcare organizations meeting minimum standards for cybersecurity and ensuring privacy ○ allocating funds for exploring use of AI in clinical practice ○ developing curriculum frameworks for healthcare professionals and creating accreditation program for training ○ co-designing AI systems with healthcare professionals and patients • In 2024, the Australian College of Nursing released a statement for the role of AI in nursing practice ○ The statement states that AI can support management of patient data, better monitoring of patient outcomes, and improved communication with healthcare professionals ○ Examples of AI include Clinical Decision Support Systems for providing evidenced-based recommendations, predictive analytics for predicting health outcomes, and telehealth and remote patient monitoring for continuity of care ○ Generative AI can support nursing by enhancing clinical decision support by generating recommendations that must be verified, improving documentation, transcribing writing documents, spell checking, providing personalized healthcare recommendations for chronic conditions, enhancing learning by stimulating learning scenarios, and analyzing trends for delivery ○ Possible challenges include verifying accuracy and reliability, biases in how AI is trained, ethical and legal issues, privacy issues, and difficulty integrating with other systems ○ Nurses must also ensure that AI is meant to support decision-making, not replace it, and they must be transparent in its use • The Royal Australian College of General Practitioners provided a position statement on AI use in primary care in 2025 ○ AI may assist physicians by reducing burden for administrative tasks, filling service gaps in remote areas, reducing risks to patient safety, improving diagnostic accuracy, standardizing care and personalizing treatment ○ Physicians must be aware of risks, including privacy concerns and perpetuation of biases by AI • The University of Melbourne provides a six-week-long online micro-credential course regarding the foundations of AI in healthcare ○ The course teaches how to implement and design AI healthcare solutions and the impact of machine learning on healthcare • The Australian Commission on Safety and Quality in Health Care provides a guideline on AI steps clinicians should consider before using AI: ○ establish transparency and informed consent (AI tool used in delivery of care, benefits, limitations, and risks, and process for safety monitoring) ○ be cognisant of common limitations, risk, and biases of Ai ○ ensure ongoing support for safe use ○ use critical judgment when interpreting results from AI ○ be transparent in AI use ○ ensure continuous monitoring of AI tools • The Royal Australian College of General Practitioners provides a resource to assist general practitioners in deciding on how to best use conversational artificial intelligence ○ Conversational AI helps to answer patient questions, provide treatment recommendations, provide language translation services, guide appropriate resources, support tracking of information, and suggest treatment recommendations ○ Potential issues include bias in AI, hallucinating AI, privacy breaches and workflow issues ○ General practitioners are responsible for ensuring accurate information and compliance of services with AI tools	○ Organizational-level barriers ○ Provider-level barriers ○ Patient-level barriers • Facilitators of adoption and scaling up ○ System-level facilitators ○ Organizational-level facilitators ○ Provider-level facilitators ○ Patient-level facilitators
Denmark	• Denmark has established three key centres: Centre for Clinical Robotics (CCR), Centre for Clinical Artificial Intelligence (CAI-X) and Centre for Innovative Medical Technology (CIMT), which focus on launching new innovations/platforms within the Danish health system ○ CAI-X mission is to drive the responsible development and integration of AI in healthcare by fostering interdisciplinary collaboration, aligning solutions with real clinical needs	• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports

Jurisdiction	Key findings	Component(s) of the organizing framework addressed
	○ CAI-X has active financial support from the Independent Research Fund Denmark (DFF), Novo Nordisk Foundation, EU funding programmes such as a Horizon Europe, and other regional initiatives • AI technology helps reduce administrative workload by automating tasks such as appointment scheduling, medical record management and billing, allowing healthcare providers to concentrate more on patient care; the Danish firm Systematic is at the forefront of these advancements ○ Systematic integrates artificial intelligence into its suite to enhance operational efficiency and decision-making by automating complex tasks such as route planning, anomaly detection, maritime track correlation and object recognition, while also streamlining user workflows through adaptive AI-assisted tools • Denmark views digital health technologies as essential to addressing healthcare system challenges, with evidence showing that mature, user-friendly tools (like telemedicine and digital assistants) can free up staff, enhance care, and shift treatment into patients' homes; national and regional efforts are underway to scale these solutions using data-driven evaluations and proven case studies ○ Teton.ai's AI-powered nurse assistant uses sensor and camera technology to monitor patient movements, prevent falls and automate routine checks and documentation, reducing staff workload by 25% during nights and improving patient safety, with proven results already implemented at North Denmark Regional Hospital • Emergency departments in North Denmark Region have implemented an AI tool to automatically read X-rays and identify fractures, reducing wait times for orthopedic patients by quickly clearing non-fracture cases; since its launch in June 2023, nearly 30,000 scans have been reviewed without missed significant fractures or complaints • On May 2025, the Denmark parliament adopted legislation implementing key provisions of the EU AI Act, establishing national competent authorities for AI oversight and signalling a stronger regulatory framework for AI-deployment (including healthcare) across the country • The newly formed national agency Digital Health Denmark (to be fully operational by 2027) will unify health-IT and data functions across municipalities, regions and state, giving a stronger foundation for AI systems (including administrative automation) to scale in Danish healthcare • According to the publication "AI in Action: Denmark's Role as a Global Leader in Healthcare Innovation," the company Systematic is at the forefront of applying AI for administrative tasks ○ It integrates AI into its platform to automate complex workflows and streamline decision-making, supporting the broader trend of administrative burden reduction in the Danish health sector • A research project titled "Implementing AI in Healthcare" funded by the Independent Research Fund Denmark and running from September 2025–May 2028 is explicitly investigating implementation, scaling and evaluation of AI tools in clinical workflows, including administrative tasks such as document management and decision-support	○ Scribing and documentation tools ○ Communication supports • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care • Accuracy of outputs • Facilitators of adoption and scaling up ○ System-level facilitators
Finland	• The Ministry of Social Affairs and Health released a strategy emphasizing the use of AI and robotics to streamline healthcare services ○ They emphasize developing user-friendly digital tools to empower individuals in managing their health, reducing healthcare professionals' workload by automating routine tasks, and reforming legislation to facilitate data sharing and automated decision-making • The Finnish Center for Artificial Intelligence (FCAI), a flagship initiative by Aalto University, the University of Helsinki, and VTT Technical Research Centre of Finland, develops trustworthy, data-efficient, and understandable AI to solve real-world problems, enhance human-AI collaboration, and drive ethical industrial and societal transformation ○ FCAI is investing in the implementation of deep learning for electronic health records to streamline administrative burden and improve medical imaging analysis	• Types of AI tools for reducing administrative burden ○ Patient-scheduling and triage supports ○ Communication supports • Outcomes ○ Provider experiences ▪ Time spent on administrative tasks (e.g., documentation) ▪ Time available for patient care

Jurisdiction	Key findings	Component(s) of the organizing framework addressed

	• Research projects involving organizations like VTT Technical Research Centre of Finland and the University of Eastern Finland are developing AI solutions to reduce nurses' workload; these tools aim to automate tasks such as patient registration and information review, potentially saving more than 30% of nurses' working hours, allowing them to focus more on patient care
	• AI-assisted patient record-keeping was piloted in three Finnish regions in 2024, with ongoing projects in Western Uusimaa and Kanta-Häme now funded by the Ministry of Social Affairs and Health; results from the pilot projects will be published in spring 2025
	  ○ The Ministry of Social Affairs and Health granted 550,000 euros to Western Uusimaa Wellbeing Services County (in Finnish and Swedish) to develop AI-assisted registration
	  ○ It also granted 480,000 euros to Kanta-Häme Wellbeing Services County (in Finnish) for AI-based background and risk data collection and capacity prediction
	• HUS Helsinki University Hospital is pioneering the integration of AI in healthcare by leveraging its medical images archive to develop advanced diagnostic tools, particularly for brain diseases
	  ○ Through collaborations within the CleverHealth Network, HUS combines clinical expertise with technological innovation to create AI algorithms capable of identifying conditions like intracerebral hemorrhages, aiming to enhance diagnostic accuracy and patient care
	• The DigiFinland Oy-led "SOTE AI Ecosystem" released an introductory white paper in August 2025 that includes action recommendations for AI in social and health services
	  ○ The report emphasises that automation of documentation and situational-awareness tasks could lead to significant time savings such as AI-assisted documentation in the well-being services county of Länsi Uusimaa
	• On May 2025 the innovation body Sitra launched a funding call for wellbeing-services counties to trial AI-based proactive methods (including automation of data collection, documentation reduction) with grants up to 200,000 euros per project
	• A recent study (October 2025) found that in Finland's public social and healthcare sector, nearly half of respondents identify financial resources and lack of AI expertise as the greatest barriers to adoption of AI for admin burden reduction
	• On October 2025, Aiforia Technologies Plc (a Finnish AI-pathology company) signed an agreement with Siemens Healthineers Finland to embed AI tools in diagnostic workflows
	• Though this is imaging-centric, it signals administrative workflow streamlining via AI (e.g., pathologist report automation) that may reduce reporting time and documentation load	

Iceland	• The Ministry of Higher Education, Industry and Innovation presents its draft AI Action Plan for 2024–2026
	  ○ The plan promotes an approach to AI development in healthcare diagnostic and administrative usage, emphasizes independent review, and addresses privacy, security and real-world application through detailed standards and practical use cases, with plans for continuous updates
	  ○ On October 2025, the Artificial Intelligence Action Plan 2025–2027 was published, building on the earlier draft; it explicitly identifies the healthcare system as a domain for AI deployment to enhance access, reduce strain on services and streamline operations
	  ○ The updated government plan emphasizes improvements in public services through AI tools that enhance efficiency, transparency and accessibility, which included administrative workflows in healthcare
	• Researchers from the University of Iceland developed an AI system to automate the coding of medical records in Icelandic, aligning with International Classification of Diseases (ICD) standards
	• The Icelandic Health Care Association partnered with tech company Dicino to implement AI in patient interactions
	  ○ A pilot project at Heilsuvera used AI to handle patient chat check-ins by asking symptom and risk-related questions in Icelandic and English, covering over 1,200 medical issues
	  ○ The system successfully reduced workload for healthcare staff, leading to a renewed partnership between Dicino and Capital Area Healthcare to expand telehealth services
		• Types of AI tools for reducing administrative burden
		  ○ Scribing and documentation tools
		  ○ Communication supports
		• Outcomes
		  ○ Provider experiences
		  ▪ Time spent on administrative tasks (e.g., documentation)
		  ▪ Time available for patient care

Jurisdiction	Key findings	Component(s) of the organizing framework addressed

New Zealand	• A survey by the Bank of New Zealand found that two-thirds of private healthcare providers have used or considered using AI, with administrative automation and scribes becoming popular, while clinical imaging tools generally remain in a pilot phase
	  ○ Portal booking, electronic prescriptions, predictive analytics and risk scoring, and clinical decision support were other reported uses of AI
	• New Zealand's Artificial Intelligence and Algorithm Expert Advisory Group provides advice on safe, effective, ethical and legal use of artificial intelligence in the healthcare sector
	  ○ The group helps to assess whether proposed AI tools meet required standards for healthcare delivery, equity, and data sovereignty and consumer rights
	• New Zealand's Health Research Council will invest NZD $5 million in health research focused on the use of AI, including applications of AI designed to reduce administrative burden
	  ○ It published guidelines in 2025 for applicants of AI in healthcare funding, which provide opportunities to propose AI-based solutions to improve administrative burden in the healthcare system
	• New Zealand's Ministry of Health, in partnership with Health New Zealand, other government agencies, and external advisory groups, are working to guide the use of AI and genomics in New Zealand's health system
	  ○ This integration is expected to, among other benefits, lead to the automation of certain aspects of complex data interpretation, allowing specialists to spend less time on analysis and documentation tasks
	• The Office of the Prime Minister's Chief Science Advisor Kaitohutohu Mātanga Pūtaiao Matua ki te Pirimia published a report in December 2023 on capturing the benefits of AI in healthcare, including to achieve better outcomes in administrative areas
	  ○ 'Low-hanging fruit' identified included using AI to automate scheduling for visits, procedures and availability of physical space, as well as typing up notes and routine communications with patients
	  ○ Computer vision, referring to machine perception of images, was also identified as a field that can augment not only clinical judgment, but also help specialists more efficiently write notes and document tests to relieve the time burden associated with these activities
	  ○ The report highlights that AI technologies can be prone to reflect and perpetuate human bias and discrimination, making mitigation approaches such as monitoring for signs of bias important so that adopting AI is done in an equity-sensitive manner
	• A report by AI Forum New Zealand highlighted that AI-powered assistants for health providers can take over burdensome routine administrative tasks like scheduling, documentation and filling forms, while robotic process automation can be used to manage repetitive back-office tasks related to billing, claims processing, and patient registration
	  ○ The report also details how AI can more efficiently combine diverse datasets from across the system to help reduce manual data entry tasks to prevent data duplication, inconsistency, and fragmentation
	  ○ AI can also help to forecast demand and prioritize resource use and improve support evidence-based decision-making by health administrators and policymakers by streamlining data analysis
		• Types of AI tools for reducing administrative burden
		  ○ Patient-scheduling and triage supports
		  ○ Scribing and documentation tools
		  ○ Communication supports
		• Outcomes
		  ○ Provider experiences
		  ▪ Time spent on administrative tasks (e.g., documentation)
		  ▪ Time available for patient care
		• Accuracy of outputs
		• Facilitators of adoption and scaling up
		  ○ System-level facilitators

Norway	• An OECD report The Digital Transformation of Norway's Public Sector highlights the use of AI-enabled tools to ensure that health and other public sector data is supplied "Once-Only" and subsequently shared across digital services to be reused, thereby reducing administrative burden
	• A strategy document by Implement Consulting Group called "The AI Innovation Opportunity for eGovernment in Norway" analyzed how AI can reduce administrative burden in public administration (including healthcare), noting that AI can be used to simplify eligibility checks, streamline forms and automate repetitive tasks to free up time
	• Norway implemented a coordinated, cross-agency initiative that is led by the Directorate of Health that aims to strategically guide the safe and effective implementation of AI into the health system, including those that might work to reduce administrative burden
	  ○ It is supported by an AI Advisory Board and aims to be integrated within national eHealth strategies
		• Types of AI tools for reducing administrative burden
		  ○ Patient-scheduling and triage supports
		  ○ Scribing and documentation tools
		  ○ Communication supports
		• Sectors
		  ○ Specialty care
		  ○ Public health

Jurisdiction	Key findings	Component(s) of the organizing framework addressed

	• The Norwegian Centre for E-health Research published a report in January 2022 on the implementation of AI in Norwegian healthcare, and highlighted a framework for implementing AI in healthcare that emphasizes trustworthiness, clinical relevance and collaborative governance
	  ○ The framework includes components like workflow integration and cross-sector cooperation that are likely to streamline processes to reduce administrative burdens
	  ○ The successful implementation of AI in healthcare is hindered by limited human and financial resources, as well as limited cross-disciplinary expertise and fragmented data governance
	• Norway's National Health and Hospital Plan for 2020–2023 includes plans to integrate AI into the health system to 1) enable faster more accurate diagnosis and better treatment, 2) automate medical analyses, 3) provide AI tools to support patients and providers (e.g., patient scheduling and triaging) and 4) enhance data sharing to support personalized medicine
	  ○ Overall, these approaches can expect to reduce administrative burden by freeing up specialists' time by reducing diagnostic/medical analysis time and better coordinating scheduling, triaging and information sharing across the system
	• DIPS AS supplies eHealth systems to Norwegian hospitals, incorporating AI administrative features to streamline scheduling and communication
		• Barriers to adoption and scaling up
		  ○ System-level barriers
		  ○ Provider-level barriers

Sweden	• AI Sweden's mapping "Vårdkartan" identified 179 AI initiatives in healthcare, with the majority of these in diagnostics and management and administration, highlighting the recent push among health providers to leverage AI to reduce administrative burden
	  ○ Initiatives mitigating administrative burden included automated documentation and text-based tasks, scheduling, patient flow and resource optimization, triaging and administrative decision support, data integration, and cross-sector and shared administrative support tools
	• AI Sweden, the Swedish national centre for applied artificial intelligence, published a white paper in December 2024 on the integration and return on investment of AI technology in healthcare, highlighting that AI has the potential to help automate routine tasks, improve operational efficiencies and optimize resource planning and allocation
	  ○ Obstacles highlighted by stakeholders include concerns about data privacy and storage, and the ethical assessments needed to evaluate the level of risk they pose take considerable time
	• AI Sweden, in partnership with Unity Health Toronto, have committed SEK 4,351,390 (approx. $620,000 CAD) to better manage missed patient appointments through AI-driven collaboration platforms for healthcare leaders and data scientists that improve diagnostics, treatment and resource utilization
	  ○ Some of the applications of AI include scheduling, integrating diverse datasets and other health information, and facilitating resource allocation and planning
	  ○ The project is expected to lead to greater implementation of AI, with long-term outcomes aiming to improve patient care, decrease administrative burden for healthcare staff, and use resources more efficiently
	• Doktor.se is a digital healthcare platform based in Sweden with AI triage, covering 26 health centres
	• Cambio COSMIC healthcare information system uses AI to update providers with a patient journal that has information about bookings, test results, drugs, treatments and more, across organizations
		• Types of AI tools for reducing administrative burden
		  ○ Patient-scheduling and triage supports
		  ○ Scribing and documentation tools
		  ○ Communication supports
		• Sectors
		  ○ Primary care
		  ○ Specialty care
		• Outcomes
		  ○ Provider experiences
		  ▪ Time spent on administrative tasks (e.g., documentation)
		  ▪ Time available for patient care
		• Barriers to adoption and scaling up
		  ○ System-level barriers

United Kingdom (U.K.)	• The U.K.'s AI Exemplars programme is piloting AI-assisted tools to help doctors draft discharge documents faster by extracting information from medical records using a large language model, allowing doctors to more efficiently discharge patients to reduce waiting time while mitigating administrative burden
	• The U.K. piloted Microsoft 365 Copilot across 90 National Health Service (NHS) organizations and found that NHS staff saved on average 43 minutes per staff per day or more
	  ○ Full rollout is expected to save up to 400,000 hours a month across all NHS staff
		• Types of AI tools for reducing administrative burden
		  ○ Patient-scheduling and triage supports
		  ○ Scribing and documentation tools
		  ○ Communication supports
		  ○ Patient-discharge supports

Jurisdiction	Key findings	Component(s) of the organizing framework addressed

	• NHS England and the Department of Health and Social Care's guidance on the use of AI-enabled ambient scribing products in health and care settings offers high-level information to help adopt ambient scribing products that use generative artificial intelligence to help reduce administrative burden by making clinical or patient documentation workflows more efficient
	• An evaluation of Ambient Voice Technology used in combination with AI models such as large language models to create automatic transcriptions to generate structured clinical notes and letters found that direct care time increased from 70% to 86.5%, while documentation time was reduced by 51.7% or roughly 47 minutes per shift
	  ○ In emergency department settings, a 13.4% increase in patient capacity per shift was observed
	• A suite of 13 Phase 4 evaluations of AI technologies funded by the AI in Health and Care Award found that while AI tools can improve efficiency, workflow integration and satisfaction among staff, their overall success relies on organizational readiness, stakeholder engagement and realistic planning for scaling up and sustainability
	• Examples include imaging analysis tools, risk prediction algorithms, triage systems, patient flow prediction, bed management and scheduling, demand forecasting, ambient voice technologies and natural language processing tools, and conversational and assistive AI (e.g., chatbots or digital assistants)
		• Sectors
		  ○ Primary care
		  ○ Specialty care
		  ▪ Emergency care
		  ▪ Outpatient specialty care
		  ▪ Inpatient specialty care
		• Healthcare providers
		  ○ Physicians
		  ▪ Generalists
		  ▪ Specialists
		  ○ Nurses
		  ○ Allied health professionals
		• Settings
		  ○ Academic- or research-oriented care settings (vs. community settings)
		• Outcomes
		  ○ Provider experiences
		  ▪ Time spent on administrative tasks (e.g., documentation)
		  ▪ Time available for patient care
		  ▪ Physician wellness or retention
		• Accuracy of outputs
		  ○ Other equity-centred quadruple aim metrics
		  ▪ Costs
		• Barriers to adoption and scaling up
		  ○ System-level barriers
		  ○ Organizational-level barriers
		  ○ Provider-level barriers
		• Facilitators of adoption and scaling up
		  ○ System-level facilitators
		  ○ Organizational-level facilitators
		  ○ Provider-level facilitators

United States (U.S.)	• Centers for Medicare and Medicaid Services (CMS) launched the Wasteful and Inappropriate Service Reduction (WISeR) model that uses AI-enabled review technologies to speed up prior authorization for certain services and reduce payer-provider paperwork
	  ○ CMS has implemented an interoperability and prior authorization final rule to digitize/automate prior authorization and data exchange, which is necessary for AI/automation to be used
		• Types of AI tools for reducing administrative burden
		  ○ Scribing and documentation tools
		  ○ Communication supports
		  ○ Prior authorization supports

Jurisdiction	Key findings	Component(s) of the organizing framework addressed

	• The Department of Veterans Affairs (VA) is using generative AI assistants to reduce administrative overload using tools like document automation and ambient scribing, and has shown around two to three hours saved per week for each employee using VA-wide generative assistant and eight hours a week per employees using AI-assisted software
	• The Agency for Healthcare Research and Quality is funding research on AI ambient scribe tools in primary care to reduce documentation burden among staff
		• Sectors
		  ○ Primary care
		  ○ Specialty care
		  ▪ Outpatient specialty care
		  ▪ Inpatient specialty care
		• Healthcare providers
		  ○ Physicians
		  ▪ Generalists
		  ▪ Specialists
		  ○ Nurses
		  ○ Pharmacists
		  ○ Allied health professionals
		• Settings
		  ○ Academic- or research-oriented care settings (vs. community settings)
		• Outcomes
		  ○ Provider experiences
		  ▪ Time spent on administrative tasks (e.g., documentation)
		  ▪ Time available for patient care
		• Accuracy of outputs
		  ○ Other equity-centred quadruple aim metrics
		  ▪ Costs
		• Facilitators of adoption and scaling up
		  ○ System-level facilitators
		  ○ Organizational-level facilitators
		  ○ Provider-level facilitators

Appendix 6: Documents excluded at the final stage of reviewing

Reason for exclusion	Hyperlinked title
Wrong intervention	Significant and distinctive n-grams in oncology notes: A text-mining method to analyze the effect of OpenNotes on clinical documentation
	Scribe smarter, not harder: how artificial intelligence scribes stack up against human clinicians
	Computer-assisted medical history taking prior to patient consultation in the outpatient care setting: A prospective pilot project
	Comparison of clinical note quality between an automated digital intake tool and the standard note in the emergency department
	Workload reduction through automated documentation in intensive and intermediate care – a monocentric observational study
	Contextual computing: A Bluetooth based approach for tracking healthcare providers in the emergency room
	Enhancing clinical practice: The Endoscore app for automated surgical data capture and endometriosis scoring
	AI and healthcare: Surveying patient perspectives on artificial intelligence in neurosurgery
	An EHR-based method to structure, standardize, and automate clinical documentation tasks for pharmacists to generate extractable outcomes
	Practitioner perspectives on the uses of generative AI chatbots in mental health care: Mixed methods study
	Highly automated documentation for mobile medical services
	Improving clinical practice using clinical decision support systems: A systematic review of trials to identify features critical to success
	CHAT-RT study: ChatGPT in radiation oncology – a survey on usage, perception, and impact among DEGRO members
	Defining, capturing, and validating pharmacists' patient profile reviews in the electronic medical record
	Safety and efficacy of digital check-in and triage kiosks in emergency departments: Systematic review
	The evaluation of a deformable image registration segmentation technique for semi-automating internal target volume (ITV) production from 4DCT images of lung stereotactic body radiotherapy (SBRT) patients
	Design and implementation of an electronic point-of-contact oncology clinical record
	Efficiency of automation and electronic health records in optometric practice
	Artificial intelligence use in daily and professional life among pediatric surgeons in India: A roadmap for adoption based on online survey results
	Prospective evaluation of AI-based BiCycle autoplanning for advanced cervical cancer brachytherapy
Wrong setting	Using large language models for safety-related table summarization in clinical study reports
	Systematic literature review on the application of explainable artificial intelligence in palliative care studies
	Leveraging generative AI Tools to support the development of digital solutions in health care research: Case study
Modelling studies	Creating perinatal nursing care plans using ChatGPT: A pathway to improve nursing care plans and reduce documentation burden
	Applying queueing theory to evaluate wait-time-savings of triage algorithms
	Usability test for a smart glass–based application to support nurses' hospital admission tasks
	A patient-centered digital scribe for automatic medical documentation
	Performance comparison of junior residents and ChatGPT in the Objective Structured Clinical Examination (OSCE) for medical history taking and documentation of medical records: Development and usability study
Wrong outcomes	Deep learning k-space-to-image reconstruction facilitates high spatial resolution and scan time reduction in diffusion-weighted imaging breast MRI
	Evaluation by dental professionals of an artificial intelligence-based application to measure alveolar bone loss
	Machine learning for benchmarking critical care outcomes
	Assisting nurses in care documentation: From automated sentence classification to coherent document structures with subject headings
	When precision meets penmanship: ChatGPT and surgery documentation
	Evaluating the efficacy of large language models in generating medical documentation: A comparative study of ChatGPT-4, ChatGPT-4o, and Claude
	General practitioners' attitudes toward artificial intelligence–enabled systems: Interview study
	Impact of artificial intelligence on radiology: A EuroAIM survey among members of the European Society of Radiology
	A comprehensive artificial intelligence framework for dental diagnosis and charting

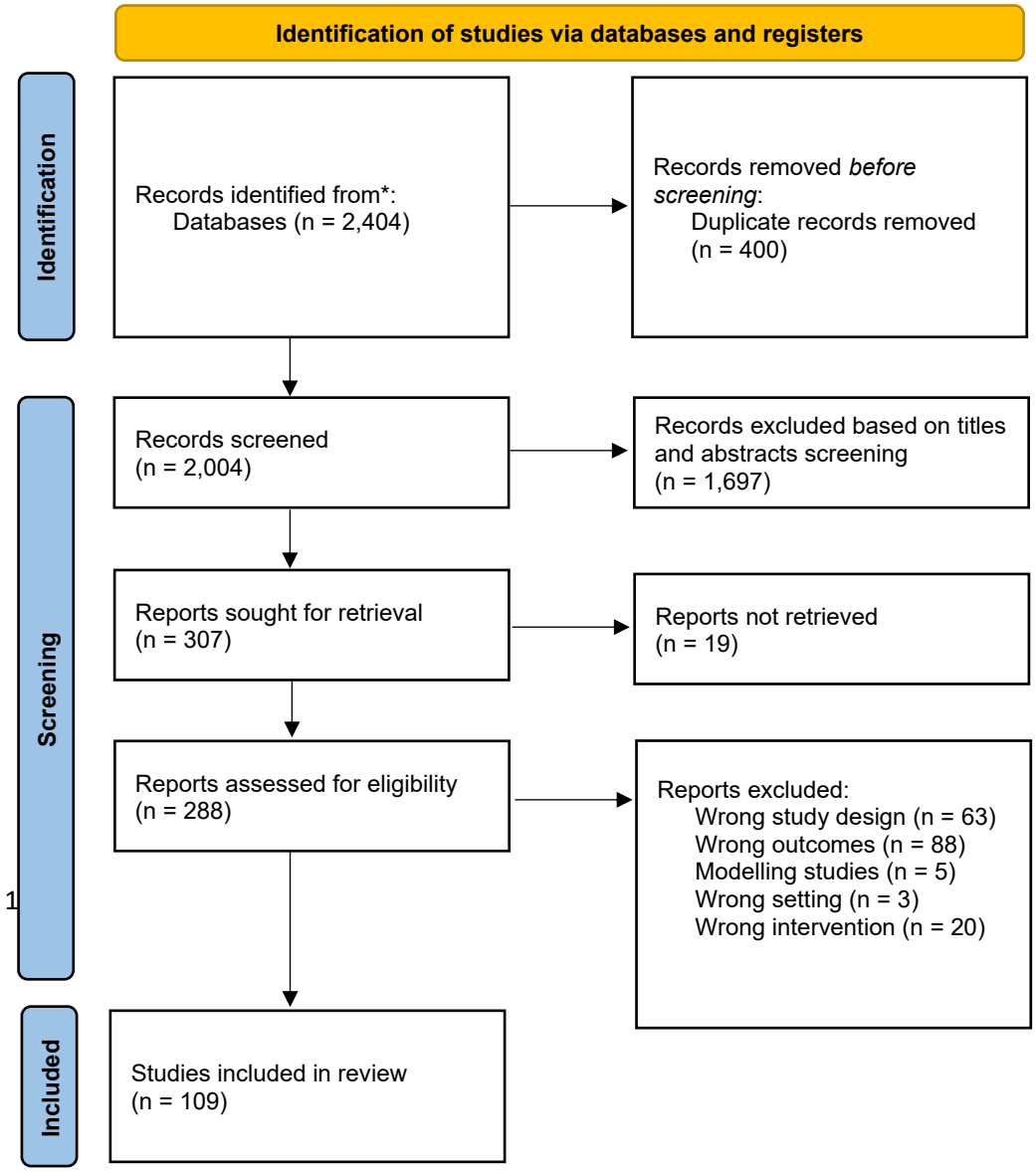
Reason for exclusion	Hyperlinked title
	Development and evaluation of a digital scribe: Conversation summarization pipeline for emergency department counseling sessions towards reducing documentation burden
	Automatic detection of actionable findings and communication mentions in radiology reports using natural language processing
	The perceptions of potential prerequisites for artificial intelligence in Danish general practice: Vignette-based interview study among general practitioners
	Using ChatGPT-4 to Create Structured Medical Notes from Audio Recordings of Physician-Patient Encounters: Comparative Study
	A large language model–based generative natural language processing framework fine-tuned on clinical notes accurately extracts headache frequency from electronic health records
	Evaluation of a digital scribe: Conversation summarization for emergency department consultation calls
	Machine learning methods for identifying critical data elements in nursing documentation
	Natural language processing for literature search in vascular surgery: A pilot study testing an artificial intelligence based application
	Attitude of aspiring orthopaedic surgeons towards artificial intelligence: A multinational cross-sectional survey study
	Intelligent speech technologies for transcription, disease diagnosis, and medical equipment interactive control in smart hospitals: A review
	A comparison of veterans with problematic opioid use identified through natural language processing of clinical notes versus using diagnostic codes
	A novel high accuracy model for automatic surgical workflow recognition using artificial intelligence in laparoscopic totally extraperitoneal inguinal hernia repair (TEP)
	Large language model–based assessment of clinical reasoning documentation in the electronic health record across two institutions: Development and validation study
	AI integration in nephrology: Evaluating ChatGPT for accurate ICD-10 documentation and coding
	Perceptions of data set experts on important characteristics of health data sets ready for machine learning: A qualitative study
	A deep learning framework for automated classification and archiving of orthodontic diagnostic documents
	ChatGPT in surgery: A revolutionary innovation?
	Critical analysis of the AI impact on the patient-physician relationship: A multi-stakeholder qualitative study
	Comparison of the quality of discharge letters written by large language models and junior clinicians: Single-blinded study
	Needs and expectations for artificial intelligence in emergency medicine according to Canadian physicians
	AI in dental radiology-improving the efficiency of reporting with ChatGPT: Comparative study
	Artificial intelligence in headache medicine: Between automation and the doctor-patient relationship. A systematic review
	Evaluating user interactions and adoption patterns of generative AI in health care occupations using Claude: Cross-sectional study
	Real-time automated billing for tobacco treatment: Developing and validating a scalable machine learning approach
	Almanac Copilot: Towards autonomous electronic health record navigation
	Application of generative artificial intelligence for physician and patient oncology letters-AI-oncletters
	Clinical events as building blocks for smart workflows and decision support
	Automated speech recognition for time recording in out-of-hospital emergency medicine-an experimental approach
	The integration of AI into the nursing process: A comparative analysis of NANDA, NOC, and NIC-based care plans
	An institutional large language model for musculoskeletal MRI improves protocol adherence and accuracy
	The registry case finding engine: An automated tool to identify cancer cases from unstructured, free-text pathology reports and clinical notes
	A tablet-based aphasia assessment system “STELA”: Feasibility and validation study
	Automatic detection of endotracheal intubation during the anesthesia procedure
	Exploring nurses’ acceptability and readiness for patient-centered artificial intelligence systems in pressure injury prevention
	Artificial intelligence and carpal tunnel syndrome: A systematic review and contemporary update on imaging techniques
	Toward automated clinical transcriptions
	Using voice to create hospital progress notes: Description of a mobile application and supporting system integrated with a commercial electronic health record
	Evaluating large language model performance in generating clinically relevant intensive care unit discharge summaries
Wrong study design	Potential applications and implications of large language models in primary care
	Large language models and the future of rheumatology: Assessing impact and emerging opportunities

Reason for exclusion	Hyperlinked title
	Should artificial intelligence be used for physician documentation to reduce burnout?
	Electronic health records: A critical appraisal of strengths and limitations
	Applications of artificial intelligence in health care delivery
	Understanding natural language: Potential application of large language models to ophthalmology
	Machine learning tools match physician accuracy in multilingual text annotation
	The promise of AI large language models for epilepsy care
	Navigating the artificial intelligence revolution: The future of general practice in India
	The perceptions of automated artificial intelligence-powered clinical documentation assisted in dentistry
	What complexity science predicts about the potential of artificial intelligence/machine learning to improve primary care
	Large language models in science
	Latest developments of generative artificial intelligence and applications in ophthalmology
	The advance of artificial intelligence in outpatient urology: Current applications and future directions
	Utility of ChatGPT in clinical practice
	Generative artificial intelligence in academic surgery: Ethical implications and transformative potential
	Current applications of artificial intelligence in billing practices and clinical plastic surgery
	Timely and efficient AI insights on EHR: System design
	Unlocking the power of ChatGPT, artificial intelligence, and large language models: Practical suggestions for radiation oncologists
	Using artificial intelligence in electronic health record systems to mitigate physician burnout: A roadmap
	GPT-4 and ophthalmology operative notes
	Can artificial intelligence replace the unique nursing role?
	Transforming healthcare documentation: Harnessing the potential of AI to generate discharge summaries
	The utility of language models in cardiology: A narrative review of the benefits and concerns of ChatGPT-4
	Artificial intelligence: Singularity approaches
	ChatGPT's potential in enhancing physician efficiency: A Japanese case study
	The real ethical issues with AI for clinical psychiatry
	Artificial intelligence, the digital surgeon: Unravelling its emerging footprint in healthcare – The Narrative Review
	Empowering health: Model for sustainable AI implementation
	Artificial intelligence: Its future and impact on acute medicine
	Embracing artificial intelligence: Revolutionizing nursing documentation for a better future
	Applying language technology to nursing documents: Pros and cons with a focus on ethics
	Scribe smarter, not harder: how artificial intelligence scribes stack up against human clinicians
	I'm not burned out. This is how I write notes
	The future of artificial intelligence and artificial intelligence in primary care: Challenges and opportunities
	Artificial intelligence and pain management: cautiously optimistic
	Artificial intelligence–assisted treatment planning in an interdisciplinary rehabilitation in the esthetic zone
	Artificial intelligence and physician burnout: A productivity paradox
	An evaluation framework for ambient digital scribing tools in clinical applications
	Achieving meaningful use and operational efficiency
	Teaching critical thinking in the age of AI: Safeguarding clinical reasoning in healthcare documentation
	Leadership in radiology in the era of technological advancements and artificial intelligence
	Artificial intelligence in Australian dental and general healthcare: A scoping review
	Charting the ethical landscape of generative AI-augmented clinical documentation
	Enhancing structured team communication in acute care settings with ambient AI scribes

Reason for exclusion	Hyperlinked title
	Invisible scribes: Can nurses trust ambient AI for clinical documentation?
	Artificial intelligence tools in dentistry: A systematic review on their application and outcomes
	Current applications of artificial intelligence in dermatology offices and potential ethical landmines
	Partnering with your health system to select and implement clinical decision support for imaging
	N!CA: Towards digitalisation of innovative care processes to unburden and empower nurses
	The current state and future prospects for artificial intelligence in dermatology
	AI-powered insights in pediatric nephrology: Current applications and future opportunities
	Enhancing radiologist productivity with artificial intelligence in magnetic resonance imaging (MRI): A narrative review
	Artificial intelligence and musculoskeletal surgical applications
	Artificial intelligence in pediatric healthcare: Current applications, potential, and implementation considerations
	ChatGPT is not the solution to physicians' documentation burden
	Applying large language models for surgical case length prediction
	ChatGPT-4 generates orthopedic discharge documents faster than humans maintaining comparable quality: A pilot study of 6 cases
	AI in primary care – a general practitioner's bucket list
	[Practical artificial intelligence for urology: Technical principles, current application and future implementation of AI in practice]
	A current review of generative AI in medicine: Core concepts, applications, and current limitations
	Large language models for reducing clinicians' documentation burden
Low relevance (wrong outcomes)	Impact of ChatGPT on teleconsultants in healthcare: Perceptions of healthcare experts in Saudi Arabia
	Perceptions of cardiac surgeons regarding the integration of artificial intelligence in cardiac surgery
	Utilization of ChatGPT-4 in plastic and reconstructive surgery: A narrative review
	ChatGPT's ability to assist with clinical documentation: A randomized controlled trial
	Patient perception of plain-language medical notes generated using artificial intelligence software: Pilot mixed-methods study
	Revolutionizing cardiology with words: Unveiling the impact of large language models in medical science writing
	Ability of machine-learning based clinical decision support system to reduce alert fatigue, wrong-drug errors, and alert users about look alike, sound alike medication
	Physician opinions on artificial intelligence chatbots in dermatology: A national online cross-sectional survey of dermatologists
	Large language model-based chatbot vs surgeon-generated informed consent documentation for common procedures
	Physicians' and patients' expectations from digital agents for consultations: Interview study among physicians and patients
	Viability of open large language models for clinical documentation in German health care: Real-world model evaluation study
	Generative artificial intelligence for chest radiograph interpretation in the emergency department
	The impact of artificial intelligence on radiologists' reading time in bone age radiograph assessment: A preliminary retrospective observational study
	Assessment of real-time natural language processing for improving diagnostic specificity: A prospective, crossover exploratory study
	Using deep learning to safely exclude lesions with only ultrafast breast MRI to shorten acquisition and reading time
	The STREAMLINE pilot study on time reduction and efficiency in AI-mediated logging for improved note-taking experience
	Natural language processing-enabled and conventional data capture methods for input to electronic health records: A comparative usability study
	Artificial intelligence in plastic surgery, where do we stand?
	Deep natural language processing to identify symptom documentation in clinical notes for patients with heart failure undergoing cardiac resynchronization therapy
	An observational study to evaluate the usability and intent to adopt an artificial intelligence-powered medication reconciliation tool
	Supporting primary care through symptom checking artificial intelligence: A study of patient and physician attitudes in Italian general practice
	Using natural language processing techniques to detect adverse events from progress notes due to chemotherapy
	An AI-enabled nursing future with no documentation burden: A vision for a new reality
	The effect of ambient artificial intelligence notes on provider burnout
	Assessing the efficacy and clinical utility of artificial intelligence scribes in urology
	Effect of ambient voice technology, natural language processing, and artificial intelligence on the patient-physician relationship

Reason for exclusion	Hyperlinked title
	Perceptiveness and attitude on the use of artificial intelligence (AI) in dentistry among dentists and non-dentists – a regional survey
	Can large language models generate outpatient clinic letters at first consultation that incorporate complication profiles from UK and USA aesthetic plastic surgery associations?
	Orthopaedic surgeons display a positive outlook towards artificial intelligence: A survey among members of the AGA Society for Arthroscopy and Joint Surgery
	Assessing artificial intelligence-generated responses to urology patient in-basket messages
	ChatGPT as a tool for medical education and clinical decision-making on the wards: Case study
	Comparing patient perception and physician's records: Generative AI performance evaluation
	Free-text documentation of dementia symptoms in home healthcare: A natural language processing study
	Investigating awareness of artificial intelligence in healthcare among medical students and professionals in Pakistan: A cross-sectional study
	Adapted large language models can outperform medical experts in clinical text summarization
	Enhancing musculoskeletal injection safety: Evaluating checklists generated by artificial intelligence and revising the preformed checklist
	Can a novel natural language processing model and artificial intelligence automatically generate billing codes from spine surgical operative notes?
	Identification of prediabetes discussions in unstructured clinical documentation: Validation of a natural language processing algorithm
	Patient-representing population's perceptions of GPT-generated versus standard emergency department discharge instructions: Randomized blind survey assessment
	Generative artificial intelligence writing open notes: A mixed methods assessment of the functionality of GPT 3.5 and GPT 4.0
	Unlocking the potential: Investigating dental practitioners' willingness to embrace artificial intelligence in dental practice
No full-text available	Clinical implementation of artificial intelligence scribes in health care: A systematic review
	Summarize-then-prompt: A novel prompt engineering strategy for generating high-quality discharge summaries
	AI in Dentistry: Innovations, ethical considerations, and integration barriers
	The influence of artificial intelligence scribes on clinician experience and efficiency among pediatric subspecialists: A rapid, randomized quality improvement trial
	Generating outpatient progress notes: A comparison of individualized and generalized models
	Leveraging a large language model for streamlined medical record generation: Implications for health care informatics
	What works. Finders keepers. Automated charge capture returns precious time to physicians
	The effect of ambient artificial intelligence scribes on trainee documentation burden
	Ambient artificial intelligence scribes in pediatric primary care: A mixed methods study

Appendix 7: PRISMA flow diagram



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