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Supporting national policy development and implementation

The use of artificial intelligence for administrative tasks in primary care: protocol for a systematic evidence map

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Background

Reducing the administrative burden on staff, including those working in primary care, is a key challenge for the National Health Service (NHS).[1-3] A recently published UK study found that the proportion of GPs' overall workload dedicated to administrative tasks approximately doubled from 16% in 2005 to 30% in 2019.[4] Other research reported that three quarters of GPs (75%) experience 'considerable' or 'high' pressure due to the volume of paperwork.[5]

The administrative burden on staff can impact negatively on their well-being, job satisfaction and retention.[6, 7] Not only does this have financial implications for the NHS, but there is also an established link between staff wellbeing and the quality of care, safety and patient outcomes.[7, 8] Having a large administrative workload also reduces the clinical capacity of staff, which again potentially has a negative effect on patient care.[3, 6]

Research has highlighted how problems with NHS administration impact on the daily experiences of patients and can create barriers to care. Problems in primary care and those arising more generally from poor patient communication have been highlighted as particular issues.[9-11] When patients encounter problems with NHS administration, it can increase staff workload, reduce service efficiency and contribute to financial waste.[11] It may also have negative effects on the emotional wellbeing of staff as a result of dealing with frustrated and angry patients.[11] Notably, difficulties with NHS administration are most likely to be experienced by people with long-term health conditions or disabilities as well as other disadvantaged groups including individuals with low literacy levels, those on a low income and people from minority ethnic communities.[9, 11] The Darzi review reported that improving NHS administration for the benefit of patients has rarely been prioritised.[12]

The greater use of artificial intelligence (AI) is widely considered potentially beneficial for reducing the administrative burden on NHS staff and patients.[2, 3, 13-15] The recently published NHS Long Term Plan proposed a shift from 'analogue to digital', a key focus of which is on greater use of AI for administrative and clerical tasks in primary care to increase staff productivity and free up more time to see patients.[3] AI also offers the potential to improve patient communication and engagement, for example, by providing tailored and personalised health information.[16]

A rapid review of 467 studies published between 2010 and 2023 challenged the common assumption that the adoption of new technologies in healthcare will inevitably result in time savings for staff.[17] Another review specifically examined the impact of technology on the UK health service and its workforce (the 'Topol' review). It stated that the adoption of new digital technologies should be based on *"compelling real-world evidence of clinical efficacy and cost-effectiveness, followed by practical knowledge transfer throughout the NHS".*[13]

The London-York PRP Evidence Review Facility, funded by the National Institute for Health and Care Research (NIHR), was asked by the Department of Health and Social Care (DHSC) in England to identify evidence on the use of artificial intelligence in primary care administration, with a specific focus on reducing the administrative burden and improving efficiency. An iterative and multi-stage approach to reviewing the evidence was agreed.

Preliminary scoping of the literature

To inform the development of the review, we conducted a preliminary scoping of the literature, primarily using AI (GPT-4o) to identify and classify relevant studies. This revealed an active and broad evidence base on the use of AI in primary care, although much of it appeared to have a

focus on supporting clinical decision-making rather than on administrative tasks. Whilst we believe this AI-led exercise provided a useful insight into the literature, a human-curated map of the evidence is warranted.

Aim

Our aim in this phase of the work is to systematically scope and map the availability of evidence on the potential of AI tools to reduce the administrative burden and improve efficiency in primary care. Our objective is to provide a high-level overview of the extent and nature of the evidence, which enables research gaps to be identified. We will not seek to extract, evaluate and synthesise findings from any included studies at this stage.

Identification of evidence

To identify relevant publications, we will search the following databases:

- MEDLINE
- Embase
- PsycINFO
- CINAHL
- Cochrane library
- Epistemonikos
- IEEE Xplore Digital Library
- ACM digital library
- Health Management Information Consortium
- Social Science Citation Index (Web of Science)

Staff at the London-York PRP Evidence Review Facility are currently maintaining a living evidence and gap map on generative LLM-based tools for health and social care applications. We will also search this map for potentially relevant records.

A search strategy for the academic databases has been designed in Ovid MEDLINE by an information specialist in consultation with the review team (see Appendix). The strategy is based on three concepts: i) artificial intelligence technologies; ii) primary care settings; and iii) administrative or clerical tasks. Each concept uses a wide range of terms and phrases. A multi-stranded approach is taken to combine these concepts: One approach combines the three concepts across title, abstract, keywords and medical subject headings; a second approach combines the first two concepts by title, keywords and medical subject headings (to mitigate challenges in articulating the concept of administration); and a third approach includes the names of known AI tools designed for use in primary care and other healthcare settings, for example Heidi and Tortus. The final MEDLINE strategy will be adapted for use with the other academic databases. Searches will be date-limited to 2010 onwards to maximise the relevance of the evidence identified. No geographical or language restrictions will be applied to the searches.

Study selection

We will include empirical studies that evaluate the use of AI tools for administrative tasks in primary care. Specifically, records will be screened for inclusion using the following criteria.

Study design: Primary research of any design, systematic reviews or umbrella reviews ('reviews of reviews'). A review will be considered systematic if authors (i) searched at least two sources,

one of which must have been a named database (ii) reported some search terms and clear eligibility criteria covering key review components (iii) reported the number of references retrieved and the number of studies included, (iv) identified or referenced the included studies and (vi) provided a synthesis of findings.

Types of AI: Any form of AI such as tools based on machine learning, deep learning, and discriminative or generative large language models. AI is defined here as technology that enables computers and other machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy.[18] AI performs tasks that normally require human intelligence such as generating language, interpreting images and learning from data.[16]

We will exclude studies of semi- or fully automated tasks not explicitly based on AI, i.e. technology that operates solely by following a predefined series of rules or instructions including Robotic Process Automation (RPA). This software-based technology can perform repetitive human tasks such as data extraction and form filling.[19] Studies of hybrid technologies that integrate RPA and AI (Intelligent Automation) will be included.

Types of task: Any non-clinical administrative or clerical tasks related to operational processes in primary care settings. Tasks related to both patient-focused and 'back office' functions[9] are eligible. This may include, but is not limited to, processes related to: patient administration such as appointment scheduling or management of repeat prescriptions; clinical records and information management; healthcare planning and resource management including staffing; and patient communication.

AI tools supporting administrative tasks that occur within the context of a specific clinical encounter in primary care will be included. For example, we will include evaluations of AI tools based on ambient voice technology ('Ambient scribes' or 'AI scribes'). These tools are designed to transcribe clinical encounters in real time and then generate draft clinical notes. This technology can also generate other forms of output such as summaries and medical letters.[20, 21] We will also include studies evaluating the use of AI to support the delivery of primary care services following, or outside of, a clinical encounter. For example, using AI to generate, simplify, or otherwise improve, personalised information given to individual patients by clinicians. This could include various forms of written communication for conveying personal information such as medical instructions or test results.

Evaluations of generic materials generated by AI for groups of patients will be excluded. For example, AI-generated educational leaflets on common health conditions such as high blood pressure. We will also exclude studies of clinical decision-making and the ability of AI to perform the clinical role of a health professional in primary care including: answering patients' health-related or clinical questions; determining patient diagnosis and the most appropriate treatment; disease screening; or assessing individual disease risk.

Setting: Any primary care setting – general practice, community pharmacy, dental, or optometry services. We will exclude studies conducted in other healthcare settings, i.e. ones without a specific focus on primary care.

Outcomes: Any outcome related to AI performance, which may include accuracy or effectiveness, resource use (e.g. change in time-on-task), cost-effectiveness or other impacts (positive or negative) on staff, patients or services. Studies that report findings on the implementation of AI tools will also be included.

Publication type and status: Any full publication that reports findings from an empirical study or studies (e.g., journal papers, research letters, brief reports). Conference abstracts will be excluded as they only report very limited findings from a study and provide few details about methods. We will also exclude pre-prints, which become obsolete once the final version of a journal paper is published.

Selection procedure

We will upload records identified from database searches into EPPI Reviewer software.[22] A sample of approximately 100 records will be screened on title and abstract by two reviewers independently and their decisions compared. This process will be repeated until a satisfactory level of agreement is achieved; the remaining records will then be screened by one reviewer only. If there is uncertainty regarding the eligibility of a record, it will be discussed with a second reviewer. The full text of all potentially relevant studies will be screened independently by two reviewers. Any disagreements that arise will be resolved by consensus or by consulting a third reviewer. We will use machine learning and text mining to prioritise records for title and abstract screening ('priority screening mode' in EPPI reviewer).

Data extraction

For each included publication, key characteristics will be extracted by one reviewer and checked by a second reviewer. It is anticipated that the information captured will include: aim; study design; country of origin; primary care setting; nature of the problem; name of model or AI evaluated (class/type); task performed; stage of development, e.g. whether it is a 'real world' evaluation or early phase/pre-implementation; and primary outcome(s) reported.

Synthesis

The key characteristics extracted from included studies will be used to produce a descriptive map (summary) of the evidence. This high-level overview will provide a taxonomy of AI-assisted tasks that have been evaluated and detail the availability of evidence about each category. We will also create an interactive map of the evidence using EPPI Visualiser. This will display the available evidence visually and enable users to view the bibliographical details of included studies.

Stakeholder engagement

We will establish an advisory group to inform the development of the project, which will comprise academic experts, primary care clinicians and patient representatives. The advisory group will meet virtually and initially be asked to comment on the scope of the work. Once we have completed classifying and mapping the evidence, we will invite feedback on the map from the advisory group.

Future stages

A draft evidence map will be submitted to the DHSC. A follow up virtual meeting will be arranged between the London-York PRP Evidence Review Facility team and DHSC colleagues to discuss the findings and scope for further work. If specific areas of interest to the DHSC are identified and a focused research question is agreed, we will conduct an additional stage of evidence synthesis work. We anticipate that this will involve conducting an in-depth examination of the evidence on a specific type of AI or AI-assisted task. In the event that no additional work is required beyond the current map, we will publish a final project report on the EPPI Centre website. We may also produce additional outputs such as a journal paper.

References

1. Department for Health and Social Care. Bureaucracy busting concordat: principles to reduce unnecessary bureaucracy and administrative burdens on general practice. London: DHSC; 2022. Available from: https://www.gov.uk/government/publications/bureaucracy-busting-concordat-principles-to-reduce-unnecessary-bureaucracy-and-administrative-burdens-on-general-practice/bureaucracy-busting-concordat-principles-to-reduce-unnecessary-bureaucracy-and-administrative-burdens-on-general-practice.

2. NHS England. NHS Long Term Workforce Plan. London: NHS England; 2023. Available from: https://www.england.nhs.uk/publication/nhs-long-term-workforce-plan/.

3. Department for Health and Social Care. Fit for the Future: The 10 Year Health Plan for England. London: DHSC; 2025. Available from: https://www.gov.uk/government/publications/10-year-health-plan-for-england-fit-for-the-future.

4. de Dumast L, Moore P, Snell K, Marshall T. Trends in clinical workload in UK primary care 2005-2019: a retrospective cohort study. British Journal of General Practice. 2024;74(747):e659-e65.

5. Odebiyi B, Walker B, Gibson J, Sutton M, Spooner S, Checkland K. Eleventh national GP worklife survey. University of Manchester, Manchester: Health Organisation, Policy and Economics research group; 2021. Available from: https://pru.hssc.ac.uk/projects/projects-by-theme/workforce/eleventh-national-gp-worklife-survey.html.

6. Department for Health and Social Care. Busting bureaucracy:empowering frontline staff by reducing excess bureaucracy in the health and care system in England. London: DHSC; 2020. Available from: https://assets.publishing.service.gov.uk/media/5fd792b1d3bf7f3057adeb68/20112020_Busting_Bureaucracy_FINAL_PDF_VERSION_.pdf.

7. Holden J. 10 early actions the government can take to improve NHS working conditions. London: The King's Fund; 2024. Available from: https://www.kingsfund.org.uk/insight-and-analysis/briefings/10-actions--improve-nhs-working-conditions.

8. Raine G, Thomas S, Rodgers M, Wright K, Eastwood A. Workplace-based interventions to promote healthy lifestyles in the NHS workforce: a rapid scoping and evidence map. Health and Social Care Delivery Research. 2020;8(18).

9. Ewbank L, Lamming L, Cream J, Wenzel L. Admin matters: the impact of NHS administration on patient care. London: The King's Fund.; 2021. Available from: https://www.kingsfund.org.uk/publications/admin-matters-nhs-patient-care.

10. National Voices. Paper Works: the critical role of administration in quality care. London: National Voices; 2021. Available from: https://www.nationalvoices.org.uk/publication/paper-works-critical-role-administration-quality-care/.

11. Cream J, Wellings D, Wenzel L, Lant J, Pett W. Lost in the system: the need for better admin. London: The King's Fund; 2025. Available from: https://www.kingsfund.org.uk/insight-and-analysis/long-reads/lost-in-system-need-for-better-admin#:~:text=Admin%20doesn%27t%20just%20affect,they%20know%20they%20cannot%20attend.

12. Darzi A. Independent Investigation of the National Health Service in England. 2024. Available from: https://www.gov.uk/government/publications/independent-investigation-of-the-nhs-in-england.

13. Topol E. The Topol review: preparing the healthcare workforce to deliver the digital future. London: NHS England; 2019. Available from: https://topol.hee.nhs.uk.

14. Willis M, Duckworth P, Coulter A, Meyer E, Osborne M. Qualitative and quantitative approach to assess of the potential for automating administrative tasks in general practice. BMJ Open. 2020;10(6):e032412.

15. Mistry P. More than just hype: how emerging AI use is assisting health and social care. The King's Fund: London; 2025. Available from: https://www.kingsfund.org.uk/insight-and-analysis/long-reads/emerging-ai-use-health-and-social-care.

16. NHS Confederation, NHS England. An engagement paper on the effective use of Artificial Intelligence in NHS Communications. London: NHS England; 2024. Available from: https://www.england.nhs.uk/london/shape-the-future-of-ai-within-nhs-communications/engagement-paper-on-ai-in-nhs-communications-24-25/.

17. Shemesh B, Coughlan E, Horton T. Tech to save time: how the NHS can realise the benefits. London: The Health Foundation; 2025. Available from: https://www.health.org.uk/reports-and-analysis/analysis/tech-to-save-time-how-the-nhs-can-realise-the-benefits.

18. Stryker C, Kavlakoglu E. What is artificial intelligence (AI)?; 2024 Available from: https://www.ibm.com/think/topics/artificial-intelligence Accessed 21st July

19. NHS England Transformation Directorate. Understanding RPA: NHS England; Available from: https://transform.england.nhs.uk/key-tools-and-info/guidance-for-designing-delivering-and-sustaining-rpa-within-the-nhs/understanding-rpa/#:~:text=Definition%20of%20automation%20clusters,management%2C%20report%20generation%20and%20distribution Accessed 21 July 2025.

20. NHS England. AI-enabled ambient scribing products in health and care settings. London: NHS England; 2025. Available from: https://www.england.nhs.uk/long-read/ai-enabled-ambient-scribing-products-in-health-and-care-settings/#:~:text=Ambient%20scribing%20products%2C%20including%20ambient,and%20validation%20after%20the%20visit.

21. NHS England. Guidance on the use of AI-enabled ambient scribing products in health and care settings. London: NHS England; 2025. Available from: https://www.england.nhs.uk/long-read/guidance-on-the-use-of-ai-enabled-ambient-scribing-products-in-health-and-care-settings/#:~:text=and%20system%20performance-,2.,Output%20information%20functions:.

22. Thomas J, Graziosi S, Brunton J, Ghouze Z, O'Driscoll P, Bond M. EPPI-Reviewer: advanced software for systematic reviews, maps and evidence synthesis [Software]. London: UCL; 2024.

Appendix

Ovid MEDLINE search strategy

Database: Ovid MEDLINE(R) ALL <1946 to September 29, 2025>
Search Strategy:

1 (Health* adj1 administrat*).ti,ab,kf,bt,ot,vb,cl,oa. (18602)
2 (administration or administrative or clerical or nonclinical or "practice staff*" or management or organisation* or organization* or bureaucratic or bureaucracy or operation* or office).ti,bt,ot. (878173)
3 ((administration or administrative or management or organisation* or organization* or operation* or office or business) adj3 (data or functions or task or tasks or burden or burdens or load or loads or workload or workloads or efficienc* or inefficienc* or time or platform* or cost or costs or cost-effect* or costing or service* or procedure* or resourc* or planning or process or processes or processing or staff or staffing or personnel or schedul* or systems)).ti,ab,kf,bt,ot,vb,cl,oa. (281047)
4 (Payroll or accountan* or workforce or manpower or "resource manage*" or resourcing or workflows or workflow or clerical or workload or "office automation" or clerical or nonclinical or "practice staff*" or bureaucratic or bureaucracy or "back office").ti,ab,kf,bt,ot,vb,cl,oa. (183916)
5 (((financ* or cost or payment or billing or business or budget* or purchasing) adj1 (tools or system or systems or manage* or administrat* or operation* or resourc* or organisation or organization or codes or schedul* or data)) or "patient credit").ti,ab,kf,bt,ot,vb,cl,oa. (34638)
6 (administrat* adj3 (support or tool or tools)).ti,ab,kf,bt,ot,vb,cl,oa. (4812)
7 ((management or managing or curation or curating or organising or organizing or administrat* or synchroni*) adj3 (data or documents or documentation or data or records or "clinical record*" or "health records" or "patient records" or "dental records" or "chart notes" or file or filing or files or inbox or messag* or office or email or emails or workload or diary or diaries or calendar* or "unstructured data" or appointment* or scheduling or planning or prescribing or prescriptions)).ti,ab,kf,bt,ot,vb,cl,oa. (69185)
8 scheduling.ti,ab,kf,bt,ot,vb,cl,oa. (16404)
9 documentation.ti,ab,kf,bt,ot,vb,cl,oa. (71912)
10 ("record-keeping" or "recordkeeping").ti,ab,kf,bt,ot,vb,cl,oa. (3281)
11 "data entry".ti,ab,kf,bt,ot,vb,cl,oa. (5080)
12 (allocat* adj3 resources).ti,ab,kf,bt,ot,vb,cl,oa. (15741)
13 (Manpower or "Practice management" or "office management" or "general administrat*").ti,ab,kf,bt,ot,vb,cl,oa. (12964)
14 (Messages or (message adj1 (automat* or service? or systems or system or platform or reminder*)) or messaging).ti,ab,kf,bt,ot,vb,cl,oa. (53821)
15 ("data privacy" or (data adj1 governance) or (analytics adj1 platform?) or (data adj1 integration) or (organisat* adj1 data) or (organizat* adj1 data) or (organisat* adj information) or (organizat* adj information)).ti,ab,kf,bt,ot,vb,cl,oa. (12970)
16 (Patient adj2 (Participation or involvement or communicat* or message or remind* or schedul* or notes or visits or appointment* or records or conversations)).ti,ab,kf,bt,ot,vb,cl,oa. (56325)
17 ((communicat* or media or newsletter? or "patient group?") adj3 (systems or administrat*)).ti,ab,kf,bt,ot,vb,cl,oa. (10183)
18 (form? adj1 filling).ti,ab,kf,bt,ot,vb,cl,oa. (62)
19 "routine tasks".ti,ab,kf,bt,ot,vb,cl,oa. (454)
20 (summariser or summarizer).ti,ab,kf,bt,ot,vb,cl,oa. (42)

21 (letters or summarise or summaries or "note taking" or "note taker" or scribe or scribes or scribing or transcribe or transcribing or transcription*).ti,ab,kf,bt,ot,vb,cl,oa. (918577)
22 ((convert* adj3 (text or voice or audio)) or (text adj3 (audio or voice))).ti,ab,kf,bt,ot,vb,cl,oa. (1105)
23 (generat* adj3 (reports or instruction or instructions or reminder* or communication* or letter* or mail or email or reminder* or notes or note or prescribing or prescription*)).ti,ab,kf,bt,ot,vb,cl,oa. (5378)
24 (notes adj3 (consultation* or referral* or discharg* or conversation* or handoff or handover or outpatient*)).ti,ab,kf,bt,ot,vb,cl,oa. (869)
25 (medication* adj1 information).ti,ab,kf,bt,ot,vb,cl,oa. (1255)
26 ((digital or information or data) adj1 (platform* or management* or systems or system)).ti,ab,kf,bt,ot,vb,cl,oa. (90755)
27 ((scheduling or entry or file or filing or record*) adj1 (systems or system or platform)).ti,ab,kf,bt,ot,vb,cl,oa. (14980)
28 ("patient administration" or "patient data" or "patient information").ti,ab,kf,bt,ot,vb,cl,oa. (38905)
29 (annotation or annotate or charting).ti,ab,kf,bt,ot,vb,cl,oa. (58045)
30 ("peridontal charting" or "dental charting" or "optical prescription*" or "lens specification*" or "lens prescription*" or ("eye health" adj3 record*) or ("eye care" adj3 record*) or (eyecare adj3 record*)).ti,ab,kf,bt,ot,vb,cl,oa. (215)
31 ("wait times" or "patient visits" or "outpatient visits").ti,ab,kf,bt,ot,vb,cl,oa. (16017)
32 "medication data".ti,ab,kf,bt,ot,vb,cl,oa. (1017)
33 ((appointment* adj1 (scheduling or systems or booking or remind* or administrat* or manag* or organis* or organiz* or "no show?" or missed or cancel* or unattended or platform*)) or appointments).ti,ab,kf,bt,ot,vb,cl,oa. (23147)
34 (answer* adj (phones or calls or messag* or telephone* or enquir* or inquiri*)).ti,ab,kf,bt,ot,vb,cl,oa. (153)
35 ((digital or information or data or filing or booking or purchasing or ordering or orders or file) adj1 (platform* or management* or systems or system)).ti,ab,kf,bt,ot,vb,cl,oa. (92864)
36 ("test result*" adj3 (communicat* or written or draft* or write or writing or transcript* or transcrib* or provid* or message or manage* or administrat* or report*)).ti,ab,kf,bt,ot,vb,cl,oa. (2634)
37 ((personalis* or personaliz*) adj3 (administrat* or information or respons* or notes or tasks or message or report* or records* or "test results" or instructions)).ti,ab,kf,bt,ot,vb,cl,oa. (3402)
38 ((writing* or drafting or draft or write) adj3 (reports or instruction or instructions or reminder* or communication* or letter* or mail or email* or reminder* or note or notes or "job descriptions" or prescribing or prescription*)).ti,ab,kf,bt,ot,vb,cl,oa. (3211)
39 information management/ or health information management/ or health information exchange/ or information services/ or data management/ or documentation/ or data curation/ or filing/ (44263)
40 "organization and administration"/ (14713)
41 "appointments and schedules"/ or shared medical appointments/ or waiting lists/ or "facilities and services utilization"/ or fee schedules/ or health facility administration/ or knowledge management/ or management information systems/ or office automation/ or word processing/ or "personnel staffing and scheduling information systems"/ or personnel management/ or pharmacy administration/ or records/ or consent forms/ or dental records/ or diet records/ or medical records/ or administrative claims, healthcare/ or clinical coding/ or medical record linkage/ or medical records, problem-oriented/ or medical records systems,

computerized/ or electronic health records/ or health smart cards/ or medical order entry systems/ or patient discharge summaries/ or security measures/ or computer security/ or blockchain/ or data anonymization/ or time management/ or total quality management/ (222197)
42 Office Management/ or Office Automation/ or "health services administration"/ (7430)
43 (records adj1 (clean* or reconcil* or manage*)).ti,ab,kf,bt,ot,vb,cl,oa. (289)
44 ((electronic* or digital or computer*) adj2 ("health records" or "medical records" or "clinical records" or "dental records" or "patient records" or record*)).ti,ab,kf,bt,ot,vb,cl,oa. (91287)
45 medical history taking/ (20710)
46 ("medical history" adj5 (report* or record* or notes* or collect*)).ti,ab,kf,bt,ot,vb,cl,oa. (4339)
47 "patient complaint*".ti,ab,kf,bt,ot,vb,cl,oa. (1538)
48 "interactive dashboard*".ti,ab,kf,bt,ot,vb,cl,oa. (196)
49 ((clinical adj1 notes) or (patient adj1 notes) or (dental adj1 notes)).ti,ab,kf,bt,ot,vb,cl,oa. (4984)
50 "repeat prescription*".ti,ab,kf,bt,ot,vb,cl,oa. (401)
51 ((ambient or intelligen* or AI or "machine learning" or virtual) adj3 (voice or scribe? or scribing or transcri* or chart* or note or notes* or writing or annotat* or record* or report* or message or assistant or assistance)).ti,ab,kf,bt,ot,vb,cl,oa. (7872)
52 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 (2873276)
53 ((("general practice" or "GP" or "family practice") adj1 (setting? or clinic* or surger* or appointment? or centre? or center? or consult* or service?)) or "primary care" or "primary healthcare" or "primary health care" or polyclinic or polyclinics or "General practition*" or "family doctor*" or "family medicine*" or "first line care" or (doctors* adj surgery) or (doctors* adj surgeries) or "family practitioner*" or "general medical practitioner*" or "primary dental care" or "dental practice*" or "dental care" or "dental clinics" or "dental clinic" or "dental facility" or "dental facilities" or "dental office" or "dental offices" or "dental surgery" or "dental surgeries" or dentists or (dental adj1 practice*) or "Community Health Cent*" or "Community Healthcare*" or ("Community Care" not hospital?) or "primary eye care" or "primary eyecare" or optician* or "eyecare practic*" or "eye care practic*" or "eyecare service?" or "eye care service?" or "eye care testing" or "eye care tests" or "eye care professionals" or "eyecare professionals" or "community eye care" or "community eyecare" or "high street eye care" or "high street eyecare" or ((Community adj10 (pharmacy or pharmacies or pharmacist)) not ((community adj1 hospital?) or (hospital adj3 pharmac*))) or ((Pharmacist* or pharmacy or pharmacies) adj10 (retail or local or "high street" or street or business* or commerc* or shops or stores)) or ((Pharmacies or pharmacy) adj5 (management or setting? or appointment? or centre? or center? or consult* or service?)) or "Ophthalmic Dispensing" or "Ophthalmic Dispensers").ti,ab,kf,bt,ot,vb,cl,oa. (364044)
54 ("general practice" or (Pharmacy or Pharmacist*)).ti,bt,ot. (65359)
55 ((("general practice" or "GP" or "family practice") adj1 (setting? or clinic* or surger* or appointment? or centre? or center? or consult* or service?)) or "primary care" or "primary healthcare" or "primary health care" or polyclinic or polyclinics or "General practition*" or "family doctor*" or "family medicine*" or "first line care" or (doctors* adj surgery) or (doctors* adj surgeries) or "family practitioner*" or "general medical practitioner*" or "primary dental care" or "dental practice*" or "dental care" or "dental clinics" or "dental clinic" or "dental facility" or "dental facilities" or "dental office" or "dental offices" or "dental surgery" or "dental surgeries" or dentists or (dental adj1 practice*) or "Community Health Cent*" or "Community Healthcare*"

or ("Community Care" not hospital?) or "primary eye care" or "primary eyecare" or optician* or "eyecare practic*" or "eye care practic*" or "eyecare service?" or "eye care service?" or "eye care testing" or "eye care tests" or "eye care professionals" or "eyecare professionals" or "community eye care" or "community eyecare" or "high street eye care" or "high street eyecare" or ((Community adj10 (pharmacy or pharmacies or pharmacist)) not ((community adj1 hospital?) or (hospital adj3 pharmac*))) or ((Pharmacist* or pharmacy or pharmacies) adj10 (retail or local or "high street" or street or business* or commerc* or shops or stores)) or ((Pharmacies or pharmacy) adj5 (management or setting? or appointment? or centre? or center? or consult* or service?)) or "Ophthalmic Dispensing" or "Ophthalmic Dispensers").ti,kf,bt,ot. (165992)
56 Primary Health Care/ or general practitioners/ or physicians, family/ or partnership practice, dental/ or practice management/ or practice management, dental/ or practice management, medical/ or opticians/ or Community Pharmacy Services/ or Dental Clinic/ or Dental Facilities/ or Dental Offices/ or Dental Health Service/ or Primary Care Nursing/ or Physicians' Offices/ (165787)
57 53 or 54 or 56 (465155)
58 exp Automation/ or exp large language models/ or exp machine learning/ or exp deep learning/ or exp intelligent systems/ or exp artificial intelligence/ or exp Expert Systems/ or exp Natural Language Processing/ or exp neural networks, computer/ (293583)
59 (AI or (Artificial adj3 intelligen*) or (artificially adj3 intelligen*) or "GenAI" or "xAI" or (Neural adj3 (Network or Networks or net or nets)) or (Machine adj2 learning) or "Deep Learning" or "expert system" or "expert systems" or "intelligen* machine*" or "Machine* Intelligen*" or ("machine translation" or "large language model" or "large language models" or " Vision Language Models" or "Rise Language Models" or ((Recommender or recommendation) adj4 (system or systems or filtering)) or (Machine* adj4 (automated or automation or self-supervised or supervised or "semi supervised" or unsupervised or reinforcement or "human supervised")) or "human-machine collaboration" or "intelligent system" or "intelligent systems" or "generative adversarial network" or "generative adversarial networks" or "human in the loop") or ("self navigating" or "self-navigation" or "self navigation" or "self-navigation" or "Autonomous navigation" or "autonomous system" or "autonomous systems" or "autonomous reasoning" or "reinforcement-learning algorithm" or "cognitive computing" or "computational Intelligen*" or "multi-agent system" or "multi-agent systems") or "zero shot" or "Chain-of-Thought" or ((large or natural or generative or machine or deep learning) adj3 (language or text) adj3 model*) or ("pre-trained" adj2 transformer*) or (pretrained adj2 transformer*) or (transformer adj2 method) or "Bidirectional Encoder Representations from Transformers" or "Segment Anything model" or (("fine tuning" or "fine-tuned") adj3 model*) or "retrieval-augmented generation").ti,bt,ot,kf. (266884)
60 (AI or (Artificial adj3 intelligen*) or (artificially adj3 intelligen*) or "GenAI" or "xAI" or (Neural adj3 (Network or Networks or net or nets)) or (Machine adj2 learning) or "Deep Learning" or "expert system" or "expert systems" or "intelligen* machine*" or "Machine* Intelligen*" or ("machine translation" or "large language model" or "large language models" or " Vision Language Models" or "Rise Language Models" or ((Recommender or recommendation) adj4 (system or systems or filtering)) or (Machine* adj4 (automated or automation or self-supervised or supervised or "semi supervised" or unsupervised or reinforcement or "human supervised")) or "human-machine collaboration" or "intelligent system" or "intelligent systems" or "generative adversarial network" or "generative adversarial networks" or "human in the loop") or ("self navigating" or "self-navigation" or "self navigation" or "self-navigation" or "Autonomous navigation" or "autonomous system" or "autonomous systems" or "autonomous reasoning" or "reinforcement-learning algorithm" or "cognitive computing" or "computational Intelligen*" or

"multi-agent system" or "multi-agent systems") or "zero shot" or "Chain-of-Thought" or ((large or natural or generative or machine or deep learning) adj3 (language or text) adj3 model*) or ("pre-trained" adj2 transformer*) or (pretrained adj2 transformer*) or (transformer adj2 method) or "Bidirectional Encoder Representations from Transformers" or "Segment Anything model" or (("fine tuning" or "fine-tuned") adj3 model*) or "retrieval-augmented generation").ab,vb,cl,oa. (377727)
61 ("active learning" or ((ambient or intelligen* or AI or "machine learning" or virtual) adj3 (voice or scribe? or scribing or transcri* or chart* or note or notes* or writing or annotat* or record* or report* or message or assistant or assistance)) or ("Speech recognition" or "Image recognition" or "Face recognition" or "Computer vision" or "Machine vision") or (LLM or LLMs or RLM or RLMs or VLM or VLMs) or (unsupervised adj3 (learning or clustering)) or (supervised adj3 (learning or clustering)) or ("semi supervised" adj3 (learning or clustering)) or (machine* adj2 interpret*) or (technolog* adj3 (artificial* or intelligen*)) or ((artificial* or machine* or intelligen*) adj5 classifier*) or "topic model*" or ("natural language" adj1 (generat* or processing or reasoning or interface*)) or "machine-interpret*" or ((automate or automation or automated*) adj5 (intelligen* or learning* or reasoning or interactiv* or recogni* or reconcil* or classif* or categori* or conversation^ or voice or intuitiv*)) or (virtual adj1 assistan*)).ti,bt,ot,kf. (40104)
62 ("active learning" or ((ambient or intelligen* or AI or "machine learning" or virtual) adj3 (voice or scribe? or scribing or transcri* or chart* or note or notes* or writing or annotat* or record* or report* or message or assistant or assistance)) or ("Speech recognition" or "Image recognition" or "Face recognition" or "Computer vision" or "Machine vision") or (LLM or LLMs or RLM or RLMs or VLM or VLMs) or (unsupervised adj3 (learning or clustering)) or (supervised adj3 (learning or clustering)) or ("semi supervised" adj3 (learning or clustering)) or (machine* adj2 interpret*) or (technolog* adj3 (artificial* or intelligen*)) or ((artificial* or machine* or intelligen*) adj5 classifier*) or "topic model*" or ("natural language" adj1 (generat* or processing or reasoning or interface*)) or "machine-interpret*" or ((automate or automation or automated*) adj5 (intelligen* or learning* or reasoning or interactiv* or recogni* or reconcil* or classif* or categori* or conversation^ or voice or intuitiv*)) or (virtual adj1 assistan*)).ab,vb,cl,oa. (97053)
63 (AlexaTM or (Amazon* and Alexa) or Anthropic or Bardeen or BERT or "Bing chat" or BioGPT or BLOOM or BloombergGPT or Cerebras-GPT or ChatGPT* or "Chat GPT" or chatbot* or Chatsonic or Chinchilla or Claude or DALL-E or DeepSeek or EinsteinGPT or Ernie or Falcon or Galactica or "Generative Fill" or Copilot or GLaM or "Google* Assistant" or "Google* Bard" or "Google* Gemini" or Gopher or GPT or GPTJ or GPT1 or GPT2 or GPT3* or CPT4* or GPT-1 or GPT-2 or GPT-3* or GPT-4* or GPTNeo or GPT-NEoX or GPT-J* or GPT4all or Grok or "IBM Watson" or LaMDA or LLaMA or "Megatron-Turing NLG" or Midjourney or Minerva or Mistral or NotebookLM or NeevaAI or Nvidia or OpenAI or "Open AI" or OpenAssistant or PaLM or PanGu-E or PathAI or "Path AI" or (Apple* and Siri) or SlackGPT or "Stable Diffusion" or StyleGAN or Synthesia or XLNet or YaLM or YouChat).ti,bt,ot,kf. (26430)
64 (AlexaTM or (Amazon* and Alexa) or Anthropic or Bardeen or BERT or "Bing chat" or BioGPT or BLOOM or BloombergGPT or Cerebras-GPT or ChatGPT* or "Chat GPT" or chatbot* or Chatsonic or Chinchilla or Claude or DALL-E or DeepSeek or EinsteinGPT or Ernie or Falcon or Galactica or "Generative Fill" or Copilot or GLaM or "Google* Assistant" or "Google* Bard" or "Google* Gemini" or Gopher or GPT or GPTJ or GPT1 or GPT2 or GPT3* or CPT4* or GPT-1 or GPT-2 or GPT-3* or GPT-4* or GPTNeo or GPT-NEoX or GPT-J* or GPT4all or Grok or "IBM Watson" or LaMDA or LLaMA or "Megatron-Turing NLG" or Midjourney or Minerva or Mistral or NotebookLM or NeevaAI or Nvidia or OpenAI or "Open AI" or OpenAssistant or PaLM or PanGu-E or PathAI or "Path AI" or (Apple* and Siri) or SlackGPT or "Stable Diffusion" or StyleGAN or Synthesia or XLNet or YaLM or YouChat).ab,vb,cl,oa. (52760)

65 58 or 59 or 60 or 61 or 62 or 63 or 64 (651016)
66 58 or 59 or 61 or 63 (469552)
[named AI tools]
67 (Zanda or Heidi or Tortus or Lexacom or Medloop or DigitalTCO or ChartAI or "Dental AI" or CareStack or "Denti.AI" or "Lightning Dental Charts" or "DentalBee" or Dentem or "D Assistant").ti,ab,kf,bt,ot,vb,cl,oa. (240)
68 [Admin terms - all + Primary Care terms - all + AI terms + all] (0)
69 52 and 57 and 65 (1973)
70 [AI terms in title-keyword-MeSH + primary care terms in title-keyword-MeSH minus key exclusions - title-keyword] (0)
71 54 or 55 or 56 (301329)
72 66 and 71 (1760)
73 (diagnos* or treat* or detect* or educat* or screen* or decision* or teaching or curricul*).ti,bt,ot,kf. (3927078)
74 exp education/ or exp curriculum/ (956626)
75 73 or 74 (4617635)
76 72 not 75 (1036)
77 67 or 69 or 76 (2762)
78 limit 77 to yr="2010 -Current" (2382)

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