



# Topic Brief: Interventions to Improve Patient to Provider Interactions

**Date:** 5/17/2023

**Nomination Number:** 1020

**Purpose:** This document summarizes the information addressing a nomination submitted on October 21, 2022, through the Effective Health Care Website ([link to nomination](#)). This information was used to inform the Evidence-based Practice Center (EPC) Program decisions about whether to produce an evidence report on the topic, and if so, what type of evidence report would be most suitable.

**Issue:** The nominator is concerned about administrative activities, such as clinical documentation, compromising the patient to provider interaction. Technological interventions, including automatic transcription systems, is one candidate tool for decreasing documentation time to allow providers more unencumbered time with patients.

## Findings:

The EPC Program will not develop a new systematic review because we did not find enough primary studies addressing the concerns of this nomination.

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## Background

The patient-provider relationship is thought to be important for patient outcomes generally. For example, practices such as shared decision-making may improve patient affective-cognitive outcomes.<sup>1</sup> Further, improved patient-provider communication has been linked to improved health outcomes, decreased clinical anxiety and depression, and increased adherence to treatment self-management in chronically ill patients.<sup>2</sup>

Practices that compromise the patient-provider relationship, then, may negative affect patient outcomes. One such activity that can impinge on the patient-provider encounter is excessive administrative tasks, such as documentation during patient visits. Despite advantages of the widespread use of electronic health records (EHRs), the introduction of this technology has also led to increases in burdens such as extended work hours, time constraints, increased clerical workload, and disruptions to the patient-provider encounter.<sup>3</sup>

Interventions to reduce activities that detract from the patient-provider interaction, such as tools to facilitate the reduction of documentation time, and interventions to improve patient-provider communication, may improve outcomes. Tools to decrease documentation time may include voice-to-text technologies, and interventions to increase patient-provider communication may include activities such as communication skills training for providers.<sup>4</sup>

## Nomination Summary

The original nomination was focused on technologies to facilitate the reduction of time spent entering data into electronic health systems during patient appointments. After speaking with the nominator, we expanded the scope to include other interventions for improving the patient-provider encounter and increasing face-to-face communication between provider and patient.

## Scope

What is the effectiveness and comparative effectiveness of interventions to improve face-to-face interactions between patients and their healthcare providers during a clinical encounter?

**Table 1.** Questions and PICOS (population, intervention, comparator, outcome, and setting)

<b>Questions</b>	Interventions to improve patient-provider clinical encounters
<b>Population</b>	1) Healthcare providers (e.g., nurses, physicians, nurse practitioners, physician's assistants) who document patient encounters; 2) healthcare providers, patients
<b>Interventions</b>	1) Any technology or process to aid the healthcare provider in documentation of the clinical encounter and diagnosis (e.g., voice-to-text translation software, other tools to generate or fill in chart notes) 2) Interventions (e.g., provider and/or patient communication training) to aid in patient-provider communication (e.g., types of questions to ask, vocabulary/sentence structure, body language, tone of voice, rate of speech)
<b>Comparators</b>	1) Procedures as usual (e.g., typing/writing chart information); other technology or process 2) Other communication training/education; no communication training/education
<b>Outcomes</b>	1) Objective: time spent documenting patient information, diagnostic accuracy, health outcomes Subjective: healthcare provider's job satisfaction/ job-related quality of life; patient satisfaction 2) Objective: overall clinical outcomes, diagnostic accuracy Subjective: healthcare provider's satisfaction; patient's satisfaction
<b>Setting</b>	Clinic/inpatient/emergency room (in-person), telehealth (i.e., video)

## Assessment Methods

See Appendix A.

## Summary of Literature Findings

We did not find any recent systematic reviews that addressed the nomination.

We found a small number of primary studies of varied interventions from a review of the entire search yield. We found three studies of technologies to facilitate documentation: two studies of speech-to-text technologies,<sup>5,6</sup> and one of an electronic health record note template.<sup>7</sup> We found eleven studies of interventions to facilitate patient-provider communication: three studies of pre-visit interventions such as collecting information from the patient prior to the visit with the provider;<sup>8-10</sup> four studies of communication support tools such as screening tools, or providing written communication alongside spoken instruction;<sup>11-14</sup> two studies of communication training for healthcare providers;<sup>15,16</sup> one study of nurse-delivered mindfulness stress reduction training; and one study of matching the patient and provider on ethnicity.<sup>17</sup>

**Table 2.** Literature identified for each Question

Question	Systematic reviews (4/2020-4/2023)	Primary studies (4/2019-4/2023)
Interventions to improve patient-provider clinical encounters	Total: 0	Total: 14 Documentation technologies: 3 <ul style="list-style-type: none"><li>• RCT<sup>7</sup></li><li>• Non-randomized controlled<sup>5</sup></li><li>• Observational<sup>6</sup></li></ul> Patient-provider communication interventions: 11 <ul style="list-style-type: none"><li>• RCT<sup>8-12, 14, 15, 17</sup></li><li>• Non-randomized controlled<sup>16, 18</sup></li><li>• Pre-post<sup>13</sup></li><li>Clinicaltrials.gov: 4<sup>19-22</sup></li></ul>

**Abbreviations:** RCT=randomized controlled trial.

See Appendix B for detailed assessments of all EPC selection criteria.

### Summary of Selection Criteria Assessment

The nominator is concerned about administrative activities, such as clinical documentation, compromising the patient to provider interaction. Technological intervention, such as automatic transcription systems, is one candidate tool for decreasing documentation time to allow the provider more unencumbered time with the patient. We did not find any systematic reviews covering the nomination and found only a few primary studies with varied interventions.

Please see Appendix B for detailed assessments of individual EPC Program selection criteria.

### Related Resources

We identified additional information in the course of our assessment that might be useful. A 2023 systematic review<sup>23</sup> of systems that could detect speech and transcribe it in a natural and structured fashion simultaneously with the doctor-patient interaction (excluding speech-to-text-only technologies) have not been prospectively validated and tested in large-scale studies, highlighting a relevant research gap in the viability of these technologies.

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## Appendix A: Methods

We assessed nomination for priority for a systematic review or other AHRQ Effective Health Care report with a hierarchical process using established selection criteria. Assessment of each criteria determined the need to evaluate the next one. See Appendix B for detailed description of the criteria.

### Appropriateness and Importance

We assessed the nomination for appropriateness and importance.

### Desirability of New Review/Absence of Duplication

We searched for high-quality, completed or in-process evidence reviews published in the last three years April 21, 2020 - April 21, 2023 on the questions of the nomination from these sources:

- AHRQ: Evidence reports and technology assessments
  - AHRQ Evidence Reports <https://www.ahrq.gov/research/findings/evidence-based-reports/index.html>
  - EHC Program <https://effectivehealthcare.ahrq.gov/>
  - US Preventive Services Task Force <https://www.uspreventiveservicestaskforce.org/>
  - AHRQ Technology Assessment Program <https://www.ahrq.gov/research/findings/ta/index.html>
- US Department of Veterans Affairs Products publications
  - Evidence Synthesis Program <https://www.hsr.d.research.va.gov/publications/esp/>
  - VA/Department of Defense Evidence-Based Clinical Practice Guideline Program <https://www.healthquality.va.gov/>
- Cochrane Systematic Reviews <https://www.cochranelibrary.com/>
- PROSPERO Database (international prospective register of systematic reviews and protocols) <http://www.crd.york.ac.uk/prospéro/>
- PubMed <https://www.ncbi.nlm.nih.gov/pubmed/>

### Impact of a New Evidence Review

The impact of a new evidence review was qualitatively assessed by analyzing the current standard of care, the existence of potential knowledge gaps, and practice variation. We considered whether it was possible for this review to influence the current state of practice through various dissemination pathways (practice recommendation, clinical guidelines, etc.).

### Feasibility of New Evidence Review

We conducted a limited literature search in PubMed and PsycInfo for the last five years April 21, 2019 - April 21, 2023. We reviewed all studies identified titles and abstracts for inclusion. We classified identified studies by question and study design to estimate the size and scope of a potential evidence review.

Search strategy

**Ovid MEDLINE ALL 1946 to April 20, 2023**

Date searched: April 21, 2023

**KQ1**

1 ((chart\* or ((clinical or patient\$1) adj2 (encounter or interaction\$1 or practice or visit\$1)) or DHR\$1 or documentat\* or EHR\$1 or interfac\* or note\$1 or record\$1 or text\* or translat\*) and (automatic or AVR or dictating or dictation or ((digital\* or intelligent or virtual) and assistant\$1) or

(digital\* and scribe\$1) or escribe or intelligent or "Nuance Dragon" or SRT or speech or voice or templat\*)),ti,kf. (2634)  
 2 limit 1 to english language (2436)  
 3 limit 2 to yr="2020 -Current" (848)  
 4 3 and ((meta-analysis or systematic review).pt. or (meta-anal\* or metaanal\* or ((evidence or review or scoping or systematic or umbrella) adj3 (review or synthesis))).ti.) (38)  
 5 limit 2 to yr="2018 -Current" (1135)  
 6 5 and ((controlled clinical trial or randomized controlled trial).pt. or (control or controls or controlled or placebo\$1 or random\* or trial\*).ti.) (58)  
 7 6 not 4 (57)  
 8 5 and (Case-Control Studies/ or Cohort Studies/ or Comparative Study/ or Controlled Before-After Studies/ or Cross-Sectional Studies/ or Epidemiologic Studies/ or exp Evaluation Studies as Topic/ or Follow-Up Studies/ or Historically Controlled Study/ or Interrupted Time Series Analysis/ or Longitudinal Studies/ or Prospective Studies/ or Retrospective Studies/ or ("case-control" or cohort\$1 or "before-after" or ((comparative or epidemiologic or evaluation) adj3 study) or cross-sectional or follow-up or (historic\* adj4 control\*) or "interrupted time" or longitudinal\$2 or prospective\$2 or retrospective\$2).ti,kf.) (127)  
 9 8 not (4 or 7) (115)

## KQ2

10 (exp \*Nurses/ or exp \*Nurse Practitioners/ or exp \*Physicians/ or exp \*Physician Assistants/) and (\*Nurse-Patient Relations/ or exp \*Patients/ or \*Physician-Patient Relations/ or \*Professional-Patient Relations/) (7175)  
 11 ((clinician\$1 or doctor\$1 or nurse\$1 or nursing or physician\$1 or provider\$1) and patient\*).ti. (56527)  
 12 or/10-11 (61640)  
 13 \*Communication/ or \*Communication Barriers/ or \*Cultural Competency/ or \*Health Communication/ or \*Manual Communication/ or \*Nonverbal Communication/ (53288)  
 14 ((aid\$1 or communicat\* or connect\* or conversation\$1 or cultural\$2 or discuss\* or emotion\* or empath\* or given or giving or humaniz\* or humanis\* or intellig\* or interactions or interpersonal or language or listen\* or manner or nonverbal\* or prompt\* or provid\* or provision or question\$1 or questioning or report or speech or style\$1 or tone or verbal\$2 or vocabulary or word\$1) and (abilit\* or approach\$1 or capab\* or competen\* or effective or evaluat\* or guide\$1 or improv\* or increas\* or intervention\$1 or optim\* or program\$3 or skill\$1 or strateg\* or technique\$1 or telehealth or telemedicine or train\* or upgrad\*).ti. (114098)  
 15 or/13-14 (159025)  
 16 and/12,15 (5054)  
 17 limit 16 to english language (4612)  
 18 limit 17 to yr="2020 -Current" (827)  
 19 18 and ((meta-analysis or systematic review).pt. or (meta-anal\* or metaanal\* or ((evidence or review or scoping or systematic or umbrella) adj3 (review or synthesis))).ti.) (51)  
 20 limit 17 to yr="2018 -Current" (1388)  
 21 20 and ((controlled clinical trial or randomized controlled trial).pt. or (control or controls or controlled or random\* or trial\*).ti.) (104)  
 22 21 not 19 (104)  
 23 20 and (Case-Control Studies/ or Comparative Study/ or Controlled Before-After Studies/ or exp Evaluation Studies as Topic/ or Follow-Up Studies/ or Interrupted Time Series Analysis/ or Longitudinal Studies/ or Prospective Studies/ or ("case-control" or "before-after" or ((comparative or evaluation) adj3 study) or follow-up or "interrupted time" or longitudinal\$2 or prospective\$2).ti.) (150)  
 24 23 not (19 or 22) (121)

## Ovid EBM Reviews - Cochrane Central Register of Controlled Trials March 2023

Date searched: April 21, 2023

**KQ1**

1 ((chart\* or ((clinical or patient\$1) adj2 (encounter or interaction\$1 or practice or visit\$1)) or DHR\$1 or documentat\* or EHR\$1 or interfac\* or note\$1 or record\$1 or text\* or translat\*) and (automatic or AVR or dictating or dictation or ((digital\* or intelligent or virtual) and assistant\$1) or (digital\* and scribe\$1) or escribe or intelligent or "Nuance Dragon" or SRT or speech or voice or templat\*)).ti. (48)

2 limit 1 to yr="2020 -Current" (18)

**KQ2**

3 (exp \*Nurses/ or exp \*Nurse Practitioners/ or exp \*Physicians/ or exp \*Physician Assistants/) and (\*Nurse-Patient Relations/ or exp \*Patients/ or \*Physician-Patient Relations/ or \*Professional-Patient Relations/) (16)

4 ((clinician\$1 or doctor\$1 or nurse\$1 or nursing or physician\$1 or provider\$1) and patient\*).ti. (6095)

5 or/3-4 (6103)

6 \*Communication/ or \*Communication Barriers/ or \*Cultural Competency/ or \*Health Communication/ or \*Manual Communication/ or \*Nonverbal Communication/ (3781)

7 ((aid\$1 or communicat\* or connect\* or conversation\$1 or cultural\$2 or discuss\* or emotion\* or empath\* or given or giving or humaniz\* or humanis\* or intellig\* or interactions or interpersonal or language or listen\* or manner or nonverbal\* or prompt\* or provid\* or provision or question\$1 or questioning or report or speech or style\$1 or tone or verbal\$2 or vocabulary or word\$1) and (abilit\* or approach\$1 or capab\* or competen\* or effective or evaluat\* or guide\$1 or improv\* or increas\* or intervention\$1 or optim\* or program\$3 or skill\$1 or strateg\* or technique\$1 or telehealth or telemedicine or train\* or upgrad\*)).ti. (14830)

8 or/6-7 (14830)

9 and/5,8 (477)

10 limit 9 to yr="2018 -Current" (186)

11 Trial registry record.pt. (458039)

12 10 not 11 (146)

13 (NCT\* or ISRCTN\*).tn. (355452)

14 12 not 13 (154)

[ClinicalTrials.gov](http://ClinicalTrials.gov)



## Appendix B. Selection Criteria Assessment

Selection Criteria	Assessment
<b>1. Appropriateness</b>	
1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the U.S.?	Yes.
1b. Is the nomination a request for an evidence report?	Yes.
1c. Is the focus on effectiveness or comparative effectiveness?	Yes.
1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic?	Yes.
<b>2. Importance</b>	
2a. Represents a significant disease burden; large proportion of the population	Yes. Despite advantages of the widespread use of EHRs, the introduction of this technology has also led to increases in burdens such as extended work hours, time constraints, increased clerical workload, and disruptions to the patient-provider encounter. <sup>3</sup>
2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population	Yes. Despite advantages of the widespread use of EHRs, the introduction of this technology has also led to increases in burdens such as extended work hours, time constraints, increased clerical workload, and disruptions to the patient-provider encounter. <sup>3</sup>
2c. Incorporates issues around both clinical benefits and potential clinical harms	Yes.
2d. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers	Yes. Despite advantages of the widespread use of EHRs, the introduction of this technology has also led to increases in burdens such as extended work hours, time constraints, increased clerical workload, and disruptions to the patient-provider encounter. <sup>3</sup>
<b>3. Desirability of a New Evidence Review/Absence of Duplication</b>	
3. A recent high-quality systematic review or other evidence review is not available on this topic	Yes. We did not find a recent systematic review addressing the nomination.
<b>4. Impact of a New Evidence Review</b>	
4a. Is the standard of care unclear (guidelines not available or guidelines inconsistent, indicating an information gap that may be addressed by a new evidence review)?	Yes. There are no guidelines pertaining to the nominated topic.
4b. Is there practice variation (guideline inconsistent with current practice, indicating a potential implementation gap and not best addressed by a new evidence review)?	Yes. There is practice variation and no guidelines.
<b>5. Primary Research</b>	
5. Effectively utilizes existing research and knowledge by considering: - Adequacy (type and volume) of research for conducting a systematic review - Newly available evidence (particularly for updates or new technologies)	We found 14 primary studies addressing the nomination out of a review of the entire search yield. A systematic review would be of limited size. ClinicalTrials.gov.: We found four ongoing studies addressing the nomination

Abbreviations: AHRQ=Agency for Healthcare Research and Quality; EHRs=electronic health records.