Clinicians’ Experiences with EHR Documentation and Attitudes Toward AI-Assisted Documentation

National Poll and Stanford Poll

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Background and Objectives

• In September 2019, Stanford Medicine and Google Health conducted a comprehensive study of primary care providers’ (PCP) experiences with documentation in the electronic health record (EHR), and their attitudes toward artificial intelligence (AI)-assisted documentation. This study surveyed 50 PCPs at Stanford Medicine.

• In October 2019, Google Health conducted a similar study surveying 204 PCPs across the United States.

• This report is a synthesis of the findings across both studies.

• The goals for this research were to determine the following:

  1. Providers’ documentation tasks, workflows, and time commitment
  2. Perspectives on the most cognitively helpful and clerically burdensome aspects of documentation
  3. Preferences for AI-enabled assistance with specific documentation tasks
  4. Perspectives and lessons learned from experiences with human scribe-enabled documentation

• This report aims to inform the design of the next generation of AI-enabled documentation technologies.
Methodology

The Stanford survey was conducted online by Stanford Medicine and Google Health in September 2019 among 50 PCPs at Stanford’s primary care clinics.

Participants were recruited via email lists across Stanford’s Division of Primary Care and Population Health in the Department of Medicine.

Quotas were not set, and provider roles included medical doctors and nurse practitioners, with an emphasis on family and internal medicine.

Quantitative data were analyzed with descriptive statistics. Qualitative data were analyzed through inductive thematic analyses performed by four researchers collaboratively.

The national survey was conducted online by Google Health in October 2019 among 204 PCPs.

Recruitment occurred through a Qualtrics panel, with quotas set to reflect the demographics of U.S. adult PCPs and include an even split of female and male providers.

Provider roles and quotas were based on Graham Center data on relative proportions of PCP roles, and included medical doctors, nurse practitioners, and physician assistants, with an emphasis on family and internal medicine.

Quantitative data were analyzed with descriptive statistics. Qualitative data were analyzed through inductive thematic analyses performed by three researchers collaboratively.
Executive Summary
Key Takeaways

Stanford Medicine and Google Health conducted comprehensive surveys of 254 PCPs on their experiences with EHR documentation and perspectives toward AI-enabled documentation assistance. Some key findings include:

1. Documentation assistance relieves providers from the most time-consuming and clerically burdensome aspects of the visit documentation workflow.

2. AI-assisted documentation can be designed to support cognitive processes by freeing providers from the need to perform less cognitively useful tasks.

3. Providers generally prefer AI-enabled assistance with documentation tasks that they perceive to be primarily clerical, as opposed to tasks that are perceived as cognitive work – exceptions provide unique design opportunities.

4. AI-enabled documentation tools should be inconspicuous and provide high quality, accurate notes in a way that promotes efficiency of practice.

5. Human scribe-enabled documentation assistance can save providers time, improve quality of care, and provide accurate, high quality clinical notes, but unlike AI-enabled documentation, requires ongoing training and orientation.
Detailed Findings
I. Documentation Workflow

II. Perspectives on Documentation

III. Preferences for AI-Enabled Documentation

IV. Lessons from Scribe-Enabled Documentation
Providers complete approximately 60% of total EHR work during or immediately after a patient encounter

### Average percentage of EHR work conducted during the following time periods

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-visit</td>
<td>12%</td>
</tr>
<tr>
<td>Visit</td>
<td>31%</td>
</tr>
<tr>
<td>Immediately after visit</td>
<td>27%</td>
</tr>
<tr>
<td>Free moments after visit</td>
<td>10%</td>
</tr>
<tr>
<td>End of day in clinic</td>
<td>10%</td>
</tr>
<tr>
<td>End of day out of clinic</td>
<td>6%</td>
</tr>
<tr>
<td>One day or more after visit</td>
<td>4%</td>
</tr>
</tbody>
</table>

### Average ranking of documentation tasks in order of most time-consuming to least (left to right)

- HPI
- A&P
- Physical exam
- Entering orders or referrals
- Review of systems (ROS)
- Updating family, social, and medical histories
- Searching for info
- Entering diagnosis and billing codes; medication reconciliation and allergies
- Addressing alerts or care gap reminders

Tasks that require a provider to **directly engage with a patient** or **perform cognitive work** are the most time-consuming to document.

Base: All qualified respondents in the national survey (n = 196); close-ended format
Providers start and complete 80% of encounter notes before leaving clinic on the day of a patient's visit.

**Average percentage of notes opened and started during the following time periods**

- **Before patient's visit**: 18%
- **During visit**: 33%
- **Immediately after visit**: 24%
- **Free moments after visit**: 9%
- **End of day in clinic**: 8%
- **End of day out of clinic**: 4%
- **One day or more after visit**: 4%

**Average percentage of notes signed during the following time periods**

- **During visit**: 10%
- **Immediately after visit**: 32%
- **Free moments after visit**: 18%
- **End of day in clinic**: 20%
- **End of day out of clinic**: 10%
- **One day or more after visit**: 10%

Base: All qualified respondents in the national survey (n = 196); close-ended format
Many documentation tasks can be completed before a patient encounter.

PCPs cite these as the most common types of information generated before visits that are included in the note:

- Healthcare maintenance
- Labs and test results
- Consultation notes
- Chief complaint
- Medications
- Family, social and past medical histories

### Documentation tasks that providers complete before a patient visit

<table>
<thead>
<tr>
<th>Task</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review necessary healthcare maintenance</td>
<td>69%</td>
</tr>
<tr>
<td>Add template</td>
<td>62%</td>
</tr>
<tr>
<td>Fill in recent lab and imaging results</td>
<td>57%</td>
</tr>
<tr>
<td>History of present illness (HPI)</td>
<td>28%</td>
</tr>
<tr>
<td>Enter lab and radiology orders</td>
<td>27%</td>
</tr>
<tr>
<td>Enter referrals</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment and plan (A&amp;P)</td>
<td>9%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
</tr>
</tbody>
</table>

Base: National survey respondents who reported opening and starting some % of notes before visits (n = 132); close-ended format

Base: All qualified respondents in the Stanford survey (n = 50); open-ended format
9 in 10 providers summarize next steps for patients after a visit, often the conclusions of their cognitive work.

89% of PCPs currently summarize information for patients towards the end of an encounter.

Information that PCPs summarize or recap for patients:

- Plan: 98%
- Follow-up interval: 79%
- Assessment or diagnosis: 77%
- Return precautions: 71%
- HPI: 26%
- Physical exam: 25%

Base: All qualified respondents in the national survey (n = 196); close-ended format

Base: National survey respondents who currently summarize info for patients (n = 174); close-ended format
Providers experience many challenges in documenting patient encounters

<table>
<thead>
<tr>
<th>Overall documentation completeness and accuracy</th>
<th>Reasoning and clinical decision-making</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I do not want to sign a skeleton note that does not have accurate data, and does not fully capture all the items I discussed with the patient or the latest results”</td>
<td>“Clinical decision-making: I sometimes need to think about the visit a bit to develop my plan before documenting it”</td>
</tr>
<tr>
<td>“Assuring I recall all information exchanged during the visit”</td>
<td>“Finishing assessment and plan for a patient with multiple (5+) problems”</td>
</tr>
<tr>
<td>“Ensuring that I’ve documented all pertinent facts for the HPI”</td>
<td>“If a patient has seen a lot of specialists or is having a lot of other work-up, reviewing specialist notes or records and synthesizing information in my note take a long time”</td>
</tr>
<tr>
<td>“Correcting spelling or grammar”</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Busy clinic workflow</th>
<th>EHR interaction design</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Patients arrive late, leaving sometimes only 15 minutes of a 30-minute visit... I cannot do a good job in the visit and also close the encounter – something has to give”</td>
<td>“Waiting to close the note if someone else is in the chart for vaccines, lab draw, etc.”</td>
</tr>
<tr>
<td>“Having to start and stop and be interrupted by staff with clinical needs, by colleagues who are being friendly, by the next patient that needs to be seen”</td>
<td>“So many painful checkboxes for billing, population health, referrals, etc.”</td>
</tr>
<tr>
<td>“I commonly have paperwork waiting for me which I prioritize over getting my notes done so that these items move forward for patients and my coordinator”</td>
<td>“Finding the ‘***’ indicating sections that haven’t been completed”</td>
</tr>
</tbody>
</table>

Base: All qualified respondents in the Stanford survey (n = 50); open-ended format
II. Perspectives on Documentation

III. Preferences for AI-Enabled Documentation

IV. Lessons from Scribe-Enabled Documentation
Providers view many documentation tasks as both cognitively helpful and clerically burdensome.

Aspects of documentation that PCPs cite as being cognitively helpful:
- Documenting A&P
- Documenting HPI
- Updating problem list
- Documenting physical exam
- Reconciling medication list
- Updating family, social, and past medical histories
- Generating after visit summaries (AVS)
- Reviewing and abstracting historical visit notes and data from **within** medical record

Aspects of documentation that PCPs cite as being clerically burdensome:
- Interacting with the EHR
- Documenting ROS
- Reviewing and abstracting historical visit notes and data from **outside** medical record
- Assigning billing codes to visits

Base: All qualified respondents in the Stanford survey (n = 50); open-ended format
Most clerically burdensome documentation tasks are necessary, but do not require clinician-level expertise or clinical reasoning.

<table>
<thead>
<tr>
<th>Aspects of documentation that PCPs cite as being <strong>cognitively helpful</strong> (Top 4)</th>
<th>Aspects of documentation that PCPs cite as being <strong>clerically burdensome</strong> (Top 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Documenting A&amp;P</td>
<td>1) Documenting A&amp;P</td>
</tr>
<tr>
<td>2) Reviewing and abstracting historical visit notes and data within medical record</td>
<td>2) Reconciling medication list</td>
</tr>
<tr>
<td>3) Documenting HPI</td>
<td>3) Documenting HPI</td>
</tr>
<tr>
<td>4) Updating problem list</td>
<td>4) Documenting physical exam</td>
</tr>
</tbody>
</table>

Providers find documenting A&P **both** highly cognitively helpful **and** clerically burdensome.

Base: All qualified respondents in the Stanford survey (n = 50); open-ended format
Clinical planning and decision-making are cognitive tasks, whereas data and order entry are primarily clerical tasks.

<table>
<thead>
<tr>
<th>A&amp;P</th>
<th>Cognitive work</th>
<th>Clerical work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formulate a narrative of assessment</td>
<td>83%</td>
<td>17%</td>
</tr>
<tr>
<td>Review necessary HCM</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>Enter assessment</td>
<td>49%</td>
<td>51%</td>
</tr>
<tr>
<td>Respond to overdue HCM items</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>Copy an assessment forward</td>
<td>27%</td>
<td>73%</td>
</tr>
<tr>
<td>Enter HCM status</td>
<td>20%</td>
<td>80%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient-directed resources</th>
<th>Cognitive work</th>
<th>Clerical work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine other clinical info patient may need</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>Review and approve after visit summary (AVS)</td>
<td>61%</td>
<td>39%</td>
</tr>
<tr>
<td>Choose educational materials for patient</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>Enter patient instructions</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Provide AVS to patient</td>
<td>14%</td>
<td>86%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orders and referrals</th>
<th>Cognitive work</th>
<th>Clerical work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decide on prescriptions to order</td>
<td>96%</td>
<td>4%</td>
</tr>
<tr>
<td>Decide on labs to order</td>
<td>94%</td>
<td>6%</td>
</tr>
<tr>
<td>Decide on radiology studies</td>
<td>93%</td>
<td>7%</td>
</tr>
<tr>
<td>Plan referrals</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td>Enter diagnoses and procedure codes and qualifiers</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>Enter prescription orders</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>Enter radiology orders</td>
<td>27%</td>
<td>73%</td>
</tr>
<tr>
<td>Enter lab orders</td>
<td>26%</td>
<td>74%</td>
</tr>
<tr>
<td>Enter referrals</td>
<td>19%</td>
<td>81%</td>
</tr>
</tbody>
</table>

Base: All qualified respondents in the national survey (n = 197); close-ended format
History-taking requires a mix of cognitive and clerical work

<table>
<thead>
<tr>
<th>Task</th>
<th>Cognitive work</th>
<th>Clerical work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask follow-up and clarification questions</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>Follow-up on pertinent ROS</td>
<td>87%</td>
<td>13%</td>
</tr>
<tr>
<td>Formulate a narrative of HPI</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>Elicit history from patient</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td>Ask about positive screening questions</td>
<td>71%</td>
<td>29%</td>
</tr>
<tr>
<td>Conduct comprehensive ROS</td>
<td>63%</td>
<td>37%</td>
</tr>
<tr>
<td>Enter structured HPI data</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>Complete HPI section of note</td>
<td>48%</td>
<td>52%</td>
</tr>
<tr>
<td>Ask screening questions</td>
<td>32%</td>
<td>69%</td>
</tr>
<tr>
<td>Enter responses to screening questions</td>
<td>16%</td>
<td>84%</td>
</tr>
</tbody>
</table>

Base: All qualified respondents in the national survey (n = 197); close-ended format
Providers view verification and identification of allergies, current medications, and medical history as primarily clerical tasks.

<table>
<thead>
<tr>
<th>Task</th>
<th>Cognitive Work</th>
<th>Clerical Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify relationship between HPI and medications</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Review family, social, and past medical histories for relevance</td>
<td>65%</td>
<td>36%</td>
</tr>
<tr>
<td>Update family, social, and past medical histories</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>Verify medication list with patient</td>
<td>36%</td>
<td>65%</td>
</tr>
<tr>
<td>Update current list of medications</td>
<td>34%</td>
<td>67%</td>
</tr>
<tr>
<td>Review allergies</td>
<td>31%</td>
<td>70%</td>
</tr>
<tr>
<td>Update allergies</td>
<td>21%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Base: All qualified respondents in the national survey (n = 197); close-ended format
Conducting a physical exam requires cognitive work, though documenting the findings is primarily a clerical task.

Providers’ perceived type of work associated with tasks related to **physical exam**

- **Conduct physical exam**
  - Cognitive work: 98%
  - Clerical work: 3%

- **Review abnormal vitals or physical exam findings**
  - Cognitive work: 90%
  - Clerical work: 10%

- **Enter physical exam findings**
  - Cognitive work: 47%
  - Clerical work: 53%
I. Documentation Workflow

II. Perspectives on Documentation

III. Preferences for AI-Enabled Documentation

IV. Lessons from Scribe-Enabled Documentation
Providers prefer to delegate tasks that most perceive as clerical work

Which one task, across all task categories, providers most want to delegate (Top 10)

Providers' perceived type of work associated with tasks

Base: All qualified respondents in the national survey; close-ended format
In some cases, providers were also open to receiving AI assistance for tasks that most perceive as cognitive work.

<table>
<thead>
<tr>
<th>Task</th>
<th>Percentage of providers who labeled task as clerical work</th>
<th>Percentage of providers who chose to receive AI assistance for task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine other clinical info patient may need</td>
<td>21%</td>
<td>54%</td>
</tr>
<tr>
<td>Ask about positive screening questions</td>
<td>29%</td>
<td>57%</td>
</tr>
<tr>
<td>Review family, social, and past medical histories for relevance</td>
<td>36%</td>
<td>63%</td>
</tr>
<tr>
<td>Identify relationship between HPI and medications</td>
<td>20%</td>
<td>46%</td>
</tr>
<tr>
<td>Choose educational materials for patient</td>
<td>49%</td>
<td>74%</td>
</tr>
<tr>
<td>Conduct comprehensive ROS</td>
<td>61%</td>
<td>70%</td>
</tr>
<tr>
<td>Review necessary HCM</td>
<td>37%</td>
<td>47%</td>
</tr>
</tbody>
</table>

Base: All qualified respondents in the national survey (n = 197); close-ended format
While providers prefer assistance with clerical tasks, assistance may also be helpful for some cognitive tasks, such as reviewing and responding to HCM.
Providers are open to assistance with providing resources to patients, which is perceived as a primarily clerical task.
Nearly 8 in 10 providers perceive entering referrals, radiology orders, and lab orders as clerical work and prefer to conduct these tasks with assistance.
More than 80% of providers prefer to work with an intelligent assistant when asking or entering responses to screening questions.

Providers' selected preferences for assistance with tasks related to **history-taking**

- **Enter responses to screening questions**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

- **Ask screening questions**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

- **Conduct comprehensive ROS**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

- **Complete HPI section of note**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

- **Enter structured HPI data**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

- **Ask about positive screening questions**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

- **Elicit history from patient**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

- **Follow-up on pertinent ROS**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

- **Ask follow-up and clarification questions**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

- **Formulate a narrative of HPI**
  - 0%: Conduct myself (no assistance)
  - 100%: Cooperate with assistant

Providers' perceived type of work associated with tasks

- **Enter responses to screening questions**
  - 0%: Cognitive work
  - 100%: Clerical work

- **Ask screening questions**
  - 0%: Cognitive work
  - 100%: Clerical work

- **Conduct comprehensive ROS**
  - 0%: Cognitive work
  - 100%: Clerical work

- **Complete HPI section of note**
  - 0%: Cognitive work
  - 100%: Clerical work

- **Enter structured HPI data**
  - 0%: Cognitive work
  - 100%: Clerical work

- **Ask about positive screening questions**
  - 0%: Cognitive work
  - 100%: Clerical work

- **Elicit history from patient**
  - 0%: Cognitive work
  - 100%: Clerical work

- **Follow-up on pertinent ROS**
  - 0%: Cognitive work
  - 100%: Clerical work

- **Ask follow-up and clarification questions**
  - 0%: Cognitive work
  - 100%: Clerical work

- **Formulate a narrative of HPI**
  - 0%: Cognitive work
  - 100%: Clerical work

Base: All qualified respondents in the national survey (n = 197); close-ended format
7 in 10 providers perceive updating and reviewing allergies and medications to be clerical work and prefer to perform such tasks with assistance.

Providers' selected preferences for assistance with tasks related to medications and medical history:

<table>
<thead>
<tr>
<th>Task</th>
<th>Conduct myself (no assistance)</th>
<th>Cooperate with assistant</th>
<th>Delegate to assistant and review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update allergies</td>
<td>10%</td>
<td>0%</td>
<td>90%</td>
</tr>
<tr>
<td>Review allergies</td>
<td>10%</td>
<td>0%</td>
<td>90%</td>
</tr>
<tr>
<td>Update family, social, and past medical histories</td>
<td>10%</td>
<td>0%</td>
<td>90%</td>
</tr>
<tr>
<td>Update current list of medications</td>
<td>10%</td>
<td>0%</td>
<td>90%</td>
</tr>
<tr>
<td>Verify medication list with patient</td>
<td>10%</td>
<td>0%</td>
<td>90%</td>
</tr>
<tr>
<td>Review family, social, and past medical histories for relevance</td>
<td>10%</td>
<td>0%</td>
<td>90%</td>
</tr>
<tr>
<td>Identify relationship between HPI and medications</td>
<td>10%</td>
<td>0%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Providers' perceived type of work associated with tasks:

<table>
<thead>
<tr>
<th>Task</th>
<th>Cognitive work</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Update allergies</td>
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<td>90%</td>
</tr>
<tr>
<td>Identify relationship between HPI and medications</td>
<td>10%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Base: All qualified respondents in the national survey (n = 197); close-ended format.
Providers perceive the physical exam as cognitive work, yet 60% prefer to work with an intelligent assistant when entering exam findings in the EHR.
Providers have a strong preference for the automation of patient encounter note documentation, in particular the history of present illness.

Average rank of **documentation tasks** in order of highest priority for automated assistance to lowest (top to bottom):

- Section(s) of the patient encounter note
- Patien-directed resources
- Lab orders
- Prescription orders
- Radiology orders
- Referrals
- Problem list

Average rank of **sections of the patient encounter note** in order of highest priority for automated assistance to lowest (top to bottom):

- HPI
- A&P
- Physical exam
- ROS
- Chief complaint
- Past medical history
- Social history
- Allergies

Base: All qualified respondents in the Stanford survey (n = 50); close-ended format
In order to be acceptable to most providers, an AI assistant must complete tasks within a few minutes.

The **maximum turnaround time** (after the close of an encounter) providers are willing to accept for completion of a delegated task is shown in the diagram.

- **Seconds**: 26% of respondents
- **1 minute**: 20% of respondents
- **A few minutes**: 40% of respondents
- **Within 1-2 hours**: 9% of respondents
- **Within 24 hours**: 5% of respondents

Base: National survey respondents who chose to delegate at least one task to an intelligent assistant (n = 186); close-ended format
Factors that PCPs would consider when deciding to use an AI-enabled documentation tool

**Note quality**
- “Would the HPI really have the same logical flow of a scribe?”
- “Whether the note adequately captures the important parts of the visit”
- “How does the technology incorporate known patient information (medical history, medications, etc.)…”

**System design**
- “How many keystrokes do I still need to complete and is it straightforward?”
- “…whether the system would be “intelligent” and able to evolve/adapt over time to match my style even better”
- “Can I do a combination and still do some of my own charting while the system is working?”

**Time efficiency**
- “How much time it takes to edit later”
- “The new system would have to save me time and allow me to close charts sooner”
- “The speed at which it is generated. Right after the patient visit? Few hours after?”

**Impact on social dynamics**
- “Method of recording. Microphone? Bluetooth on my face? Non-invasive would be preferred”
- “Whether it makes [the patient] uncomfortable or unwilling to share details”
- “If the system can allow me more focused attention on my patient while in the room with them”

Base: All qualified respondents in the Stanford survey (n = 50); open-ended format
I. Documentation Workflow
II. Perspectives on Documentation
III. Preferences for AI-Enabled Documentation

IV. Lessons from Scribe-Enabled Documentation
7 in 10 providers would work with a scribe if cost were not a consideration

If cost were not a consideration, would you work with a scribe? Please explain why.

Providers who responded “yes” value:
- Time savings, efficiency
- Better care for patient
- More accurate, detailed note and EHR

Providers who responded “no” value:
- Personal control, “own way”
- Relationship and encounter with patient – third party is “awkward,” “invasive,” “weird,” “intrusive”
- Own competency – “I’m a fast typer,” “I don’t have difficulty”

Base: All qualified respondents in the national survey (n = 204); close-ended format, open-ended format
Most of the benefits found in working with a scribe can be derived either through a human scribe or an AI assistant.

<table>
<thead>
<tr>
<th>Time savings</th>
<th>Enhanced quality of care</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Far less time spent on the clerical task of documentation”</td>
<td>“Scribes can document HPI and complaints thoroughly on the spot”</td>
</tr>
<tr>
<td>“Entering information that I don’t have to type in”</td>
<td>“Allows improved face to face communication with the patient”</td>
</tr>
<tr>
<td>“Majority of note is completed before end of visit”</td>
<td>“They can remind me of things that were said in the room that I might not initially have remembered to address”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunity to mentor</th>
<th>Improved physician well-being</th>
</tr>
</thead>
<tbody>
<tr>
<td>“It is an opportunity to teach a learner”</td>
<td>“Less panic in the room thinking ‘How am I going to get all of this down’”</td>
</tr>
<tr>
<td>“Mentoring is fun”</td>
<td>“Emotional benefit of not feeling as drained trying to be a doctor and a typist at the same time”</td>
</tr>
</tbody>
</table>

Greatest benefits of working with a scribe reported by PCPs

Base: Stanford survey respondents who indicated having experience working with a scribe (n = 10); open-ended format
Human scribes require ongoing training and orientation, unlike AI-enabled documentation tools

<table>
<thead>
<tr>
<th>Scribes’ limited experience and knowledge</th>
<th>Decreased quality of documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Very steep learning curve using medical terminology”</td>
<td>“In the past, I’ve had [scribes] that either missed details or had a lot of typos”</td>
</tr>
<tr>
<td>“Not understanding what is important to include, exclude”</td>
<td>“While they have been trained, their note structure is often not as organized…”</td>
</tr>
<tr>
<td>“When first working together, the scribe is still learning how to navigate the EHR…”</td>
<td>“…not pulling in as much information as I might prefer to put into the note…”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Added responsibility of teaching</th>
<th>Time spent waiting for scribes’ notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Making sure that scribe is learning something meaningful”</td>
<td>“Sometimes the delay of our scribes finishing the note results in my forgetting details I wanted to add”</td>
</tr>
<tr>
<td>“I usually try to review patients with the scribe before visits”</td>
<td>“…sometimes the scribe may not be as quick as I am, given that I have quite a set routine”</td>
</tr>
</tbody>
</table>

Greatest challenges, initially, of working with a scribe reported by PCPs

Base: Stanford survey respondents who indicated having experience working with a scribe (n = 10); open-ended format
Participant Characteristics
Participant Characteristics: National Poll

### Age/Gender

- 20-29 years: 50%
- 30-39 years: 50%
- 40-49 years: 1%
- 50-59 years: 1%
- 60-69 years: 1%
- 70+ years: 1%

**Gender Distribution**
- Male
- Female
- I identify differently

### Primary Employment Status

- Employee, physician-owned practice: 33%
- Employee, academic or community medical center: 30%
- Owner, physician-owned practice: 24%
- Employee, health plan or corporation: 10%
- Other: 3%

### Post-Graduate Training

- Family medicine MD: 29%
- Internal medicine MD: 26%
- Nurse practitioner degree: 25%
- Physician assistant degree: 16%
- Internal medicine + fellowship MD: 4%
- Internal medicine + pediatrics MD: 4%

### Years Practicing Outpatient Primary Care

- < 10 years: 33%
- 10-20 years: 31%
- 21+ years: 36%

### Practice Setting

- Small private practice (≤ 10 providers): 47%
- Large provider network (> 10 providers): 41%
- Academic medical center: 11%
- Other: 1%

### Daily Patient Volume

- < 20 patients: 38%
- 21-40 patients: 59%
- 41+ patients: 3%
Participant Characteristics: Stanford Poll

Primary Care Specialty
- Family medicine: 46%
- Internal medicine: 42%
- Geriatrics: 8%
- Palliative care: 2%
- Urgent care: 2%

Years Practicing Outpatient Primary Care
- 46%
- 30%
- 24%

Years Practicing at Stanford
- 56%
- 52%
- 14%

Daily Patient Volume
- 62%
- 30%
- 8%
Suggested Citation