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## Reimagining the World of Healthcare: Implementing Artificial Intelligence into Family Medicine Practice

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| Item Type | Presentation;Presentation |
| Authors | Bernier, Julia |
| Download date | 2026-02-09 08:03:39 |
| Item License | http://creativecommons.org/licenses/by/4.0/ |
| Link to Item | https://hdl.handle.net/20.500.14849/1665 |

# Reimagining the World of Healthcare:
## Implementing Artificial Intelligence into Family Medicine Practice

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# Addressing the Problem and Description of AHEC Focus Area

- The AHEC Focus Area is Medical Practice Transformation through the use of AI, addressing the need for more quality, patient-centered treatment and mitigating medical care provider burnout.
- Patients must wait months to be seen by their primary doctor at CVPH Family Medicine Center.
- The majority of patients have multiple comorbidities that must be addressed at each follow-up visit, with only 15-30 minutes to address these concerns.
- Considering the time that a physician typically needs to document the patient's presenting concerns, it can be challenging to address all of them in one visit.
- The use of Abridge, an AI service that records patient visits via audio and formulates a patient note, eliminates the need for the physician to document patient conversations during the visit, allowing more time to focus on the patient's needs.
    - AI promotes positive physician-patient relationships, an intrinsic reward that yields meaningful results.
    - AI allows physicians to spend interactive, quality time with patients and engage them in shared decision-making for treatment (Elwyn, 2023).
    - Abridge takes the notes; physicians provide the medical expertise required to make sound recommendations on treatment.
- Furthermore, there is a national shortage of primary care providers
    - This may be correlated to physician burn-out.
    - A 2024 report revealed that 51% of family medicine providers are burnt out (McKenna, 2024).
    - Of these respondents, the majority (62%) report that bureaucratic tasks (charting, paperwork), contributes the most to their burn-out (Southwick, 2024).

# Public Health Cost and Unique Cost Considerations in Host Community

- According to the Association of American Medical Colleges, the annual physician turnover is 6-7% (Adams, 2024).
- The average annual cost of physician turnover in the United States alone is $4.6 billion (Shasha et al, 2019).
- Based on an impact calculator that factors in the unique number of patients seen per day at CVPH, the number of CVPH providers, and the average time it takes to write a note, the average annual cost of physician turnover and reduced hours is $302 thousand.
- There are indirect health costs to time spent charting instead of treating.
    - When cognitive load is focused on collecting data on a computer screen, the physician is not fully engaged with the patient, potentially missing crucial details.
    - Early detection and screening at the primary care level can mitigate future exponentially higher health costs if a problem goes unnoticed.
- Access to primary care physicians and preventative care reduces costly emergency care visits.
    - The use of primary care as the main source of care could save the US $67 billion annually (Golinkin, 2024).
    - There is a $13 savings for every $1 spent on primary care (Golinkin, 2024).
- Physician burnout impacts public health costs.
    - Physician burnout doubles the chance of negative safety outcomes for patients compared to physicians who are not experiencing burnout (Oakman & Smith-Ramakrishnan, 2023).
    - Burnout exacerbates the health care access crisis and health equity when physicians leave their field. In a rural community like the host community, the absence of enough primary care physicians can be detrimental to the overall well-being of all its stakeholders.
- Patients at CVPH Family Medicine rely on their primary care providers to handle complex problems, as local specialists are limited, and so is their time.
    - Many must travel to the main UVMMC campus in Vermont for certain specialty services.
    - Long-distance travel is challenging for patients who rely on federally-funded transportation, thus they rely on local services.
    - The wait time to access specialists is often not conducive to the immediate treatment required.

# Community Perspective on Issue and Support for Project

## Provider Perspective

(from CVPH Family Medicine Provider who has used Abridge for a few weeks at the time of this interview )

- Describes the software as “life-changing”
- It has given her time back at the end of her day, saving a “tremendous” amount of time writing notes, and reducing “cognitive load.” In fact, even on busy days, she cites that with Abridge, she only has ~10 minutes of work left to complete at the end of the day.
- It allows her to focus more on the patient and less on documentation during the visit, allowing her to feel more present, and less rushed. It helps her remember everything that the patient stated in the visit, and has required her to better articulate the plan with the patient.
- Concerns include that she worries that it will make her a less efficient note-writer when she does have to write a note. She worries that it will be incorporated too early into medical training, as “part of the art of medicine is learning how to generate a note/story from the patient’s story.”
- Based on her interactions, the majority of patients have been understanding of the software use, commenting on how they appreciate that it will make their provider’s life easier.

## Patient Perspective

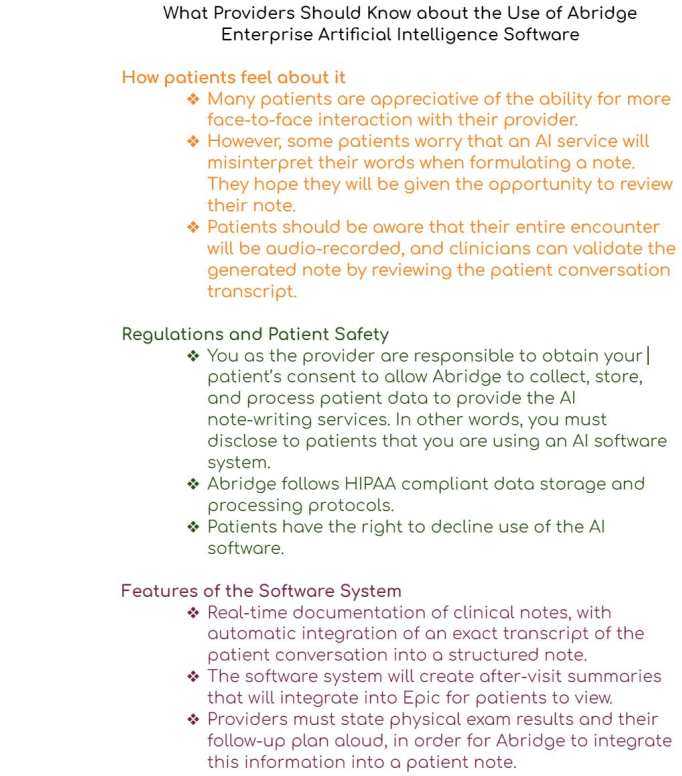
(gathered from 4 patient interviews after experiencing Abridge software in action)

- All patients felt like they were able to have more face-to-face interaction with their provider after Abridge was used.
    - One patient cited that she felt like this provided a greater opportunity to view her facial expressions.
- Some patients appreciated the time that their providers would save by using a note-writing service, acknowledging that it would make their lives easier.
- Many patients appreciate the thought that their physicians will be less burdened by notes.
- While the feedback was overwhelmingly positive, and patients did not cite any major concerns, one patient wondered if this would eventually lead to him solely talking to a computer instead of a human provider.
- Another patient was concerned that the AI technology may misinterpret her words when writing a note: “The only experience I have with AI is talking to Siri, which totally confuses what I’m saying”. She hopes that she would have the opportunity to review her note draft before it has been signed.
    - “The concept of it [Abridge] is very positive, but if there isn’t appropriate communication, things could go haywire”

# Intervention and Methodology

**The Proposal:**

My intervention is a proposal to allow the Abridge Software system to be trialed for the CVPH Family Medicine Residency Program as a pilot study, similar to how the attending physicians initially tested the software. All residents could learn the details of Abridge during one of the residency didactics sessions. The proposed pilot study would start with access for the PGY-2 and PGY-3 residents. By initially only including the second and third year residents, this would address one provider's concern about using this technology too early in medical training, and losing the skill of eloquent note-writing. This would in theory benefit both the residents and the patients, by reducing resident burn-out, which is an area of extreme concern, given the notoriously daunting hours that residents work. Less hours creates the opportunity for less physician fatigue and reduced cognitive load spent on documentation. The increased cognitive space for clinical medicine, and increased opportunity to directly interact with patients, would benefit the hundreds of CVPH patients who primarily see residents.



What Providers Should Know about the Use of Abridge Enterprise Artificial Intelligence Software

How patients feel about it

- Many patients are appreciative of the ability for more face-to-face interaction with their provider.
- However, some patients worry that an AI service will misinterpret their words when formulating a note. They hope they will be given the opportunity to review their note.
- Patients should be aware that their entire encounter will be audio-recorded, and clinicians can validate the generated note by reviewing the patient conversation transcript.

Regulations and Patient Safety

- You as the provider are responsible to obtain your patient's consent to allow Abridge to collect, store, and process patient data to provide the AI note-writing services. In other words, you must disclose to patients that you are using an AI software system.
- Abridge follows HIPAA compliant data storage and processing protocols.
- Patients have the right to decline use of the AI software.

Features of the Software System

- Real-time documentation of clinical notes, with automatic integration of an exact transcript of the patient conversation into a structured note.
- The software system will create after-visit summaries that will integrate into Epic for patients to view.
- Providers must state physical exam results and their follow-up plan aloud, in order for Abridge to integrate this information into a patient note.

*An info-sheet created for residents on patient perspective, patient protection over private information, and important features of Abridge.*

# Results/Response Data

To evaluate the response of the proposed pilot study to integrate Abridge into the residency program, I interviewed one of the PGY-3 residents about the impact he envisioned it could have for him:

***"It is making us as note-writers more efficient. With more efficiency comes less burnout, less compassion fatigue, and our families and our patients will benefit from it."***

When asked about the amount of time he spends note-writing after a full clinic day, he says it could take him up to 3 hours. This is a significant amount of time that could be saved *every day.*

I gathered the informal opinions of four additional residents on the opportunity to use the Abridge software system. Across the board, the proposal was was met with excitement and positive embracement of the potential to have a note-writing tool. Based on hearing the impact from providers who are currently using Abridge, they understand the positive impact it could have on their patient interactions, as well. They also appreciated the information provided by the info-sheet.

The bottom line: Using an AI service such as Abridge to create patient note drafts has the opportunity to dramatically improve the quality of life and well-being of residents and their families. This will likely transfer into less rushed, and more present and compassionate patient interactions.

# Evaluation of Effectiveness and Limitations on the Intervention

**Evaluation of effectiveness:** A theoretical way to evaluate effectiveness of integrating Abridge software into the residency program would be to give eligible candidates a pre- and post-intervention survey evaluating opinions on AI, observations before and after using the software, potential time saved, questions regarding burn-out, and potential concerns. To evaluate the resident opinion of the effectiveness of the info-sheet provided for residents, a question could be implemented into the survey to assess their opinions on whether or not it was helpful.

**Limitations:** One limitation to my intervention proposal is that I do not have the authority to actually implement the AI service into the residency program; I can only provide support and strongly recommend it. I did not have the credentials to speak with the Abridge company to discuss pricing, and therefore do not have information on what this would cost. I also was only able to gather the formal opinions of four patients via interviews, which is a small sample size.

# Recommendations for Future Interventions/Projects

Further interventions or project ideas include:

- Accessing and analyzing the survey data that has been collected from a UVMMC pilot study conducted on Vermont providers using Abridge.
- Gathering more patient perspectives on the use of AI in a clinical setting for note-writing purposes, potentially obtaining quantitative data.
- Conducting a cost-benefit analysis and comparing the cost of the software service to the potentially increased earnings via more accurate and comprehensive billing by AI over humans.
- If Abridge software is able to be implemented into the CVPH Family Medicine Residency Program, a future project could analyze the impact it has made for the residents via pre-intervention and post-intervention surveys.

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