

Swiss Learning
Health System

Optimizing Clinical Practice Guideline Adherence in Primary Care

Policy Brief

Swiss Learning Health System

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Purpose and target group of this document

With this policy brief, we aim to sensitize first and foremost policymakers and advisors, but also other stakeholders of the healthcare system, such as health insurances and practitioners, on the important topic of adherence to clinical practice guidelines in primary care: While scientific evidence indicates that adherence to clinical practice guidelines increases quality of care, they are not consulted by all physicians for all patients.

Potential reasons for this underuse are well-researched. However, solution approaches have not been investigated as much, especially in the Swiss context. Thus, we conducted a stakeholder dialogue bringing together various interest groups to conceptualize first solution approaches aimed at overcoming barriers to the use of clinical practice guidelines in Switzerland.

This policy brief outlines the background regarding clinical practice guidelines and provides concise recommendations based on the solution concepts developed during the stakeholder dialogue. Appendices for further reading include detailed information on the methodology and results of the stakeholder dialogue, as well as the current state of the literature regarding barriers to guideline adherence. Potential solutions for stronger clinical practice guideline use are also presented.

Ultimately, the solutions outlined in the following pages aim to support policymakers and advisors in developing meaningful policies and/or funding programs directed at increasing clinical practice guideline adherence.

Background

Clinical practice guidelines synthesize current medical evidence on how to organize and deliver health services for a given condition effectively [1, 2]. They are designed to improve the quality of care and reduce unjustified individual variation in clinical practice [3]. These guidelines, developed through a synthesis of the best available evidence, aim to standardize clinical practices, improve patient outcomes and provider performance, and enhance the overall quality of healthcare delivery [4].

Several studies have shown how adherence to clinical practice guidelines improves healthcare outcomes such as survival [5, 6], mortality [7] and in-hospital complications [8]. Studies have also shown how guideline adherence enhances quality of care [9] and increases cost-effectiveness [8, 10, 11]. Lastly, integrating clinical practice guidelines into clinical practice has been shown to reduce variations in treatment approaches across healthcare settings [12, 13].

Despite their advantages, adherence to clinical practice guidelines remains suboptimal both internationally [10, 14], and in the Swiss context [15, 16]¹.

The fact that guidelines are not always translated into practice [17, 18] shows that efforts are needed to promote awareness, acceptance, adoption, and adherence to guidelines [1]. Given that adoption and adherence to clinical practice guidelines are low even when awareness and agreement are high, special attention should be given to the implementation of clinical practice guidelines [1, 19].

In summary, clinical practice guidelines represent a valuable source of rigorously collected and evaluated medical knowledge, yet their translation into practice requires improvement. Given guidelines' substantial potential for quality improvement in healthcare delivery, bridging the gap between evidence and practice is imperative.

¹ Pressing implementation challenges are guideline characteristics (e.g., variety of information), guideline volume and diversity, resistance to change clinical practice, a lack of resources dedicated to guideline promotion, daily time constraints and workload pressure, and general applicability to individual patients and conflicts with patients' preferences and values. For more information see the provided references and Appendix D.

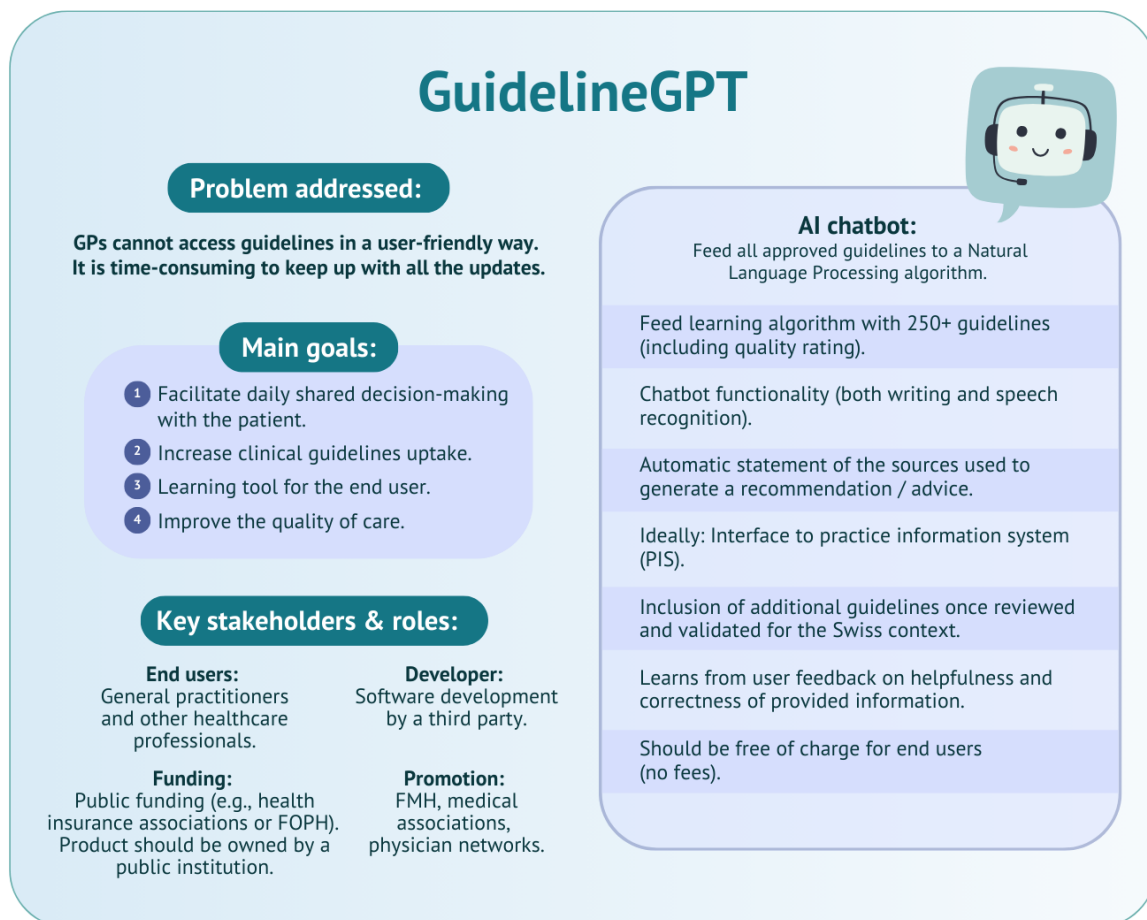
Recommendations

Recognizing key barriers to guideline implementation and adherence in practice, a stakeholder dialogue was organized to develop recommendations for overcoming them.

During the dialogue, three solution concepts emerged and were further refined through two rounds of feedback surveys with dialogue participants and additional stakeholders:

1) **GuidelineGPT: An AI chatbot to facilitate easy access to guidelines.**

GuidelineGPT would leverage an AI chatbot that would enable healthcare professionals to ask specific questions encountered in daily practice (e.g., what medication is effective as third substance for a diabetes patient already taking two other substances). GuidelineGPT would then answer this question based on knowledge learned from clinical practice guidelines.



2) SwissGPP: A program to promote guidelines within GP networks.

SwissGPP proposes supported discussions about guidelines within quality circles, ensuring guidelines are practical and integrated into the workflow.

SwissGPP – Guideline Promotion Program

Problem addressed:

GPs handle complex patient cases and must adhere to full schedules daily.

Guidelines do not reduce decision complexity and do not build trust. They are not user-friendly and cannot be seamlessly integrated into the daily clinical workflow.

Main goals:

- 1 Reduce the complexity of guideline use during consultation with patients.
- 2 Increase trust of GPs in guidelines.
- 3 Support discussions in GP networks and GP's participation in guideline development.

Key stakeholders & roles:

Primary care / managed care networks:	Healthcare insurance companies:
Organize discussions in quality circles and control the use of guidelines within a network.	Provide financial incentives to networks to promote the program.

Promotion program:


Increase participation and cooperation within primary care networks and quality circles.

The program should be organized by primary care / managed care networks to support learning processes within them.

Taking mediX guidelines as an example, provide an opportunity for continuous discussion of the guideline contents across different topics in internal medicine to ensure that physicians are up-to-date with the knowledge and can orient themselves quickly during consultations.

These regular discussions can happen in quality circles, with an option to use existing forms of guidelines or to develop their own.

These discussions should be financially supported by healthcare insurance companies, providing incentives for networks.



3) GLANCE: A national service to unify and simplify guidelines for practical use.

This solution focuses on creating a national team to unify, summarize, and adapt guidelines for primary care.

GLANCE - GuideLines: A National service to make Complex Easy

- **National working group:** Create a national working group consisting of experts from different regions to simplify, make accessible, and integrate guidelines into GPs' daily practice through a technological solution.
- **Review:** Explore existing practices to identify good practices that may be unknown, considering the perspectives of doctors and patients, insights from other specialists, and the experiences of other countries.

Problem addressed:


Clinical guidelines are too voluminous, yet their content must be easily accessible, including during consultations.

Regional guidelines are not integrated, causing a lack of awareness of each other's work among different regions.

Main goals:

- 1 Bridge the gap between evidence-based medicine and GPs.
- 2 Summarize existing guidelines.
- 3 Regularly update existing guidelines.
- 4 Make guidelines available at one place.
- 5 Optimize (adapt) the guidelines for daily needs of GPs and their patients.
- 6 Make working with guidelines a user-friendly experience.
- 7 Provide space for shared decision-making available for patients.

Service product:



Offers updates on what is new out there.

A platform to find answers to daily practice questions.

Offers information that is the most relevant among available.

Considers patient applicability.

Adds variables like age, price, treatment regime to the service.

Need for organized, summarized, and applicable content.

Involvement of patients from the beginning for better impact.

Consideration of cost and practicality in treatment options.

Emphasis on user comfort and integration of shared decision-making tools.

Key stakeholders & roles:

GPs:	GP-scientists:	Specialists:	Advisors:	Patients:	Associations:
Real practitioners that will be the majority of the team.	Are also needed but they are not a majority.	From different fields.	From various sectors (for example, finance perspective).	To review – to be able to impact.	To disseminate and spread.

Although these solution concepts are still in the early development stages, they offer promising avenues by targeting identified obstacles and incorporating the end-user perspective. This approach enhances their potential effectiveness upon implementation. For more details, including challenges and enablers for implementation, please refer to Appendix C.

While the problems of clinical practice guideline adherence are well understood, our stakeholder engagement process was able to deliver first solution concepts to start a process of solution development in Switzerland, which can be summarized by the following recommendations:

- I **Incentivize innovation** through competitive private and public funding programs and issue calls for proposals focused on improving clinical practice guideline adherence to develop further proposed solutions involving key stakeholders such as GPs, GP networks, GP researchers, and software developers.
- II **Address identified barriers for implementation by changing existing policies**, such as legal obstacles hindering the development of a decision support tool like GuidelineGPT.
- III **Establish organizational structures and feedback loops** to allow for regular updates to guidelines and digital tools based on real-world data and user experiences. This will ensure that guidelines remain relevant and practical for daily medical practice.
- IV **Develop and enhance digital tools and platforms** to simplify the use of guidelines in everyday medical practice. Adopt advanced technologies like large language models for summarization and translation while integrating these solutions into existing healthcare systems to ensure seamless use during clinical workflows.
- V **Incentivize ongoing learning and professional exchanges** about guidelines among GPs and other healthcare providers. Use established structures like GP networks, quality circles, and digital platforms to encourage professional engagement in guideline development and dissemination. Support training sessions and regular discussions to keep healthcare professionals informed and involved.

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Appendix A: Summary of the stakeholder dialogue

Background and aim

Clinical practice guidelines are developed to standardize, assure, and improve the quality of care by providing practitioners with the most recent evidence-based recommendations for clinical practice. However, guideline adherence is often inadequate, impeding treatment standardization and potentially leading to suboptimal patient outcomes.

In the following Appendices, we present the development of three solution concepts to overcome common barriers to guideline adherence, including guideline complexity, accessibility, and a lack of integration into daily clinical workflows.

Methodological approach

To develop solution concepts, we conducted a stakeholder dialogue as a one-day workshop with a group of 13 participants representing various stakeholder groups: general practitioners (GPs), software providers, professional medical associations, health insurances, cantonal administration, the pharmaceutical industry, research, and patients. Participants were organized in three groups, working independently on individual solution concepts.

The workshop followed a co-creation approach and employed the Design Thinking method. Solution concepts were further refined after the workshop by the research team based on two rounds of feedback surveys.

Results

Stage I – Empathize: Results were congruent with findings from the literature. Participants underscored the need for guidelines to be user-friendly, up-to-date, and practically applicable, while respecting GPs' autonomy and professional judgment. There was a clear demand for ongoing education, collaboration, and innovative tools to facilitate the integration of guidelines into daily clinical practice. Moreover, participants highlighted the importance of patient preferences, cooperation, and adherence.

Stages II and III – Define and Ideate: Participants summarized main problems in five problem statements for which they developed eleven potential solutions. Each group selected at least one potential solution to refine in the Conceptualize stage.

Stage IV – Conceptualize: Participants developed three core concepts:

- 1) GuidelineGPT: An AI chatbot to facilitate easy access to guidelines.
- 2) SwissGPP: A program to promote guidelines within GP networks.
- 3) GLANCE: A national service to unify and simplify guidelines for practical use.

Conclusion

The workshop underscored the importance of ensuring that clinical practice guidelines are both practical and accessible to seize their full potential. Results indicate that physicians must play an integral part in refining the solutions outlined here, but other stakeholders, such as software companies and policymakers, must also support their development. We invite these stakeholder groups to refine, adopt, and implement the proposed and similar concepts.

Please refer to the following sections for details regarding background, methods, and results.

Appendix B: Methodology for the stakeholder dialogue and policy brief development

The stakeholder dialogue followed the principles of co-creation, which emphasize collaborative and creative problem-solving through the involvement of a diverse group of stakeholders [20]. Co-creation was selected as the guiding approach to formulate actionable recommendations to address suboptimal guideline adoption. Co-creation aims at enhancing the understanding of a problem and developing necessary tools, products, or ideas to resolve it [21].

Design Thinking was employed as a co-creation method. This iterative methodology is used to (re-)frame problems and co-create implementable solutions using visual thinking and prototyping [22]. It prioritizes empathy for users of a service or product and promotes rapid prototyping based on user-driven insights [23]. The process involves five sequential stages: Empathize, Define, Ideate, Prototype, and Test [22]. For this stakeholder dialogue, the aim was to generate solution concepts and recommendations rather than creating physical prototypes, so the *Prototype* stage was renamed to *Conceptualize*.

The stakeholder dialogue was conducted as a one-day workshop with 13 participants representing various stakeholder groups, including GPs, software providers, professional medical associations, the health insurance sector, cantonal administration, the pharmaceutical industry, research, and patients.

Divided into three groups with mixed stakeholder profiles, participants began the Design Thinking process with the *Empathize* stage by creating empathy maps to explore the perspectives of guideline end-users, namely GPs. Guiding questions were: What does the end-user say about guidelines in their daily operations? What might the end-user be thinking about when using or ignoring guidelines? What actions does the end-user take in relation to guidelines? What emotions does the end-user feel when interacting with guidelines? Following this, the groups moved to the *Define* stage, reviewing insights from their Empathy Maps to create problem statements. In the *Ideate* stage, groups generated a wide range of ideas to address the defined problem statements. Finally, in the *Conceptualize* stage, participants prioritized and developed selected ideas into tangible, simplified versions of products, interventions, services, or strategies. Finally, groups presented their concepts and gathered feedback in the *Test* stage.

Each group discussion was guided by a facilitator and a note-taker. Data was collected through audio recordings of the discussions and presentations, as well as through notes and visual presentations on flipcharts completed at each stage of the Design Thinking process. The facilitators and note-takers analyzed all data to complete group discussion protocol templates. These templates were then used to derive the workshop results (cf. next section for results of stages I through IV).

After the workshop, the project team analyzed the group work results and developed a Policy Brief outlining the proposed solutions. Feedback on the initial version of the Policy Brief was collected through an online survey, which included questions about the document's structure, content, and its accuracy in capturing the co-created solutions and considerations for their implementation. Based on the survey results, the Policy Brief was revised and shared with a broader group of stakeholders, who provided additional feedback through a second online survey. The document was then further refined and finalized based on the stakeholders' input.

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Appendix C: Detailed results of the stakeholder dialogue

Stage I – Empathize

The Empathize stage provided a comprehensive understanding of stakeholders' perspectives on guidelines in GPs' daily clinical practice and perceived barriers to their effective implementation, expressed through their views, thoughts, actions, and feelings.

Results from this stage were congruent with findings from the literature. Participants in all three groups underscored the need for guidelines to be user-friendly, up-to-date, and practically applicable while respecting the autonomy and professional judgment of GPs. There was a clear demand for ongoing education, collaboration, and innovative tools to facilitate the integration of guidelines into everyday clinical practice. Moreover, participants highlighted the importance of patient preferences, cooperation, and adherence.

Below, we provide a detailed summary along the guiding questions of the Empathize stage.

Say: What does the end-user say about the guidelines in their daily practice?

Across all groups, there was a clear consensus that guidelines need to be concise, practical, and easily accessible. The need for a unified, constantly updated platform for accessing guidelines was also highlighted. Participants noted that GPs need guidelines to be tailored to their time-constrained environments and to offer quick, actionable insights rather than lengthy scientific explanations. As specific guidelines are usually created by specialists, end-users call for guidelines that can accommodate the practical complexity of patient cases, especially multi-morbid patients, where they often encounter conflicting recommendations from different guidelines for various conditions. Participants also stressed the importance of shared decision-making with the patient when it comes to guidelines, since patients often inform themselves online and challenge GPs' recommendations.

Think: What might the end-user be thinking about when using or ignoring the guidelines?

Some described guidelines as being rigid and not fully reflective of the dynamic nature of clinical practice. While guidelines were recognized as valuable sources of expert knowledge, there was a belief that guidelines can be outdated and overwhelming in volume. The fragmentation in guideline repositories, particularly noted in the Swiss context, exacerbates this issue. Moreover, participants underscored the importance of guidelines being evidence-based yet digestible while still avoiding excessive simplification. It was also acknowledged that patient preferences and subjective factors complicate guideline implementation, especially in cases where patients refuse specific treatments or when managing comorbid conditions.

Do: What actions does the end-user take in relation to the guidelines?

It was observed that GPs frequently consult specialists directly, as it is often faster than scrolling over lengthy guidelines. Some participants reported that GPs tend to skim short forms of guidelines and cross-reference them quickly with patient data to assess applicability. A preference emerged for being involved and actively participating in the guideline formulation process to ensure relevance and practicality. Additionally, continuous education through

congresses, quality circles, and further education sessions were mentioned as integral to staying updated. However, these activities are often time-consuming and typically occur outside of regular working hours, increasing GPs' out-of-office workload.

Feel: What emotions does the end-user feel when interacting with the guidelines?

The emotional responses to guidelines are mixed. There was a prevalent feeling of being overwhelmed by the volume and complexity of guidelines. It was noted that GPs might question whether these guidelines are integral to their professional identity, and instead enjoy a sense of freedom when their use is not strictly enforced. Frustration might arise from the lack of easy accessibility and practical applicability, coupled with the burden of navigating numerous and sometimes conflicting guidelines. Despite these challenges, a strong sense of responsibility on the part of the GPs emerged to provide the best patient care, with GPs being thought to feel more engaged with guidelines when they were part of collaborative networks or quality circles.

Additional findings

The discussions confirmed that GPs are the primary end-users of clinical practice guidelines, but other co-users include specialists, medical students, APNs, patients, and caregivers. There is resistance to top-down implementation approaches, reflecting a cultural preference for professional autonomy and independence. The process of guideline implementation was seen as a dual-track system: one track focusing on the creation, review, publication, and revision of guidelines, and the other on educating and cultivating a culture of guideline use. Effective promotion of guidelines requires more than just publication; it involves integration within quality circles and continuous feedback loops.

From the IT perspective, the legal complexities in embedding guidelines within software tools, necessitating external validation and frequent updates, were pointed out. Moreover, algorithms like antibiocllic.com, used effectively in France, were mentioned as potential models for simplifying guideline application in Switzerland, though current adoption remains limited.

Stages II and III – Define and Ideate

In the Define stage, the three groups defined concrete problem statements based on the brainstorming of the Empathize stage. In the Ideate stage, the three groups generated a variety of potential solutions aimed at addressing the problem statements identified in the previous Define stage. Table 1 below summarizes the problem statements and proposed solutions developed during the stakeholder dialogue per group. Please note that we deliberately present the highest prioritized problem statements and proposed solutions per group regardless of thematic overlap between groups.

Table 1. Summary of Stages II and III – Define and Ideate

Problem statement (Define)	Proposed solutions (Ideate)	Group
GPs cannot access guidelines in a user-friendly way. It is time-consuming to keep up with updates.	<p>GuidelineGPT: Feed all approved guidelines to a Natural Language Processing algorithm. Create a chatbot that answers daily clinical questions with knowledge gained from clinical practice guidelines and reports the sources of given answers.</p> <p>One Platform: Create a central platform to access all clinical guidelines and resources.</p>	Group 1
Guidelines do not support or consider shared decision-making.	<p>Patient Education by GPs: Reinforce the role of GPs to educate patients by providing clear and detailed information about guidelines and gather feedback from patients to improve understanding and adherence of guidelines.</p> <p>Patients’ adherence to guideline-directed therapy: Monitor patients’ therapy adherence through tests and wearables.</p> <p>Feedback mechanism: Incorporate a system to collect feedback from patients and GPs about the usefulness of the guidelines.</p>	
GPs handle complex patient cases and must adhere to full schedules daily. Guidelines do not reduce decision complexity and do not build trust. They are not user-friendly and cannot be seamlessly integrated into the daily clinical workflow.	<p>Participation and cooperation: Increase team-based medicine within primary care networks and quality circles. Better organize GPs within primary care networks. Develop guidelines bottom-up rather than top-down. Promote guidelines through peer dissemination to build trust.</p> <p>Training and capacity building: Encourage GPs to take on leadership roles in guideline development. Focus on ongoing education, enhancing communication skills, and didactics to ensure GPs feel involved and valued. Train physicians on the benefits, application, and limitations of guidelines within the complexities of daily practice.</p> <p>Usability and access: Implement interactive software that guides users and highlights key elements, such as red flags, rather than just presenting information passively. Structure and unify guidelines into a standardized format to facilitate easier implementation. Establish a central storage location for easy access to guidelines.</p> <p>Research: Conduct research to identify and address gaps in guideline implementation. Measure treatment quality to demonstrate that adherence to guidelines improves patient outcomes.</p>	Group 2
Clinical guidelines are too voluminous, yet their content must be easily accessible, including during consultations.	<p>National working group: Create a national working group consisting of experts from different regions to simplify, make accessible, and integrate guidelines into GPs’ daily practice through a technological solution.</p>	Group 3
Regional guidelines are not integrated, causing a lack of awareness of each other’s work among different regions.	<p>Review: Explore existing practices to identify best practices that may be unknown, considering the perspectives of doctors and patients, insights from other specialists, and the experiences of other countries.</p>	

Notes: Table cells with blue shading indicate the proposed solutions prioritized for prototyping in Stage IV.

In the Define stage, the following problem statements were derived but not further explored in the Ideate stage:

- I GPs are not aware of the gap between the evidence provided by guidelines and their practical application.
- II Guidelines are not always applicable to the specific patient context encountered during daily clinical situations.
- III Swiss physicians may not fully engage with or trust guidelines due to a lack of involvement in their development and a lack of transparency in how guidelines are developed.
- IV Legal requirements and responsibilities make the development of software that could integrate guideline contents difficult.
- V Top-down guideline implementation encounters difficulties in Switzerland due to cultural differences. These challenges are especially pronounced in the German-speaking regions, which prioritize autonomy, making uniform implementation and acceptance of centralized guidelines problematic.

Stage IV – Conceptualize

In Stage IV, each group developed one core concept addressing at least one problem statement and proposed solution from Stages II and III. Across all groups, the core concepts focus on improving the accessibility and practicality of clinical practice guidelines. Group 1 proposed an AI-driven platform for easy access and decision support (“GuidelineGPT”). Group 2 conceptualized a promotion program to facilitate discussions and trust within GP networks (“SwissGPP”). Group 3 advocated for a national service to centralize, summarize, and regularly update guidelines (“GLANCE”).

Below, we provide descriptions of these solutions along with insights on potential challenges and enablers to their implementation gathered from the discussions during the stakeholder dialogue and feedback surveys.

Group 1: GuidelineGPT

GuidelineGPT aims to solve the problem of guideline accessibility and usability by leveraging an AI chatbot that would enable healthcare professionals to ask specific questions encountered in daily practice (e.g., what medication is effective as third substance for a diabetes patient already taking two other substances). GuidelineGPT would then answer this question based on knowledge learned from clinical practice guidelines.

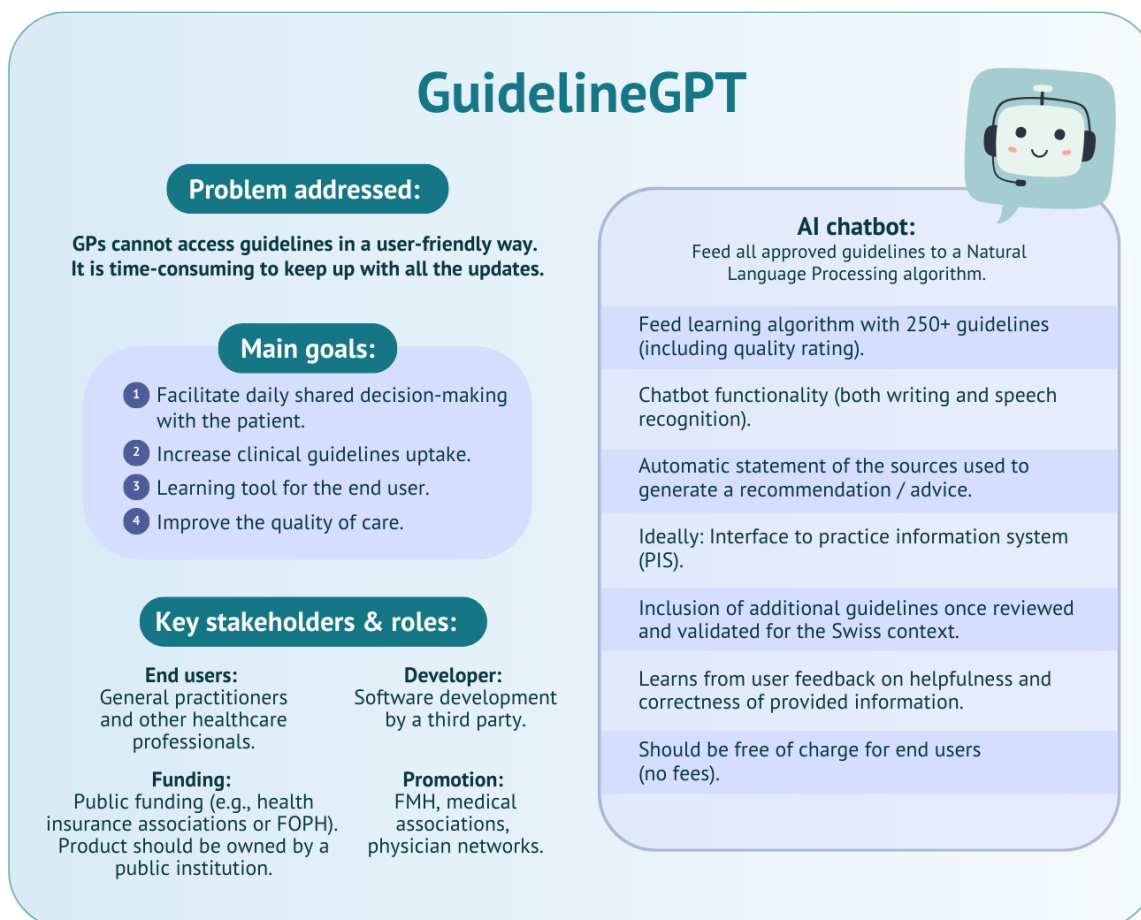


Table 2. Challenges and enablers for the implementation of GuidelineGPT.

Enablers	Challenges
<p>Hyperlinked references: Providing clear references to the source guidelines and sections within responses, with convenient hyperlinks, can help build trust by allowing GPs to verify and read the original guidelines.</p>	<p>Reliability and quality: GPs may have difficulty trusting AI due to concerns over the accuracy of recommendations, potential errors, and the lack of transparency in how information is derived.</p>
<p>Real-time updates: The tool’s ability to draw from a centralized content base can enable quick updates on guideline changes. A monthly overview of key guideline changes could help streamline the updating process. There is a need for an organization or team to curate and validate the data used by GuidelineGPT.</p>	<p>Data curation: It is not clear how the tool can ensure that it reflects the most recent changes in guidelines, which could hinder GPs from staying up to date. Deriving accurate information from multiple, potentially conflicting guidelines can be challenging.</p>
<p>Promotion of the tool through training programs and conferences can help raise awareness and encourage adoption among healthcare providers.</p>	<p>Engagement: A digital tool alone is not enough; additional efforts like quality circles are needed to motivate GPs to engage with guidelines. There is also concern that relying on AI may undermine the ability of GPs to make independent decisions.</p>
<p>Funding opportunities: The substantial investment in AI technologies suggests that funding for implementing solutions like GuidelineGPT is likely available.</p>	<p>Potential misalignment with professional recommendations: GPs often prioritize guidelines endorsed by their professional societies, which could limit the tool’s effectiveness if its updates are not aligned with these recommendations.</p>
<p>Potential integration with Practice Information Systems (PIS): If the tool is integrated into the existing PIS, it would significantly enhance its feasibility by making it more accessible for GPs during their routine work.</p>	<p>Integration with existing systems: The digital infrastructure in Swiss GP practices is diverse, complicating Guideline GPT integration into the Practice Information Systems (PIS).</p>
<p>Similarity with ChatGPT: The familiarity of ChatGPT can increase the likelihood of healthcare professionals being positive about using a similar tool for clinical guidelines.</p>	<p>High daily workload of GPs could limit their willingness to adopt and routinely use a new tool.</p>
<p>Ease of access: The ability to access all clinical guidelines through a single tool offers convenience, reducing the need to remember or search for different guidelines individually.</p>	<p>Generation gap and digital literacy: Resistance to adopting AI tools may arise from a generational divide in digital literacy, with older GPs being less comfortable with AI solutions.</p>
<p>Language translation: The tool’s ability to easily translate guidelines into multiple languages increases accessibility across diverse regions.</p>	<p>Complex patient cases: AI responses may struggle to address complex patient situations, limiting their usefulness in nuanced medical cases.</p>
	<p>Legal complexities arise when embedding guidelines in software due to the need to prove source accuracy to authorities and revalidate the tool in case of updates in guidelines.</p>

Group 2: SwissGPP – Guideline Promotion Program

This solution puts emphasis on reducing complexity and building trust through regular, supported discussions within quality circles, ensuring guidelines are practical and integrated into the workflow.

SwissGPP – Guideline Promotion Program

Problem addressed:

GPs handle complex patient cases and must adhere to full schedules daily.

Guidelines do not reduce decision complexity and do not build trust. They are not user-friendly and cannot be seamlessly integrated into the daily clinical workflow.

Main goals:

- 1 Reduce the complexity of guideline use during consultation with patients.
- 2 Increase trust of GPs in guidelines.
- 3 Support discussions in GP networks and GP's participation in guideline development.

Key stakeholders & roles:

<p>Primary care / managed care networks:</p> <p>Organize discussions in quality circles and control the use of guidelines within a network.</p>	<p>Healthcare insurance companies:</p> <p>Provide financial incentives to networks to promote the program.</p>
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Promotion program:

Increase participation and cooperation within primary care networks and quality circles.

The program should be organized by primary care / managed care networks to support learning processes within them.

Taking mediX guidelines as an example, provide an opportunity for continuous discussion of the guideline contents across different topics in internal medicine to ensure that physicians are up-to-date with the knowledge and can orient themselves quickly during consultations.

These regular discussions can happen in quality circles, with an option to use existing forms of guidelines or to develop their own.

These discussions should be financially supported by healthcare insurance companies, providing incentives for networks.



Table 3. Challenges and enablers for the implementation of SwissGPP.

Enablers	Challenges
<p>Integration into routine professional discussions and meetings: Incorporating SwissGPP into conferences, network discussions, and routine group meetings can normalize its use and increase engagement, especially among younger GPs.</p>	<p>Time constraints: The program may require significant time investment to engage with guidelines, which could be a challenge given the already high workload of GPs.</p>
<p>Collaboration with key healthcare institutions, such as hospitals, medical societies, managed care organizations, primary healthcare networks and insurance companies, can support the program's implementation through established connections and credibility.</p>	<p>Engagement and outreach: Reaching and maintaining engagement with all GPs, especially those in rural or remote areas, poses a significant challenge. Independent family physicians outside organized networks are harder to reach.</p>

<p>Endorsement through major professional organizations: Endorsement by major bodies like MFE is likely to lead to greater acceptance than if the guidelines are solely promoted by local networks.</p>	<p>Availability of resources: The success of SwissGPP depends on whether it is widely accepted by GPs and if sufficient financial and human resources are allocated for its implementation.</p>
<p>Learning opportunity: Discussing guidelines within groups allows GPs to learn from each other, which is crucial for reducing decision-making complexity and building trust.</p>	<p>Trust among GPs: The effectiveness of SwissGPP depends on fostering trust among GPs to openly discuss uncertainties and learn from each other, which could be difficult to achieve.</p>
<p>Existing quality circles: The presence of existing quality circles can serve as examples of collaboration, providing the foundation for implementing SwissGPP.</p>	<p>Existing quality circles: Successful approaches, such as mediX Guidelines, could serve as models for adoption if their effectiveness and adaptability are thoroughly evaluated. Achieving similarly high levels of acceptance and visibility for SwissGPP will be challenging and will demand substantial effort.</p>
<p>Professional monitoring and incentives: Providing professional monitoring and guidance for quality circles, along with incentives for participants, can encourage active and sustained engagement.</p>	<p>Imperative guidelines that are too topic-specific or overly prescriptive may lead to conflicting recommendations and frustration among GPs, making it difficult for them to prioritize. Moreover, the priorities of guideline developers may not match the needs of quality circles’ participants, leading to misalignment and lower engagement.</p>
<p>User-friendly format: Providing guidelines in an easily accessible format, in a language familiar to GPs, ideally free or included in existing memberships (like FMH), is essential for encouraging adoption.</p>	<p>Fragmentation of the Swiss healthcare system and the existence of local guidelines and initiatives create complexity in establishing a unified guideline program.</p>

Group 3: GLANCE - GuideLines: A National service to make Complex Easy

The proposed solution's core concept is to create a national team dedicated to unifying, summarizing, and adapting clinical guidelines for primary care, addressing issues of diverse sources, complexity, and limited applicability in daily practice.

GLANCE - GuideLines: A National service to make Complex Easy

- **National working group:** Create a national working group consisting of experts from different regions to simplify, make accessible, and integrate guidelines into GPs' daily practice through a technological solution.
- **Review:** Explore existing practices to identify good practices that may be unknown, considering the perspectives of doctors and patients, insights from other specialists, and the experiences of other countries.

Problem addressed:


Clinical guidelines are too voluminous, yet their content must be easily accessible, including during consultations.

Regional guidelines are not integrated, causing a lack of awareness of each other's work among different regions.

Main goals:

- 1 Bridge the gap between evidence-based medicine and GPs.
- 2 Summarize existing guidelines.
- 3 Regularly update existing guidelines.
- 4 Make guidelines available at one place.
- 5 Optimize (adapt) the guidelines for daily needs of GPs and their patients.
- 6 Make working with guidelines a user-friendly experience.
- 7 Provide space for shared decision-making available for patients.

Service product:



Offers updates on what is new out there.

A platform to find answers to daily practice questions.

Offers information that is the most relevant among available.

Considers patient applicability.

Adds variables like age, price, treatment regime to the service.

Need for organized, summarized, and applicable content.

Involvement of patients from the beginning for better impact.

Consideration of cost and practicality in treatment options.

Emphasis on user comfort and integration of shared decision-making tools.

Key stakeholders & roles:

GPs:	GP-scientists:	Specialists:	Advisors:	Patients:	Associations:
Real practitioners that will be the majority of the team.	Are also needed but they are not a majority.	From different fields.	From various sectors (for example, finance perspective).	To review – to be able to impact.	To disseminate and spread.

Table 4. Challenges and enablers for the implementation of GLANCE.

Enablers	Challenges
<p>Centralization & independence: Establishing a single, independent national platform could increase acceptance by offering a unified source of guidelines accessible to all healthcare providers.</p>	<p>Reaching consensus: It will be hard to centralize digital access to guidelines and reach a national consensus on the integration of regional guidelines due to conflicts of interest and differing experiences.</p>
<p>Collaboration with key stakeholders: Joint initiatives involving scientific medical societies, insurers, medical associations, and government agencies can provide strong support.</p>	<p>Unclear platform structure: The feasibility of implementing GLANCE is uncertain due to a lack of clarity regarding the platform’s structure and its financial model. A complex or overly general platform may discourage frequent use by GPs.</p>
<p>Participation of practitioners and experts: Including real practitioners in the working group can help to ensure that guidelines are practical and applicable across regions. Involving experts trusted within the medical community can enhance the trustworthiness of the platform.</p>	<p>Availability of resources: The success of GLANCE depends on the availability of sufficient financial and personnel resources.</p>
<p>Potential integration with GuidelineGPT: Combining the capabilities of GLANCE and GuidelineGPT was seen as a promising approach to increase effectiveness and streamline access to simplified guidelines. However, human oversight for quality control is essential.</p>	<p>Top-down national approach: A top-down approach may not align well with the Swiss cultural context, where decentralized and regionally adapted solutions are often preferred.</p>
<p>Inclusion in curriculums: Integrating GLANCE into medical training curriculums and collaborating with educational institutions can build acceptance among future and current healthcare professionals.</p>	<p>Long-term sustainability: Keeping guidelines regularly updated and ensuring funding for the platform present challenges.</p>
<p>Feedback loops: Establishing an online forum for addressing questions and gathering feedback can help improve the platform based on user input.</p>	<p>Cultural and linguistic diversity: Switzerland’s multilingual and culturally diverse regions present barriers in achieving a unified approach to guidelines.</p>

Appendix D: Project background and issue analysis: findings from the literature

Problematization

Clinical practice guidelines are documents that synthesize current medical evidence on how to organize and deliver health services for a given condition in the most effective manner (Gagliardi et al., 2015; Weisz et al., 2007). They are designed to improve the quality of care and reduce unjustified individual variation in clinical practice (Correa et al., 2020). These guidelines, developed through a synthesis of the best available evidence, aim to standardize clinical practices, improve patient outcomes and provider performance, and enhance the overall quality of healthcare delivery (Steinberg et al., 2011).

Several studies have shown how adherence to clinical practice guidelines improves healthcare outcomes such as survival (Carrasco-Peña et al., 2020; Derbel et al., 2012), mortality (Dean et al., 2001), and in-hospital complications (Rotter et al., 2012). Studies have also shown how guideline adherence enhances quality of care (Saint et al., 1999) and increases cost-effectiveness (Davey et al., 2001; Perrier et al., 2012; Rotter et al., 2012). Lastly, the integration of clinical practice guidelines into clinical practice has been shown to reduce variations in treatment approaches across healthcare settings (Brouwers et al., 2010; Qaseem et al., 2012).

Despite their advantages, adherence to clinical practice guidelines continues to be suboptimal, both internationally (Cabana et al., 1999; Perrier et al., 2012), and in the Swiss context (Gruebner et al., 2022; Mangold et al., 2023).

The fact that guidelines are not always translated into practice (McGlynn et al., 2003; Sheldon et al., 2004) shows that efforts are needed to promote awareness, acceptance, adoption, and adherence to guidelines (Gagliardi et al., 2015). However, given that adoption and adherence to clinical practice guidelines are low even when awareness and agreement are high, special attention should be given to the implementation of clinical practice guidelines (Gagliardi et al., 2015; McCormack et al., 2013).

Overall, implementation strategies have received less research attention than the guidelines to which they refer (Flodgren et al., 2019; Prior et al., 2008). Checklists for developing guidelines are focused mainly on planning guideline development and do not focus on their implementation (Gagliardi et al., 2015; Schünemann et al., 2014). Existing literature has also highlighted that, while there are instruments to assess barriers to guideline use, these do not reliably identify the most appropriate implementation strategy for a given guideline (Helfrich et al., 2009; K. M. Simpson et al., 2013).

Implementation challenges

Despite efforts invested in developing clinical practice guidelines and implementing strategies to enhance their adoption, evidence suggests a small and often inconsistent impact on actual guideline adoption. The effectiveness of various implementation strategies is frequently limited, with small to modest improvements observed in guideline adherence. This is due to the complexity of the implementation process and the multitude of factors influencing successful integration into clinical practice (Grimshaw et al., 2020).

Below, we list the six most mentioned obstacles and barriers to clinical practice guideline implementation within healthcare systems.

Characteristics of guidelines

Characteristics of the guidelines themselves can affect their actual implementation and use. It has been shown that guideline adherence is greatly impeded due to the variety of information held by lengthy and difficult text documents (Hussain & Lee, 2019). Guidelines that are easy to understand can easily be tried out and do not require specific implementation resources, conversely, they have greater chances of being used (Davis et al., 1997; Francke et al., 2008; S. Simpson et al., 2005). Furthermore, adherence to evidence-based guidelines appears to be higher than to guidelines lacking a clear scientific base (Saillour-Glenisson & Michel, 2003).

Volume and diversity

One notable challenge is the sheer volume of available guidelines, often leading to difficulties in selecting and prioritizing the most relevant ones for specific patient populations (Cabana et al., 1999). General practitioners might be confronted with too many guidelines, as each year, eight to ten new guidelines or updated versions are produced (Lugtenberg, Zegers-Van Schaick, et al., 2009). This is likely to enhance difficulties in synthesizing and integrating the vast array of guidelines into everyday clinical decision-making (Grimshaw et al., 2004; Lugtenberg, Burgers, et al., 2009). Furthermore, the diversity in guideline development methodologies, evidence grading systems, and conflicting recommendations across different sources can contribute to practitioner skepticism and hinder the adoption of standardized protocols (Gagliardi et al., 2014).

Resistance to change

Additionally, healthcare professionals may face resistance to change, as the integration of new guidelines may challenge established practices and require adjustments to ingrained routines (Cabana et al., 1999). Factors such as fear of loss of autonomy, professional identity, and concerns about guideline credibility have been shown as pivotal in shaping practitioners' resistance (Grol & Grimshaw, 2003).

Lack of resources dedicated to guideline promotion

Implementing clinical practice guidelines is often impeded by the constraint of resources allocated for promotional efforts by guideline developers (Gagliardi et al., 2015). In many instances, guideline developers prioritize the creation of evidence-based recommendations over expansive promotional campaigns. As a result, the responsibility for guideline implementation is frequently shifted to the target users, such as healthcare practitioners and organizations (Gagliardi et al., 2015; Lugtenberg, Zegers-Van Schaick, et al., 2009). This paradigm places a burden on end-users to self-educate and integrate guidelines into their clinical practice, potentially hindering the broader adoption of evidence-based practices (Kryworuchko et al., 2009; Lavis et al., 2008).

Time constraints and workload pressure

Time constraints and workload pressures are also significant barriers, with clinicians struggling to find the time to review and apply guidelines in their daily practice (Lugtenberg, Burgers, et al., 2009). Akbari et al. (2008) and Légaré et al. (2008) highlight the impact of busy clinical schedules on practitioners' ability to review and apply guidelines consistently. The demands

of patient care, administrative tasks, and increasing workloads can lead to a prioritization of immediate clinical concerns over the incorporation of guideline recommendations, resulting in a perceived lack of time for guideline review and application, and contributing to suboptimal adherence and implementation (Akbari et al., 2008; Légaré et al., 2008; Lugtenberg, Burgers, et al., 2009).

Applicability to individual patients and conflicts with patients' preferences and values

Moreover, concerns about the applicability of guidelines to individual patients and the potential for guideline recommendations to conflict with patient preferences and values contribute to the complexities surrounding their implementation (Cabana et al., 1999; Lugtenberg, Burgers, et al., 2009). Furthermore, patient characteristics, such as comorbidities, have been shown to influence the chance that guidelines are followed (Francke et al., 2008). Existing literature has shown that guidelines may not always account for the nuanced circumstances and preferences of each patient, indicating the inability to reconcile patient preferences with guideline recommendations as a barrier to guideline adherence (Cabana et al., 1999; Charles et al., 1997, 1999).

Possible solutions

The literature has suggested several possible directions to solve the implementation challenges of clinical practice guidelines. In general, effective guideline implementation strategies have been shown to have multiple components (Francke et al., 2008).

Central repositories

Establishing a centralized repository has been emerging as a potential solution for the systematic collection and publication of clinical practice guidelines. Initiatives like the National Guideline Clearinghouse in the United States and similar international repositories offer centralized platforms for guideline dissemination (Wolfe, 2001). In Switzerland, such a repository is the online platform "Guidelines Switzerland", which is run by the FMH (FMH Swiss Medical Association, 2024).

Standardized frameworks for guideline development

Collaborative platforms and standardized frameworks, such as the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) system, provide a structured methodology for guideline development, ensuring transparency and consistency in the assessment of evidence quality and strength of recommendations (Guyatt et al., 2008). Additionally, initiatives on checklists for guidelines development and implementation offer a comprehensive tool for guideline developers to ensure methodological rigor and transparency in the evidence synthesis process, as well as improved use of guidelines in healthcare decision-making (Gagliardi et al., 2015; Qaseem et al., 2012; Schünemann et al., 2014).

Guideline summaries

Another promising solution for easing the use of clinical practice guidelines in practice has been adopted in the UK. It consists of developing so-called clinical knowledge summaries. These are concise and accessible evidence-based summaries designed to support healthcare professionals in primary care by providing quick answers to clinical questions (NICE, 2024).

Concurrent planning

Implementation has been shown to be more successful if its planning is concurrent rather than consecutive to guideline development. In this way, needs and preferences of target users, as well as insights on contextual factors, could inform implementation planning already at the guideline development stage (Gagliardi & Brouwers, 2012). The development of guidelines that explicitly acknowledge the importance of individualized care, the incorporation of patient preferences into guideline development processes, and the promotion of communication skills trainings for clinicians are essential elements of successful implementation strategies (Armstrong et al., 2018; Wolfe, 2001).

Educational interventions and stakeholder engagement

To tackle practitioners' resistance, educational interventions, stakeholder engagement, and fostering a culture of collaboration and continuous quality improvement within healthcare organizations are potential strategies (Damschroder et al., 2009; Flodgren et al., 2011). One example are quality circles which are well-established instruments for aiding a doctor's daily work by regular conjointly reflection on common practice with other colleagues (Beyer et al., 2003; Schneider et al., 2008).

Machine-automated extraction of information

Finally, the utilization of machine learning algorithms and natural language processing has shown promise in automating the extraction and structuring of relevant information from a vast array of medical literature (Hussain et al., 2021; Hussain & Lee, 2019; Wallace et al., 2010). However, interoperability issues with existing health information systems, resistance to change among healthcare professionals, and concerns regarding the reliability and accuracy of algorithmic recommendations pose challenges to the integration of decision support tools into clinical workflows (Bright et al., 2012; Moxey et al., 2010).

Summary

In summary, clinical practice guidelines represent a valuable source of rigorously collected and evaluated medical knowledge. However, their translation into practice requires improvement. Given guidelines' substantial potential for quality improvement in healthcare delivery, bridging the gap between evidence and practice is imperative.

Starting from the recognition that there are important obstacles and barriers to guideline implementation and adherence in practice, with the stakeholder dialogue set in June 2024, we aim at identifying a set of viable recommendations for overcoming existing obstacles to effective guideline implementation.

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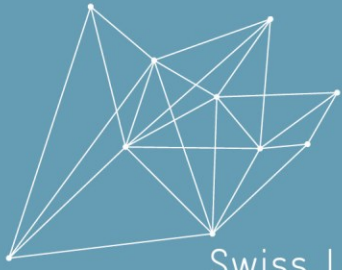
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