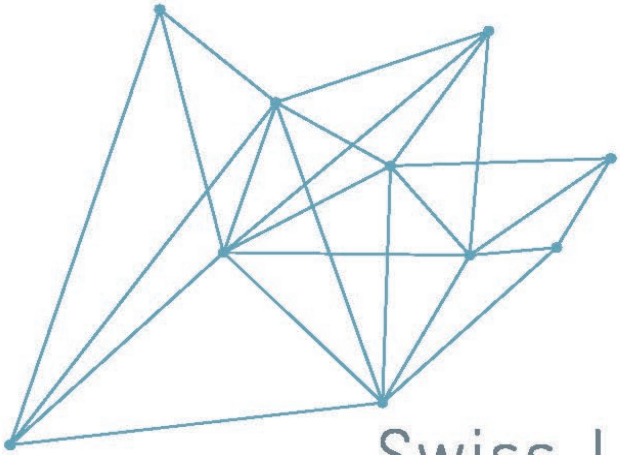

Swiss Learning Health System

Steps to Implementing International Knee Osteoarthritis Guidelines into Swiss Practice

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Keywords

knee osteoarthritis; care, patient centered; primary health care; guideline adherence; delivery of health care, integrated

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List of abbreviations

FOPH	Federal Office of Public Health
GDP	Gross domestic product
GP	General practitioner
GLA:D	Good Life with osteoArthritis in Denmark
HMO	Health maintenance organization
KOA	Knee osteoarthritis
MoC	Model of Care
NSAIDs	Non-steroidal anti-inflammatory drugs
OA	Osteoarthritis
PB	Policy Brief
SD	Stakeholder Dialogue
SDM	Shared decision-making
SLHS	Swiss Learning Health System
TKA	Total knee arthroplasty
ZHAW	Zurich University of Applied Sciences

Policy Briefs and Stakeholder Dialogues of the Swiss Learning Health System

The Swiss Learning Health System (SLHS) was established as a nationwide project in 2017, involving academic partners across Switzerland. One of its overarching objectives is to bridge research, policy, and practice by providing an infrastructure that supports learning cycles.

Learning cycles enable the continuous integration of evidence into policy and practice by:

- continuously identifying issues relevant to the health system,
- systemizing relevant evidence,
- presenting potential courses of action, and
- if necessary, revising and reshaping responses.

Key features of learning cycles in the SLHS include the development of **Policy Briefs** that serve as a basis for **Stakeholder Dialogues**.

A **Policy Brief** describes the issue at stake by explaining the relevant contextual factors. It formulates a number of recommendations to address the issue (evidence-informed recommendations, when available), and for each possible recommendation, it explains relevant aspects and potential barriers and facilitators to their implementation.
Policy Briefs serve as standalone products to inform interested audiences on potential courses of actions to address the issue, as well as input for Stakeholder Dialogues.

A **Stakeholder Dialogue** is a structured interaction where a variety of key stakeholders are brought together for the purpose of defining a common ground and to identify areas of agreement and disagreement on how to solve issues in the Swiss health system. Based on a Policy Brief, stakeholders discuss the issue, recommendations, and barriers and facilitators, and work collaboratively towards a common understanding of the issue and the best course of action. The dialogue takes the form of a deliberation to ensure that stakeholders work together to develop an understanding and solutions that are acceptable to all parties.

Key Messages

Background and Context

Knee osteoarthritis (KOA) is a prevalent and costly condition in Switzerland, affecting 12.4% of the population and nearly one-third of those over 75. The direct medical costs in 2017 reached 1.5 billion CHF. Despite strong and consistent international clinical guideline recommendations, an evidence-performance gap exists. Conservative, non-pharmacological treatments are underused, while Switzerland has the highest knee replacement surgery rate among OECD countries. Economic factors and regional variations suggest that surgery rates may not solely reflect patient needs, highlighting the urgency of addressing the evidence-performance gap. Previous policy efforts have addressed guideline implementation, but more work is needed. This policy brief continues those efforts, proposing suggestions based on stakeholder dialogues and scientific literature to improve knee osteoarthritis management in Switzerland.

The Issue

A repeated stakeholder dialogue revealed three main challenges in KOA management in Switzerland. First, patient pathways lack standardization: despite international guidelines, care remains inconsistent and fragmented. Second, interventions are often driven by patient expectations rather than evidence, leading to unnecessary imaging, early referrals, and low acceptance of conservative care. Third, providers struggle to manage expectations and motivate patients for nonsurgical treatments. A national survey confirmed patient disinterest and demand-driven referrals as major barriers to exercise-based management. These issues highlight the urgency of closing the evidence-performance gap in Swiss KOA care.

Recommendations for Action

The key results of the repeated stakeholder dialogue led to the formulation of three recommendations to address the evidence-performance gap:

1. **Implement a Model of Care** with consensus-based treatment algorithm grounded in international guidelines to promote multidisciplinary and evidence-based care.
2. **Strengthen the health literacy** of individuals with KOA through targeted education initiatives.
3. **Facilitate patient navigation** through evidence-based treatment options using effective communication and **shared decision-making** practices.

Implementation Considerations

Implementing the recommendations requires strategies tailored to the Swiss context. A joint project proposal to the Federal Quality Commission aims to develop a national Model of Care, with a systematic context analysis as a core element to identify barriers and facilitators. Strengthening health literacy demands co-designed, accessible education across diverse groups, while shared decision-making requires professional training, digital integration, and supportive incentives. Implementation should be continuously evaluated through indicators such as referral rates, surgery trends, patient-reported outcomes, and satisfaction. International examples, including GLA:D® and Australian Models of Care, show how structured monitoring can ensure sustainable, evidence-based improvements.

Background and Context

Osteoarthritis is the most common chronic joint disease, characterized by pain and loss of function (1). Knee joints are particularly affected, with a prevalence of 12.4% in Switzerland that increases with age, impacting nearly one-third of individuals over the age of 75 (2). This imposes a significant individual and socioeconomic burden. In 2017, the direct medical costs of osteoarthritis in Switzerland amounted to 1.5 billion CHF, representing 1.8% of total annual healthcare expenditures (3). With an ageing population and rising obesity, the burden of osteoarthritis is becoming a growing problem (4,5).

International clinical guidelines consistently recommend a patient-centered, stepped approach to managing knee osteoarthritis (KOA) (6–8). The core elements focus on conservative, primarily non-pharmacological treatments, including structured exercise, education, and, if needed, weight reduction, supported by basic pain medication. If options are exhausted, surgical interventions may be considered. Despite strong and consistent scientific evidence, the guideline recommendations are internationally not systematically implemented in practice and there appears to exist a so-called “evidence-performance gap”.

Box 1: OARSI Guidelines for non-surgical KOA Management (9)

Core elements:

1. Arthritis education
2. Structured exercise program
3. Dietary weight management

Level 1A and 1B:

4. Topical NSAIDs (1A)
5. Oral pain medication (1B)
6. Aquatic exercise, gait aids, self-management programs (1B)

Level 2:

7. Intraarticular treatment
8. Cognitive behavioral therapy with exercise

In an international review of osteoarthritis care, Basedow et al. (9) examined quality indicators across diagnosis, non-drug and drug treatments, and surgery. They found overall low quality of care, with the greatest gaps in the systematic assessment of pain and function as well as in the consistent use of non-drug treatments such as exercise and education. A recent survey among general practitioners, rheumatologists, and orthopedic surgeons in Switzerland revealed that the doctors estimated to refer around 54% of their patients with KOA to a specific exercise program. Barriers to prescribing exercise included patients' expectations and lack of interest, as well as clinicians' own clinical experiences (10). While non-pharmacological management of KOA appears to be underused, there are indications of an overuse of surgical interventions. Switzerland ranks highest among OECD countries in knee replacement surgeries per 100,000 inhabitants (11). Although the number of total knee arthroplasties (TKA) alone does not reveal whether these surgeries are appropriate or overused, research highlights the significant influence of economic factors on surgery rates. Studies have found a positive correlation between the number of TKAs performed and economic indicators such as gross domestic product (GDP) and the type of healthcare system funding. In contrast, a stronger gatekeeping role by general practitioners is associated with lower surgery rates (12–14). This suggests that the number of surgeries performed may not solely reflect the healthcare need of the population. In Switzerland, surgery rates show modest regional variability, indicating a consistently low threshold for performing TKAs across regions. However, one-third of this variation remains unexplained and, according to the study authors, may partly reflect differences in physicians' beliefs and attitudes toward joint arthroplasty (15). The Swiss Health Care Atlas confirms the moderate regional variation in initial knee replacements. A concordance coefficient of 0.73 indicates that these regional patterns have remained

relatively stable over time (16). This suggests that the differences in surgery rates are systematic rather than random, pointing to structural factors as contributors to the observed regional variability.

Previous efforts have been made to close the gap between evidence and performance in the management of KOA in Switzerland. Ettlin et al. developed a policy brief in 2020 (17). This brief formulated three recommendations that aimed at integrating structured exercise and education into the KOA management. The recommendations included 1) translation of the guideline recommendations into a specific exercise and education program, 2) facilitation of the systematic application of exercise and education through standardized treatment pathways, and 3) promotion of the benefits of exercise in the long-term management of chronic diseases. The first and partially the third recommendations were successfully addressed with the implementation of the GLA:D® Switzerland Osteoarthritis program. GLA:D® is a standardized, yet individualized education and exercise program for people with hip and knee osteoarthritis. Originally developed in Denmark, the program is now offered in several countries worldwide and has been available in Switzerland since 2019. The aim of GLA:D® is to implement international best practice guidelines in a quality-controlled manner (18).

Approach to this Document

In order to pursue the second recommendation of the 2020 policy brief, a structured stakeholder dialogue (SD) with multiple follow-up events was conducted in 2024. The aim was to explore how international guideline recommendations for KOA could be systematically applied across the entire treatment cycle in the Swiss healthcare system.

This Policy Brief builds on the results of this repeated dialogue, complemented by evidence from the scientific literature, to formulate new recommendations. Fifteen representatives from the following organizations participated in the stakeholder dialogue to address the issue of the evidence-performance gap in Switzerland:

From practice	- Swiss Society of General Internal Medicine - Swiss Society of Physical Medicine and Rehabilitation - Swiss Society for Rheumtology - swiss orthopaedics - Swiss League Against Rheumatism - Physioswiss
Health insurer	- santésuisse, organisation of Swiss health insurance companies - CSS Health Insurance
From research	- Zurich University of Applied Sciences (ZHAW)

The process began with a structured dialogue to identify areas of consensus and disagreement regarding the standardization of KOA management. This initial session was followed by four thematic meetings between May and December 2024, each addressing specific aspects of operationalizing international guideline recommendations in Switzerland. While the first dialogue followed a more formal structure, the subsequent sessions encouraged diverse perspectives, collaborative problem-solving, and the development of actionable strategies.

The Issue

The following section summarizes the most important results from subsequent stakeholder dialogue.

The **initial stakeholder dialogue** established a vision for KOA management in Switzerland. Stakeholders emphasized the importance of a standardized yet adaptable treatment approach, termed “coordinated individuality”. Key priorities included implementing existing guideline recommendations and improving transparency across professions. However, several challenges were identified, such as implementation across diverse disciplines and practice settings, insufficient interdisciplinary and interprofessional collaboration, and a need for better coordinating multidisciplinary care effectively without making it overly rigid.
The participants agreed on the next steps towards translating the international guideline recommendations for practical use. The steps included:

1. Review and analysis of existing guidelines
2. Development of core components
3. Implementation strategies and quality management

In the **first follow-up meeting**, points of agreement and disagreement emerged that had to be addressed. A consensus was that an evidence-performance gap existed, and the current implementation of guideline recommendations was insufficient. Systematic communication among healthcare professionals across disciplines, as well as between providers and patients, was identified as a crucial factor for advancing the implementation process. A point of disagreement arose regarding the initially proposed term "care pathway", which was seen as too rigid. Additionally, the group discussed that while conservative treatment should be considered the first-line therapy for all individuals with KOA, a referral to physiotherapy was not necessary for every patient. The medical doctors advocated for counselling for exercise and weight reduction as a first step before specific physiotherapy.

The **second follow-up meeting** delved into international examples, such as the Victorian Model of Care (Australia), the “Beating osteoARThritis” (Netherlands) and the international GLA:D program. Visual treatment decision trees were considered valuable, especially when implemented through an app or a website. This would facilitate their use as a patient education tool.

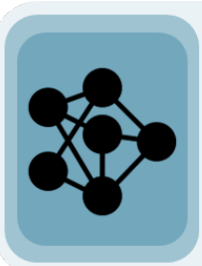
At the **third follow-up meeting**, the challenges faced by general practitioners and orthopedic surgeons came up. General practitioners expressed concerns about the timing of referring patients to specialists, fearing that later referral could lead patients to seek care elsewhere. Meanwhile, orthopedic surgeons noted that they were often consulted too early and had to refer patients back to conservative treatment, an approach that also resulted in a waste of resources. To address these issues, a stepped approach for managing KOA was discussed. It was agreed that the professions and disciplines involved should align on consistent decision criteria, which should also be transparent to patients. While this approach would suit most patients, "red flag" cases needed to be defined, as they may require deviation from the main pathway. Although this approach was perceived as useful, participants anticipated challenges in evaluating the success of such a system.

The **fourth follow-up meeting** resulted in a joint project proposal to the Federal Quality Commission of the FOPH. As this mainly concerned implementation planning rather than identifying further issues, the results are described in the section on Implementation Considerations.

The stakeholder dialogues collectively highlighted three core challenges in KOA management in Switzerland. First, there is no standardized approach for navigating patients through the healthcare system. Despite the availability of international clinical guidelines, patient pathways remain inconsistent, often shaped by individual preferences and the subjective practices of healthcare professionals. This lack of clarity on decision criteria leads to fragmented and uncoordinated care.
Second, the timing of interventions is frequently influenced by patient expectations rather than clinical evidence. General practitioners reported pressure to refer to specialists or perform imaging even when not indicated, while patient acceptance of nonsurgical treatments appeared low.
Third, healthcare providers face difficulties in managing expectations and motivating patients to engage in conservative care. A Swiss survey among GPs, rheumatologists, and orthopedic surgeons confirmed these challenges, identifying patient disinterest and demand-driven referrals as major barriers to recommending exercise programs (10).

Recommendations to address the evidence-performance gap in the management of KOA in Switzerland

Based on the stakeholder dialogues, three key recommendations were developed to address the evidence-performance gap in the management of KOA in Switzerland:



1. **Implement a Model of Care with a consensus-based treatment algorithm grounded in international guidelines to promote multidisciplinary and evidence-based care.**

2. **Strengthen the health literacy of individuals with KOA through targeted education initiatives.**

3. **Facilitate patient navigation through the treatment algorithm using effective communication and shared decision-making practices.**

Recommendation 1: Implement a Model of Care with a consensus-based treatment algorithm grounded in international guidelines to promote multidisciplinary and evidence-based care.

Implementing a Model of Care (MoC) offers a structured solution to the challenges identified in the stakeholder dialogues. A MoC be defined as an “evidence-informed strategy, framework or pathway that outlines the optimal manner in which condition specific care should be delivered to consumers within a local health system” (19). Its aim is to explicitly translate evidence-based guidelines into practice and facilitating their implementation. It provides guidance on delivering "the right care, at the right time, by the right team, in the right place, using the right resources” (19) - an approach increasingly adopted internationally for osteoarthritis management (20). A scoping review identified 37 international examples of MoCs for KOA across 13 mostly high-income countries. All of them included at least one of the core guideline recommendations, namely self-management, education, exercise and/ or dietary weight management. In Norway, the AktivA (Active with Osteoarthritis) program focuses on physiotherapy-led education and exercise therapy, ensuring long-term adherence to non-surgical management. Patients reported significant pain reduction and improved quality of life, with sustained benefits even two years after program participation. In the Netherlands, the Beating OsteoARThritis (BART) program adopts a stepped-care model, integrating conservative treatments such as exercise, dietary therapy, and pain management before considering specialist referrals. This approach ensures that non-surgical options are fully explored before surgery. Similarly, the Victorian Model of Care for Osteoarthritis in Australia emphasizes a structured care pathway, multidisciplinary collaboration, and patient education to promote guideline adherence.

These international examples highlight both the diversity and commonalities in KOA management models. While approaches vary across countries, key characteristics frequently include GP-led care, structured referral pathways to primary care services, and multidisciplinary collaboration. The findings of the scoping review emphasize the need for flexible and individualized care models rather than a one-size-fits-all approach. Adapting care pathways to patients' specific health status and clinical needs is essential to optimizing treatment outcomes. Step-by-step strategies, such as those seen in Norway and the Netherlands, appear particularly promising in ensuring that conservative treatments are prioritized before considering surgical interventions. Drawing from these examples, key lessons emerge for the Swiss healthcare system. A central component of a MoC for KOA in Switzerland could be the integration of a structured treatment algorithm. This consensus-based algorithm would translate international recommendations into a single, practical tool with clearly defined decision criteria within a stepped-care approach. A visual decision tree could assist healthcare providers in guiding patients through the healthcare system, while an adapted lay version would serve as an educational resource to enhance patient understanding. To ensure accessibility, the visual algorithm should be integrated into a shared digital platform or stored within the electronic patient record. This would enable seamless communication among healthcare providers, ensuring consistent patient interactions throughout the care journey. This person-centered approach would promote evidence-based, multidisciplinary care. Challenging aspects when developing the treatment algorithm within a MoC could be the consensus building on decision criteria, implementing it in the different regions of Switzerland and measuring its success.

Recommendation 2: Strengthen the health literacy of individuals with KOA through targeted education initiatives.

An Australian study on patient beliefs about KOA and its treatment highlighted widespread misconceptions that hinder acceptance of conservative care. Many patients viewed KOA as a

result of "wear and tear" or "bone-on-bone" degeneration, believing that movement would worsen their condition. Consequently, they hesitated to engage in physiotherapy and exercise-based interventions, favoring surgical or experimental treatments they believed could restore lost cartilage. A strong sense of inevitability regarding disease progression further reinforced surgery as the only viable option (21). Negative beliefs including movement-related fears in musculoskeletal disorders are associated with lower health literacy (22). Low health literacy negatively affects health behaviors, health outcomes, and healthcare utilization. Health literacy is the ability to access, understand, appraise, remember and apply health information to make informed decisions (23). In Switzerland, 49% of the population reports frequent difficulties with health information. Those most affected include individuals with financial hardships, language barriers, low social support, chronic diseases, older age, or residence in rural areas (24). To ensure equitable access to evidence-based KOA management, targeted health literacy initiatives are needed

One approach to strengthening health literacy is the Ophelia (Optimizing Health Literacy and Access) project, which aims to improve health outcomes and equity by addressing health literacy barriers within communities. The Ophelia framework involves assessing specific health literacy needs, co-designing locally relevant interventions, and evaluating their impact. By actively involving stakeholders, including healthcare providers and affected persons, the approach ensures that interventions are tailored to the needs of different population groups and effectively improve access to and understanding of health information (23). An example of the Ophelia approach in practice is its implementation in a cardiac rehabilitation program in Denmark. Health literacy assessments identified that some patients struggled to understand rehabilitation guidelines and lacked the confidence to actively engage in their recovery. In response, healthcare providers co-developed patient-centered strategies, including simplified health materials and personalized counseling sessions. This resulted in improved patient engagement and better adherence to rehabilitation protocols (25).

A similar approach could be applied in Switzerland to improve health literacy among individuals with KOA. Many patients lack awareness of conservative treatments and hold misconceptions about disease progression, leading to unnecessary specialist visits and underuse of nonsurgical interventions. Adapting the Ophelia model would involve assessing specific patient needs, developing tailored tools and educational materials, and integrating these interventions into primary care and physiotherapy settings. This could empower patients to actively participate in their treatment, reduce the burden on specialists, and enhance equity in care. Strengthening health literacy in this way would contribute to more efficient and evidence-based KOA management within the Swiss healthcare system.

Recommendation 3: Facilitate patient navigation through the treatment algorithm using effective communication and shared decision-making practices.

While strengthening health literacy can help align patient expectations with evidence-based care, effective communication by healthcare professionals is equally crucial. Clear guidance, shared decision-making (SDM), and transparent discussions about treatment options can improve patient understanding and acceptance of non-surgical interventions. SDM specifically addresses belief and knowledge imbalances that often drive inappropriate healthcare demand. It involves healthcare professionals and patients collaborating on healthcare decisions, considering the best available evidence and the patients' values and preferences. Informed, patient-centered decisions are associated with better health outcomes and higher satisfaction for both KOA patients and healthcare professionals (26,27).

In southwest England, an SDM tool to support patients with KOA in making informed treatment choices was implemented in 2022. The tool provides evidence-based information on available treatment options across all disease stages, guiding discussions between patients and clinicians. Available in both digital and paper formats, it aims to enhance patient engagement and encourage conservative management before considering surgery. The tool was particularly valued for improving patient understanding of KOA management, aligning expectations with value-based care, and promoting non-surgical options (28). Implementing SDM in a similarly systematic manner in Switzerland could improve patient engagement. A structured SDM approach could improve patient satisfaction by enhancing communication and empowering individuals to take an active role in their care. When patients are well-informed and engaged, they are more likely to adhere to treatment plans, leading to better health outcomes. Additionally, SDM promotes greater equity in healthcare by ensuring that all patients, regardless of health literacy, can navigate the treatment algorithm, fostering more consistent and inclusive KOA management. However, challenges must be addressed. Healthcare providers may require additional training in SDM and effective communication. Furthermore, longer consultations could create time constraints and increase the workload of healthcare professionals, necessitating strategies to integrate SDM efficiently into clinical practice.

Implementation Considerations

In order to implement the three recommendations, tailored strategies are required that address barriers at multiple levels of the Swiss healthcare system. For the proposed Model of Care (Recommendation 1), consensus-building among professional societies and health insurers will be crucial to agree on decision criteria and referral standards. Without such agreement, patient pathways will remain inconsistent. The fourth follow-up meeting focused on coordinated implementation efforts and resulted in a joint decision to submit a project proposal to the Federal Quality Commission of the Federal Office of Public Health (FOPH) on "Implementing knee osteoarthritis guidelines in Switzerland." While specific decision criteria and referral rules still require consensus, participants expressed a strong shared commitment to improving the quality of KOA care. An essential component of this project will be a systematic context analysis to identify barriers and facilitators at different levels of care. This will provide the necessary evidence base for developing implementation strategies. The project foresees work packages aligned with the core guideline elements, including exercise, education, and weight management, thereby creating a structured framework for the development of a national Model of Care.

Strengthening health literacy (Recommendation 2) requires interventions that are co-designed with patients and adapted to diverse population groups. Information should be made available in simple and visual formats, in multiple languages, and embedded in routine encounters in general practice and physiotherapy. Collaborations with patient organizations can further increase outreach and ensure that educational materials are relevant and accessible.

Facilitating shared decision-making (Recommendation 3) depends on strengthening the communication skills of healthcare professionals. Training programs will be necessary to prepare GPs, specialists, and physiotherapists to use SDM systematically in consultations. Embedding SDM tools in electronic health records or practice management systems could support their uptake, while financial or organizational incentives may be needed to address the additional time requirements of SDM in busy practices.

To evaluate and monitor the implementation of these recommendations, a comprehensive plan should be established with key performance indicators such as referral rates to exercise therapy, uptake of structured education programs, use of SDM tools, surgery and revision rates, and patient-reported outcomes (pain, function, satisfaction). A mixed-methods approach, combining quantitative data with qualitative insights, would ensure a robust evaluation. International experiences illustrate the feasibility of such monitoring. The GLA:D® program systematically collects patient-reported outcome measures to track long-term effects on pain and function (18). Similarly, the Australian Models of Care incorporate patient-reported outcome measures (PROMs) and system-level indicators to evaluate their implementation across regions (19). Drawing on such examples, Switzerland could establish a learning system that enables continuous adaptation and ensures that implementation remains aligned with best practices.

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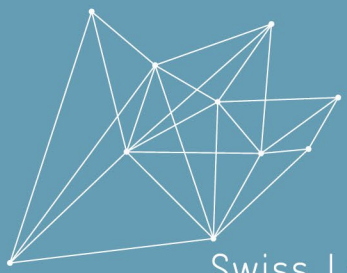

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