Topical Review

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An action plan: The Swedish healthcare pathway for adults with chronic pain

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Abstract

Objectives – Chronic pain is a major global public-health issue. In Sweden, 20% adults report moderate to severe chronic pain, with 7% continuously seeking healthcare. Shortcomings in treatment, accessibility, and knowledge in healthcare for chronic pain have previously been reported. A generic treatment structure from primary to specialized care and rehabilitation was missing. This study aims to describe the development process for the creation of a person-centered and coherent care (P3C) pathway for adults with chronic pain in Sweden.

Methods – A National Action Group with expertise in pain medicine, rehabilitation medicine, psychiatry, anesthesiology, neurosurgery, general medicine, nursing, psychology, physiotherapy, occupational therapy, and patient representation was commissioned to develop the pathway following a stepwise co-designed approach, which included mapping current situation, goals, measures and indicators of the pathway, assessment of consequences and anchoring the process.

Results – Goals were based on challenges identified in the mapping, including improvements in patient's well-being, continuity during and between care contacts, timely self-management, communication between levels of care, and knowledge about pain. Points of pathway entrance and exit were described. Measures focused on areas such as early pain analysis, biopsychosocial approach to assessment and treatment, early rehabilitation plan, teamwork, dialogue and joint plans between levels of care, patient participation, and education on pain and its consequences. Process and outcome indicators, and a report on benefits and risks for patients, ethical aspects, costs, and impacts of the pathway on other areas of healthcare were included.

Conclusions – The P3C pathway addressed the challenges described by patients and practitioners. By being person-centered and coherent, it can promote patient empowerment and equality in care, with emphasis on early and timely interventions, dialogue between patients and practitioners and between levels of care, self-management of pain instead of prolonged medical intervention, value-driven and coordinated care contacts, and increased knowledge about chronic pain, based on existing evidence and experience.

Keywords: chronic pain, care pathway, person-centered care, healthcare quality assurance, practice guidelines

Some data were presented as a poster at the IASP World Congress, Amsterdam, Netherlands, 08-08-2014.

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1 Introduction

In 2018, a national system for knowledge-driven management within Swedish healthcare was created by Sweden's regions, supported by 26 National Program Areas (NPAs) with experts leading activities in their respective fields.

National Action Groups (NAGs) were formed in the program areas as needed. The government and the regions signed an agreement to develop person-centered and coherent care (P3C) pathways for several disease areas [1]. P3C pathways focus on an effective, evidence based and personalized delivery of healthcare [2] and aim to minimize risk of fragmented care and inequalities in the provision of care, highlighting caregivers and patients' perspectives. Each NPA was tasked with identifying areas in need of P3C pathways.

Chronic pain causes significant suffering for individuals and represents a major global public health issue [3]. In Sweden, approximately 20% of adults experience moderate to severe chronic pain, with around 7% seeking healthcare. Many of these individuals have a high level of healthcare utilization and are often on sick leave from work [3,4]. The National Board of Health and Welfare published recommendations for the treatment of chronic pain [5], and reports from the Swedish Agency for Health Technology Assessment and Assessment of Social Services [6–8] on the treatment of chronic pain have regularly provided updated recommendations for chronic pain treatment and highlighted areas in need of improved scientific evidence. These initiatives motivated the provision of government incentives for chronic pain rehabilitation services [9] also strengthening the national registry for chronic pain rehabilitation. Nevertheless, the adoption of evidence-based recommendations into practice can be difficult [10]. Treatment remains mostly unimodal and fragmented in primary care, where most patients seek care [3], leading frequently to unnecessary diagnostic and medical procedures [4,11].

Shortcomings were also reported in many areas in a 2016 national report with input from regions, clinicians, and patients [4]. Care for chronic pain was described as unequal and uncoordinated in both primary and specialized care. Pain units at hospitals were often based on local tradition or single enthusiasts without formal assignments, often with goals not reflecting the actual need. Patient organizations reported large quality variation in the delivery of pain care, emphasizing shortcomings in treatment, accessibility, and competence of professionals at all levels of care. The report concluded that a national task force was needed to further develop strategies to mitigate these problems and to improve the quality of pain care at all levels. The report also recommended that quality registers should include both primary and specialized care and that professionals at both levels should be offered further education in pain and pain treatment [4].

Accordingly, following the recommendations of the 2016 report and within the national healthcare management system, a need for a P3C pathway for adults with chronic pain was identified. Current efforts, even though addressing key issues for a pathway for pain care, focus mostly on specific pain diagnoses, are usually profession-driven, mapping only specific portions of the necessary treatment structure that should include primary and specialized care [12–16]. There is a need for a generic chronic pain treatment structure from primary care to specialized medical interventions and rehabilitation, with multiprofessional input and patient participation. Hence, the aim of this study is to describe the development process for the creation of a P3C pathway for adults with chronic pain, which includes the formation of a multiprofessional expert group with patient representation, the P3C proper including an analysis of potential consequences, and an anchoring process with input from stakeholders.

2 Method

The process for developing P3C pathways follows a stepwise co-designed approach (Figure 1).

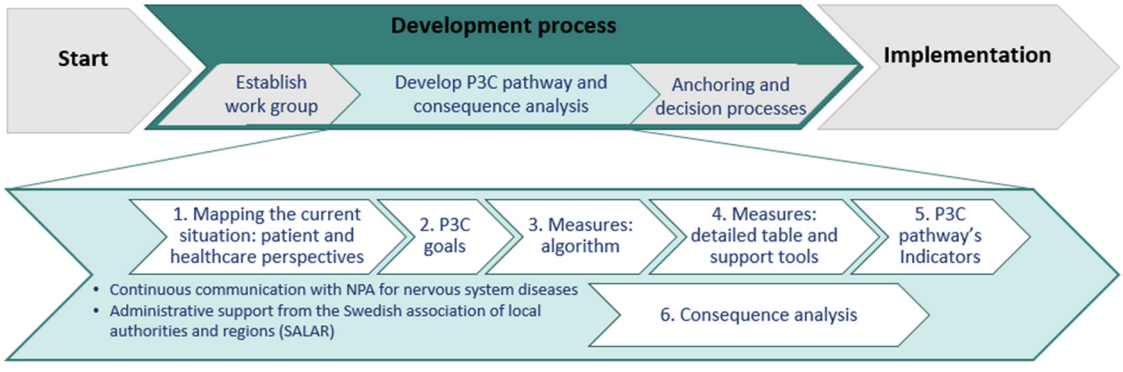

Figure 1: Development process of a person-centered and coherent care (P3C) pathway for adults with chronic pain.

2.1 Establishing the group

To address issues raised by the 2016 report [4], the NPA for nervous system disorders was tasked to form a NAG Pain. In 2019, the NPA selected 14 experts from candidates proposed by all healthcare regions, aiming to constitute a group with the necessary expertise and national anchoring. The expertise of the NAG Pain included pain medicine, rehabilitation medicine, psychiatry, anesthesia, neurosurgery, primary care, nursery, psychology, physiotherapy, occupational therapy, and patient representatives, covering both clinical and academic perspectives, with healthcare experience from large cities to rural areas. Accordingly, the NPA for nervous system diseases judged the newly formed NAG Pain to have the necessary competencies to develop a P3C pathway for chronic pain in adults.

2.2 Developing the P3C and consequence analysis

1. **Mapping the current situation: Patient and healthcare perspectives.** The sources available to the group were the information from patients, caregivers, and administrators included in the 2016 report [4], the existing literature on the experiences of patients and caregivers in the area of chronic pain [17], and documents provided by patient organizations thorough the two NAG's members representing patients' perspectives. The importance of the patient-as-partner approach in healthcare development projects has been emphasized elsewhere [18].
2. **Goals of the P3C pathway for chronic pain in adults.** The goals of the pathway were extracted from the identified four main themes at the core of patient and caregiver perspectives.
3. **Measures: Algorithm, detailed table, and support tools.** The P3C pathway was designed as an algorithm. During the development process, smaller working groups were created within the NAG to focus on different aspects uncovered by the algorithm. The working groups updated each other on their progress at the NAG monthly meetings, followed by discussions and suggestions. Each working group refined its work until the material was deemed good enough for the final development of the algorithm and an attached table with a detailed description of the algorithm's elements. Additional information and tools to support implementation were also included.
4. **Indicators.** Achievable quality indicators to assess the pathway were identified following discussions in the NAG and with administrative support from a team provided by the Swedish Association of Local Authorities and Regions (SALAR). The P3C pathway was refined during the process with the support of experts in informatics and medical issues provided by SALAR.
5. **Consequence analysis.** An impact assessment of the implementation of the P3C pathway was summarized in an additional report, including the financial consequences of its implementation. Available national reports on healthcare costs and average appointments due to pain, costs related to staffing pain rehabilitation teams, amount of necessary education hours, and expected sick leave decrease based on registry studies were calculated and supported by healthcare statistics expertise. Two possible scenarios based on available national and international data were included [1].

2.3 Anchoring and decision processes

Reviews from patient organizations, internal reviews from SALAR, and reviews from groups with relevant neighboring expertise were planned to receive feedback for amendments prior to a 2-month public consultation, after which the pathway would take its final form to be presented to the national system for knowledge-driven management for approval and publication.

3 Results

3.1 Developing the P3C and consequence analysis

1. **Mapping the current situation:** *patient and healthcare perspectives*. Experiences from patients, both at home and in contact with caregivers at various levels of care, along with insights from caregivers as they manage contact with patients, were summarized, resulting in four main challenges to address, as presented in Table 1. These challenges provided the rationale for changes proposed by the pathway.
2. **Goals of the P3C pathway for chronic pain in adults.** The goals of the pathway, described as a positive resolution of the identified challenges, are
   1. improved quality of life for patients
   2. increased continuity and security for patients during and between care contacts as well as between healthcare professionals
   3. increasing the proportion of patients who can manage their pain early on without further medical intervention
   4. increased cooperation within and between levels of care, where care is requested by the referrer in consultation with the patient

5. increased knowledge of healthcare professionals and patients in the field of chronic pain based on evidence and proven experience
6. reduced costs for individuals, health services, and society

3a. **Measures: algorithm.** An algorithm to meet the challenges described, following a stepwise strategy within and between primary and specialist care, was developed (Figure 2), including entrance to and exit from the pathway (Table 2).

3b. **Measures: Detailed table and support tools.** To facilitate the use of the pathway, each step in the algorithm was explained in a table available to clinicians (Appendix A). Main interventions in the pathways are (a) clinical assessment, including pain analysis; (b) biopsychosocial assessment and dialogue with the patient; (c) developing/reviewing rehabilitation plan; (c) type of treatment intervention (unimodal or multimodal, primary care, or specialized care); (d) focus on drug treatment, patient education, physical exercise, mental health, daily activities, sleep hygiene, lifestyle, and work-related interventions; (e) follow-up and dialogue both between practitioner and patient and between levels of care.

Support tools for the pathway include a summary of current knowledge on chronic pain, information on the treatments and interventions, detailed information on patients' experiences and challenges according to research and reports from patient organizations, support for the standardization of documentation, and examples of tools including pain drawing, rehabilitation plan, and several questionnaires used to support assessment.

4. **Indicators.** To monitor the pathway, indicators used for outcome measures linked to health-related quality of life, mental well-being, and physical exercise, as well

Table 1: Care for chronic pain: Current situation, experiences, and challenges from a patient's perspective

Situations and experiences	Challenges
• Experiencing mistrust, lack of security, and experiencing anxiety in contact with the healthcare system • Lack of resources, change of staff, and long recurring waiting time with uncoordinated actions leading to deterioration of the patient's condition, important information may be missed, planning may be delayed, the patient is burdened by demands for answers from other actors such as social security, employers, social services, and education • Often reception of different messages and care of varying quality, which increases anxiety • Lack of communication between different healthcare professionals and other actors, which creates insecurity	Lack of continuity and security
• Uncertainty about who the patient should contact • Inadequate structures for responding to and managing chronic pain make it difficult for patients to find and get the right help. The patient then seeks care in several places, which leads to increased stress	Disjointed and recurring non-value-added visits
• Lack of knowledge about chronic pain and its management among healthcare professionals, promotes insecurity and stressful encounters that can be colored by a lack of empathy • Patients seek solutions outside the healthcare system because they perceive a lack of knowledge among healthcare professionals. These solutions are often not evidence-based and, in the worst case, can lead to further health problems • Lack of knowledge among patients about chronic pain and its management leads to increased anxiety and difficult encounters	Insufficient knowledge among healthcare professionals and patients
• The patient's challenges extend beyond healthcare, in contacts with employers, social security, employment services, childcare, etc., and are present in many different situations, in conversations with unsympathetic managers, colleagues, relatives, and friends • A lack of guidance and encouragement to take responsibility increases anxiety and feelings of hopelessness and helplessness • Support that is not adapted to the patient's needs can lead to staff taking over responsibility • A lack of a holistic approach and differing objectives among staff can lead to a lack of support and guidance for the patient	Lack of support in returning to a life with good management of both pain and its consequences

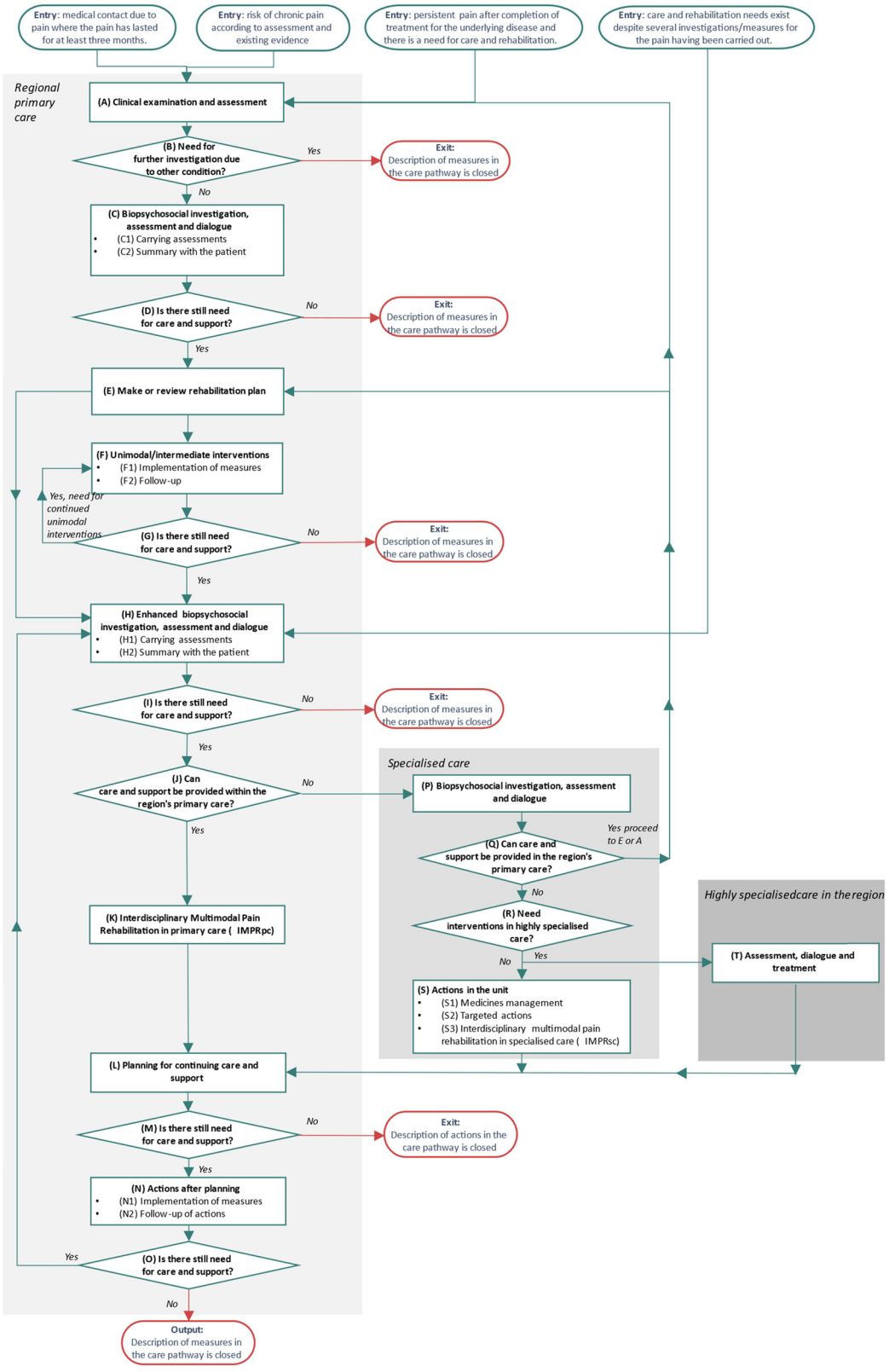

Figure 2: Algorithm for a person-centered and coherent care pathway for adults with chronic pain.

Table 2: Entrance to and exit from the P3C pathway

Entrance to the pathway	1. In case of a medical contact due to pain for at least three months 2. When there is a risk of chronic pain according to assessment and existing evidence 3. If the patient has persistent pain beyond the expected recovery period after treatment for underlying diseases or conditions and has care and rehabilitation needs 4. If there is a need for care and rehabilitation despite the fact that investigations and/or measures for pain have been carried out 5. A person can be included in the pathway on repeated occasions
Exit from the pathway	1. If the investigation raises suspicion of a serious condition (e.g., malignancy) or untreated 2. If the patient can manage his/her situation without additional healthcare measures 3. If, after detailed information from and dialogue with health professionals on the expected benefits of continued care, the patient is not interested in the treatment measures offered, or cannot participate for social, economic, or other reasons 4. If the patient is judged to be unable to benefit from further measures of the P3C pathway

as indicators for process measures linked to the early establishment of a rehabilitation plan and the appointment of a contact person early in the pathway were identified (Table 3).

5. **Consequence analysis.** Benefits and risks for the individual, ethical aspects, costs and impacts on other areas of healthcare were analyzed. In summary, the analysis indicates major implications for primary care and, to some extent, for specialized care. Developed working methods, organizational changes and educational efforts are required, leading to increased costs and resources in the short term, here defined as one to three years. The pathway can lead to significant savings in indirect costs already in the short term as the changes are aimed at a return to normal activity, including work, by identifying patients at risk for chronic pain, educating patients that are in the early stages of chronicity and speeding up the referral to more comprehensive biopsychosocial assessments and team-based pain rehabilitation. In this way, interventions that might lead to exacerbation of factors known to hinder normal activity, such as fear of movement, avoidance of activities, and catastrophizing, can be avoided. The pathway is assumed to create conditions for avoiding non-value-adding measures, such as referrals for non-recommended diagnostic tests, inappropriate pain medicine for chronic conditions, and visits that do not include explanations for chronic pain and to optimize the choice of care level. In the longer term (within a five-year period), early intervention and better structure are expected to lead to less care-seeking and reduced costs for the individual, the health system, and society. Feedback from stakeholders confirms the need for education and training in chronic pain, indicating that additional resources will be required. It was repeatedly stated that the P3C pathway can be an important tool for developing more equitable, robust, and evidence-based care for adults with chronic pain.

3.2 Anchoring and decision processes

Two patient organizations provided ongoing feedback through representation in the NAG. The P3C pathway was internally reviewed by SALAR and by selected expert groups in February 2022. It was further refined and launched for public consultation from 15 April to 15 June 2022. Eighteen out of 21 regions, 6

Table 3: Monitoring the pathway: Performance and process indicators

Performance indicators	Process indicators
The proportion of patients with a diagnosis of chronic pain and having undergone interdisciplinary multimodal pain rehabilitation (IMPR) who rate their health according to EQ VAS is higher at the one-year follow-up than at the first measurement	Percentage of patients diagnosed with chronic pain who have a rehabilitation plan in place within one month of diagnosis
The proportion of patients with a diagnosis of chronic pain and having undergone IMPR, who rate depression according to The Hospital Anxiety and Depression Scale (HADS) lower after IMPR	Proportion of patients diagnosed with chronic pain who have a regular primary care contact one month after diagnosis
Percentage of patients with a diagnosis of chronic pain and having undergone IMPR, who engage in physical exercise	

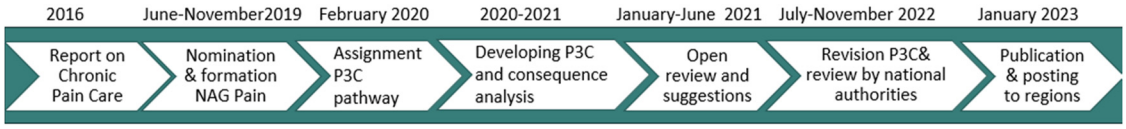

Figure 3: Timeline of main events for the establishment of a national action group on pain (NAG Pain) and the development of a person-centered and coherent care (P3C) pathway for adults with chronic pain.

NPAs, 6 national professional associations, 3 local or regional program areas, one governmental institution, and 6 other stakeholders provided extensive feedback. The NAG held a 2-day workshop for discussion, and subgroups were formed to revise the P3C pathway based on the feedback. The P3C pathway, initiated in March 2020, was finally presented to the national system for knowledge-driven management in October 2022, approved and published [1], and sent to the regions for implementation in November 2022.

A timeline of the main events is presented in Figure 3. Abbreviations and explanations are presented in Table 4 to facilitate readability.

4 Discussion

Earlier efforts to implement national guidelines for chronic pain conditions into clinical practice have not been successful. Although rehabilitation inherently focuses on the patient, guidelines often are lacking in flexibility to customize treatments for individual needs and for differing healthcare setting contexts [3,4]. To meet patient needs for continuity and quality of care as well as to support caregivers to provide evidence based and coherent care in different contexts through Sweden, a P3C pathway was developed by the NAG. Its members were carefully selected to address identified problems in the delivery of care for patients with chronic pain, representing the necessary expertise with knowledge of the different perspectives involved.

The P3C pathway for adults with chronic pain focuses on early pain analysis, that is, conducted as soon as underlying treatable medical conditions are discarded, a biopsychosocial approach to assessment and treatment, a rehabilitation plan (including who does what, how and when, and follow-up), a stable team setting when teams are deemed as necessary, dialogue and joint plans between levels of care, patient participation, and education on pain and its consequences. By avoiding non-value-adding measures, the P3C pathway is expected to optimize choice and intensity of care level. It has major implications for primary care and, to some extent, for specialist care.

Table 4: Abbreviations and explanations

Abbreviation	Explanation
P3C pathway	Person-centered and coherent care pathway
NPA	National program area (in medicine)
NAG	National action group (expert group within a program area)
SALAR	Swedish association of local authorities and regions
IMPRpc	Interdisciplinary multimodal pain rehabilitation, primary care
IMPRsc	Interdisciplinary multimodal pain rehabilitation, specialized care

The P3C pathway addresses the challenges described by patient representatives and by studies involving patients' perspectives elsewhere [17]. The pathway, by being person-centered and coherent, is expected to promote patient empowerment and equality in care for patients with chronic pain regardless of geographic location in the country, with emphasis on early and timely interventions. It may support positive changes regarding patients' quality of life, dialogue between patients and practitioners, communication between healthcare professionals and between levels of care, self-management of pain without further medical intervention, value-driven and coordinated care contacts, and increased knowledge in the field of chronic pain, based on existing evidence and experience.

The design process of the pathway applied a replicable healthcare redesign methodology [19] including all stakeholders to ensure equal value for all perspectives and aimed for standardization across caregiver disciplines, involving interdisciplinary primary and secondary care settings. To the best of our knowledge, this methodology has not been used before as systematically as in the Swedish example, and should be considered as a main strength of the P3C pathway development. A limitation of the pathway may lie in the difficulties involved in evaluating its effects. Nevertheless, indicators were proposed to investigate changes after implementation, mostly focusing on segments of the pathway. Furthermore, this pathway is proposed according to the Swedish context, limiting to some extent its application in other countries unless contextual adaptations are enacted.

A primary challenge to the national implementation of the P3C pathway for chronic pain in adults in Swedish healthcare lies in the need for numerous individual clinical healthcare professionals and organizations to interpret and apply the pathway consistently within their specific

contexts. This P3C offers a standardized transdiagnostic but flexible pathway that can be tailored to a patient's individual needs. With this national standardized and generic pathway, it is possible to make regional adaptions. The pathway also contributes to important structures in the process by specifying crucial gaps in the process of translating the framework to clinical practice, a crucial factor for implementation in the local clinical setting [20].

Despite research over the past 20 years highlighting the significance of rehabilitation in enhancing clinical outcomes for patients with chronic pain, this evidence has not been successfully implemented in everyday practice [4]. Researchers and policymakers often tackle issues that are not directly their own, which can result in a disconnect between healthcare quality improvement objectives and the actual needs of end-users. This misalignment can contribute to research waste, leading to the creation of guidelines and interventions that may not fully address real-world requirements and, consequently, have a limited impact on clinical practice. The number of articles published on PubMed regarding implementation has increased from 14 in 1994 to 1536 in 2024, indicating the importance of increasing knowledge on implementation science. A critical issue in the implementation of scientific results into rehabilitation settings is often a matter of managing a standardized introduction of intervention models in a multiprofessional setting, emphasizing that these models may need to be adapted to specific clinical situations [11].

The implementation of the P3C pathway will require changes in work methods and organizational praxis as well as education efforts [4]. Studies show poor adherence to existing care pathways. However, compliance has been observed to increase if implementation efforts are intensive and recurring [7,8]. This may increase costs in the short term, but chronic pain pathways can be argued to reduce indirect costs as measures aim to return to normal activity, including work [21]. In the longer term, early interventions and better structure may lead to less care seeking and costs for patients, healthcare, and society [1].

Moving forward, each healthcare region in Sweden will establish multidisciplinary local action groups (LAGs), including participation from local patient organizations representatives, to conduct gap analyses, develop local action plans, and manage the ongoing follow-up of the P3C pathway in coordination with the NAG.

5 Conclusion

Key elements for integrating best practices, based on scientific evidence and the perspectives of patients and healthcare professionals, were identified to create a Swedish national person-centered and coherent care pathway for adults with chronic pain. Future research will assess potential enhancements in healthcare quality outcomes and the effectiveness of dissemination and implementation strategies.

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***Artificial intelligence/machine learning tools:** Not applicable.

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Appendix

Table A1

Table A1: Detailed interventions in the P3C pathway for chronic pain

Healthcare interventions	Patient's actions
(A) **Clinical examination and assessment** Perform a pain assessment based on history, status, and pain drawing (see Appendices A and E). Use ICD-10 for diagnosis and classify pain as one or more of the following: • Nociceptive (R52.2A) • Neuropathic (R52.2B) • Nociplastic (R52.2C) Make a baseline assessment that includes results from laboratory tests. Suggested tests to be completed if necessary: Blood status, electrolyte status, including calcium, liver status, PEth (phosphatidyl ethanol), TSH, homocysteine, blood glucose, and CRP Risk assessment of serious conditions, untreated diseases, or co-morbidities that may explain totally or partially the patient's pain symptoms Evaluate drug treatment and pay particular attention to treatment with narcotic drugs Appoint a permanent care contact	Communicates symptoms, fears, and expectations Asks questions about • reason for investigation and tests • the impact of pain on stress and sleep • the importance of self-care • other interventions added during the healthcare assessment Depending on the information provided by the healthcare service, perform self-care during the investigation period
(B) **Decision: Need for further investigation due to other conditions?** Yes: If assessment according to (A) raises suspicion of a serious condition, untreated disease, or co-morbidity that first needs to be further investigated and treated at another level of care, proceed to Exit, description of measures in the care pathway is finalized (Appendix D) No: Proceed to (C)	
(C) **Biopsychosocial investigation, assessment, and dialogue** C1. **carrying out assessments:** The biopsychosocial investigation and assessment are best carried out by different professionals Use the ÖMPSQ (Örebro Musculoskeletal Pain Screening Questionnaire) on pain problems (short version). The questionnaire aims to identify patients who are at risk for chronic pain problems based on psychological and social factors. It cannot replace the medical history or the medical examination but can be used as a basis for discussion between healthcare professionals and patients Other aspects to include in the medical history that can be added according to the patient's needs are • work situation • psychological and mental factors • lifestyle habits • impact on sleep • physical functioning • capabilities and limitations in everyday life • social factors • the patient's views on pain and management • cognitive function	• Describe the current situation and consequences of the chronic pain at home, socially, for work or study, leisure, and well-being • Depending on the information provided by healthcare professionals, performs self-care during the investigation period • Answers questionnaires and estimates work capacity • Participates in the dialogue and discuss self-care advice

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Table A1: *Continued*

Healthcare interventions	Patient's actions
C2: **Summary with the patient**: Provide information in dialogue with the patient: • Summarize the biopsychosocial assessment in primary care • Have a dialogue with the patient to o provide an explanation about chronic pain o discuss the consequences of the patient's situation o provide self-care advice and support (D) **Decision: Is there still a need for care and support?** No: If one or more of the exit criteria in Section 1.4 are met, proceed to Exit, description of actions in the care pathway is finalized (see Appendix D). Yes: If the patient needs care and support to manage their situation both in terms of pain and its consequences, proceed to (E)	
(E) **Making or revising a rehabilitation plan** Make a rehabilitation plan with the following content within one month of diagnosis (see Appendix E) • Assessment in the form of a summary of action (A) and (C) • Treatments and/or measures to be taken, who is responsible, and when should these be completed. Treatments and/or measures can be unimodal, intermediate, or multimodal (Appendix B for definitions) • Information on the measures that the patient can carry out as self-care based on his or her conditions • Objectives of treatments and/or measures • Need for sick leave if applicable. Sick leave is included as part of care and treatment and as a measure in the rehabilitation plan (for possible negative effects of sick leave, Appendix B) • Details about the designated permanent care contact • Assessment of ability to carry out daily activities, work, and other occupations • Information that there will be a follow-up after three months. The healthcare center sends an invitation Support the patient's need for information and encourage credible and evidence-based sources of knowledge Provide an opportunity for a family member or support person to participate in the development of the rehabilitation plan The rehabilitation coordinator is involved if necessary If unimodal or intermediate interventions are involved, proceed to (F) If multimodal interventions are involved, proceed to (H)	• Participates actively in counseling and the development of a rehabilitation plan, particularly in terms of goal setting and self-care • If possible, include family members in the visit • Tests and evaluates results of measures Bring the rehabilitation plan to all healthcare appointments if not digitalized and available in the medical record.
(F) **Unimodal/intermediate interventions** For more information, Appendix B F1. **Execution of actions:** Implements the unimodal/intermediate measures determined in the rehabilitation plan regarding • drug treatment • patient education • physical exercise • mental health • performance of daily activities • sleep hygiene • lifestyle habits • other non-pharmacological treatments and/or measures • work-oriented interventions	• participates in patient education • performs physical exercise as recommended • performs self-care according to recommendations Participates actively by providing feedback on • achievement of goals after treatments and/or measures according to the rehabilitation plan • achievements • hindrance • possible new problems

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Table A1: *Continued*

Healthcare interventions	Patient's actions
F2. **Follow-up:** Revise the rehabilitation plan, if necessary, for example, if unimodal and/or intermediate measures continue or change. Set a new time for follow-up	Participates in the revision of the rehabilitation plan
(G) **Decision: Is there still a need for care and support?** No: If one or more of the exit criteria in Section 1.4 are met, proceed to Exit, description of actions in the care pathway is finalized (Appendix D) Yes: Unimodal and/or intermediate interventions should continue to achieve the objectives of the rehabilitation plan, return to (F) Yes: If the patient needs continued care and support to manage their situation both in terms of pain and its consequences but the patient is not judged to need further unimodal/intermediate interventions, continue to (H)	
(H) **In-depth biopsychosocial assessment, investigation, and dialogue**	
H1. **Carrying out assessments:** Investigate factors that require continued care and support to enable the patient to manage their situation both in terms of pain and its consequences. Have a dialogue about obstacles and problems that have emerged during previous interventions and follow up with a focus on • physical function and ability • overall cognitive ability • sleep • daily activities, habits, and routines • participation in community activities (including work/study) • co-morbidity, including psychiatric co-morbidities • lifestyle habits	Participates actively by • performing the physical exercise as recommended • performing self-care according to recommendations • being involved in the revision of the rehabilitation plan Participates actively by providing feedback on • achievement of goals after treatments and/or measures according to the rehabilitation plan • successes • hindrance • possible new problems • participate and include family members if necessary. • talk about experiences to increase understanding of the overall situation and to facilitate judgement in deciding whether to proceed to (K) or (P) • Access the information • Participate in measures proposed Considers the measures proposed on motivation, behavior, work, and other possible measures.
H2. **Summary with the patient:** Summarize the results of the in-depth assessment for the patient and have a dialogue to create a mutual understanding of the factors that influence the chronic pain Inform the patient about: • why behavioral change can be of importance • how medication can have a negative impact on pain and its consequences • benefits of coordinated interventions from different professions • how co-morbidity and chronic pain can affect each other Address the possible need for other measures regarding • Motivation. If you need support for change, offer motivational counseling • Psychological well-being. For complex psychiatric/psychosocial problems, offer a referral to the relevant specialized consultant • Work. For further mapping of the work situation or studies, enable support from the rehabilitation coordinator • Other measures. In case of need for other measures arising from the dialogue, appropriate contact or referral Revise the rehabilitation plan if necessary If there is a need for interventions on motivation, behavior, work, and other possible interventions, in-depth intermediate interventions are carried out on the needs identified in (H2)	
(I) **Decision: Is there still a need for care and support?** No: If one or more of the exit criteria in Section 1.4 are met, proceed to Exit, description of actions in the care pathway is finalized (Appendix D) Yes: If, after the interventions described in (H2), the patient is judged to need and be able to benefit from measures according to the care pathway, continue to (J)	

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Table A1: *Continued*

Healthcare interventions	Patient's actions
(J) **Decision: Can care and support be provided in the region's primary care?** For a decision on interdisciplinary multimodal pain rehabilitation (IMPRpc or IMPRsc), see National assignment; Pain [4]. A summary of the assessments and measures carried out • Yes: In case of significant burden and strained psychological and social situation, send a referral to interdisciplinary multimodal pain rehabilitation in the region's primary care (IMPRpc). Continue to (K) • No: In case of very high stress, very strained psychological and/or social situation, or very complicated pain situation, send a referral to specialized pain care for interventions regarding pain and its consequences, including interdisciplinary multimodal pain rehabilitation in specialized care (IMPRsc). Continue to (P) The patient retains his or her regular contact in primary care even during rehabilitation in specialized care, regardless of who is responsible for sick leave measures, if relevant. Responsibility for sick leave measures is regulated by regional agreements.	
(K) **Primary care Interdisciplinary Multimodal Pain Rehabilitation (IMPRpc)** For more information, Appendix B Provides targeted and coordinated team interventions by healthcare professionals trained to provide interventions from a biopsychosocial approach, including physical activity, function and ability, psychological and social consequences of chronic pain, return to work/study if appropriate, otherwise return to a satisfactory lifestyle for the patient. Interventions include • revision of the rehabilitation plan in terms of objectives, interventions, responsibilities, and follow-up • coordinated treatments and/or measures • if necessary, revise objectives and interventions under consideration • final conference with the patient and, if possible, family members to evaluate objectives Support the patient with information and refer to sources of knowledge that are credible and evidence-based Join and register patient data in the appropriate national quality registry for monitoring and evaluation with patient consent. The relevant register for interdisciplinary multimodal pain rehabilitation is the Swedish Quality Registry for Pain Rehabilitation (SQRP)	Participates actively in all aspects
(L) **Planning for further care and support** Conduct a conference with the patient and those responsible for actions under (C)–(K) and representatives for treatment and/or actions (K), (P)–(S), or (T) Revise the rehabilitation plan if necessary The rehabilitation coordinator and external stakeholders involved in the patient's sick leave and rehabilitation process are involved when necessary	Participates actively in planning
(M) **Decision: Is there still a need for care and support?** No: If one or more of the exit criteria in Section 1.4 are met, proceed to Exit, description of actions in the care pathway is finalized (Appendix D) Yes: Plan for the implementation of any interventions proposed at the end of (K), (S), or (T). These include, for example, work-oriented measures, continued support in physical training, psychological intervention, interventions around activities, etc. Decide on the timing of the follow-up. Proceed to (N)	

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Table A1: *Continued*

Healthcare interventions	Patient's actions
(N) **Actions after planning**	
N1. **Execution of actions:** Execute actions proposed at closure by (K), (S), or (T) **N2. Follow-up of actions in (N1):** Revise the rehabilitation plan if necessary	• Participates in any actions planned • Participates in the follow-up meeting and the revision of the rehabilitation plan • Provides information on the perception of the impact of the interventions
(O) **Decision: Is there still a need for care and support?** No: If one or more of the exit criteria in Section 1.4 are met, proceed to Exit, description of actions in the care pathway is finalized (Appendix D) **Yes:** If the patient needs previously described interventions based on follow-up information and is judged to benefit from additional interventions, return to (H)	
(P) **Biopsychosocial investigation, assessment, and dialogue** Conduct a team investigation that includes at least the following: • obtaining information about previous assessments and treatments • in-depth pain analysis • review of the medical procedures carried out • review of medication • assessment of physical function and ability • pain psychological assessment • investigation of social factors • assessment of lifestyle habits • assessment of ability to carry out daily activities, work, studies, and other occupations, and possible sick leave • team discussion of findings prior to counseling the patient Provide information and have a dialogue with the patient: • Summarize the biopsychosocial assessment in specialized care. • Have a dialogue with the patient to o provide an explanation about chronic pain o discuss the consequences of the patient's situation o discuss possible measures to be included in the rehabilitation plan Provide an opportunity for a family member or support person to participate	• Participates actively and provides relevant information to healthcare professionals Asks questions about • the explanation of prolonged pain given by the healthcare professionals • the reviews and investigations carried out by health professionals, possible measures that can be included in the rehabilitation plan
(Q) **Decision: Can care and support be provided in the region's primary care?** Yes: If a referral is made to primary care with recommendations, as described in (H) or (K), return to (E) for revision of the plan Yes: If further investigation is required and can be carried out or coordinated in primary care, establish a dialogue with and/or provide information to primary care or referrer about responsibilities, return to (A) No: Proceed to (R)	
(R) **Decision: Need intervention in highly specialized care?** Yes: When assessing/taking a position for referral to the hospital region's specialized care for measures such as • neuromodulation • pain rehabilitation for patients where there is a strong need for cross-regional collaboration • difficulties in changing medication from addictive to other or no drug treatment • other specialized interventions carried out by units serving the whole health region: Proceed to (T) No: If action can be taken in specialized care, proceed to (S)	

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Table A1: *Continued*

Healthcare interventions	Patient's actions
(S) **Actions in the unit** S1: **Medication management:** In consultation with the patient, implement discontinuation and, if necessary, change of medication with follow-up in specialized care or primary care if agreed. After treatment, consider return to (E) or to (S2), (S3), or (T) S2. **Targeted actions:** Carry out targeted actions where necessary on • pain relief • physical function and ability • daily activities • psychological well-being • social factors After treatment, consider proceeding to (L) if the patient can manage their situation after treatments and/or interventions according to the rehabilitation plan, or proceed to (S3) if the patient is able and willing to participate in interdisciplinary multimodal pain rehabilitation S3. **Specialized care Interdisciplinary Multimodal Pain Rehabilitation (IMPRsc)** Implement IMPRsc (for more information, Appendix B). Carry out targeted and coordinated team interventions and actions by healthcare professionals who have specialized knowledge of pain physiology, training in rehabilitation methodology, and work mainly with this patient group from a biopsychosocial approach. This means including physical activity and function, the performance of activities, participation in society roles, environmental factors, psychological and social consequences of chronic pain, return to work or study if appropriate, otherwise return to a satisfactory lifestyle for the patient The interventions include • revision of the rehabilitation plan in terms of objectives, measures, responsibilities, and follow-up • coordinated treatments and/or measures • if necessary, revision of the objectives and measures under consideration • final conference with the patient and, if possible, family members to evaluate objectives Support the patient with information and refer to sources of knowledge that are credible and evidence-based Join and register patient data in the appropriate national quality registry for monitoring and evaluation with patient consent. The relevant register for interdisciplinary multimodal pain rehabilitation is the Swedish Quality Registry for Pain Rehabilitation (SQRP) At the end of specialized care measures, proceed to (L) for checking actions with primary care (T) **Assessment, dialogue, and treatment** • Carry out assessment according to the question • Have a dialogue with the patient on the assessment and possible revision of the previous rehabilitation plan and on treatments and/or measures • Implement treatment and/or measures and/or recommendations within the highly specialized care of the healthcare region with information to the referrer • Have a dialogue with the referrer regarding responsibility for follow-up At the end of highly specialized care measures, proceed to (L)	Actively participate in • drug discontinuation and/or switching, targeted interventions, and/or interdisciplinary multimodal pain rehabilitation • treatment • interdisciplinary multimodal pain rehabilitation (IMPRsc)