
Feasibility study of a revised intervention for addressing student sickness absence: a qualitative evaluation

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Abstract

Background: In the Netherlands, Youth Health Care (YHC) physicians expanded upon the implementation of the Medical Advice for Sick-reported Students (MASS) intervention by introducing a MASS YHC procedure involving a multidisciplinary team. This study examines the feasibility of the revised intervention.

Methods: The study was conducted between September 2023 and June 2024. Qualitative data were gathered using 10 homogeneous focus groups with 42 key users (25 YHC and 17 school professionals). The study was guided by the Measurement Instrument for Determinants of Innovations framework using deductive thematic analysis in Atlas.ti.

Findings: The revised MASS YHC procedure was well understood once its changes were clarified. School and YHC professionals reported that allocating care and requesting absence consultations following a school's Care Advisory Team meeting had become more streamlined. New information materials supported the communication with parents and colleagues.

School professionals generally accepted the procedural adjustments but questioned the added value of jointly assigning care with parents and involving non-physician YHC disciplines in absence consultations; they felt capable of selecting YHC disciplines themselves.

According to YHC professionals, calling parents to assign care and schedule consultations reduced no-shows and made absence consultations smoother and more effective.

When absence consultations involved students who were not enrolled at the YHC professional's affiliated school, communication within the YHC and with school professionals became more challenging.

Most YHC professionals valued the multidisciplinary case discussions for enhancing advisory plans through diverse insights and shared experiences, which also fostered job satisfaction and a sense of shared responsibility. However, some YHC physicians viewed team meetings as a means of oversight rather than support.

All professionals considered the focus group sessions to be helpful for staying informed about the implementation progress, exchanging barriers and success factors, and clarifying the reasoning behind adjustments.

Conclusions: The MASS YHC procedure was well-equipped for implementation following process refinement and the development of support materials. Parental involvement in care allocation was perceived to reduce no-shows and smoothen absence consultations. Multidisciplinary case discussions were perceived to enhance knowledge and job satisfaction. Ongoing, guided implementation with evaluation is crucial to prevent implementation failure due to local adaptations or misinterpretations.

Keywords

Youth Health Care, Multidisciplinary intervention, School absenteeism, Sickness absence, Implementation feasibility, Health service innovation, Intervention adaptation

List of abbreviations

YHC: Youth Health Care

MASS: Medical Advice for Sick-reported Students

MASS YHC procedure: revised MASS intervention with deployment of the YHC team

MIDI: Measurement Instrument for Determinants of Innovations

Declarations

Ethics approval and consent to participate: The Medical Research Ethics Committee Brabant determined that the study does not fall within the scope of the Medical Research Involving Human Subjects Act (WMO) (reference: NW2023-55). All participants provided informed consent prior to their participation. The study was conducted in accordance with the Declaration of Helsinki.

Consent for publication: Not applicable. The manuscript does not contain identifying images or personal/clinical data of participants.

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Background

School absenteeism can severely impact young people [1]. It disrupts social and emotional development, hampers educational progress, and increases the risk of school dropout [2-5]. These effects may persist into adulthood, contributing to lower socioeconomic status [6]. Recent data show that in the Netherlands higher socioeconomic status is associated with an increase of up to 25 years in healthy life expectancy [7]. Addressing school absenteeism is thus vital for individual well-being, public health, and social equity.

Medical absenteeism, one of the most common forms of absence, is typically influenced by multiple interrelated factors [8]. While underlying medical conditions may contribute, psychological difficulties, family dynamics, and school-related stressors are often significant influencing factors. A comprehensive, biopsychosocial assessment is essential for identifying and addressing these interrelated factors. In the Netherlands, Youth Health Care (YHC) is well-positioned to address student medical absenteeism because of its holistic, socio-medical approach and strong links to education, health, and social sectors [9].

Within this context, the Medical Advice for Sick-reported Students (MASS) intervention was developed for addressing medical absenteeism among students [10]. MASS outlines the procedures following a student's sickness report (see Figure 1. Flowchart of the MASS

(YHC physician) procedure). If indicated, the school requests a consultation with the YHC physician (step 4c), who then meets with the student and parents to create a plan to improve student's well-being and reduce absenteeism (step 5). The plan is monitored to ensure ongoing, personalized support and timely care (step 6). MASS is built on two key elements: 1) early engagement of parents to help identify causes and develop support strategies, and 2) deployment of the YHC physician for in-depth assessments using socio-medical expertise.

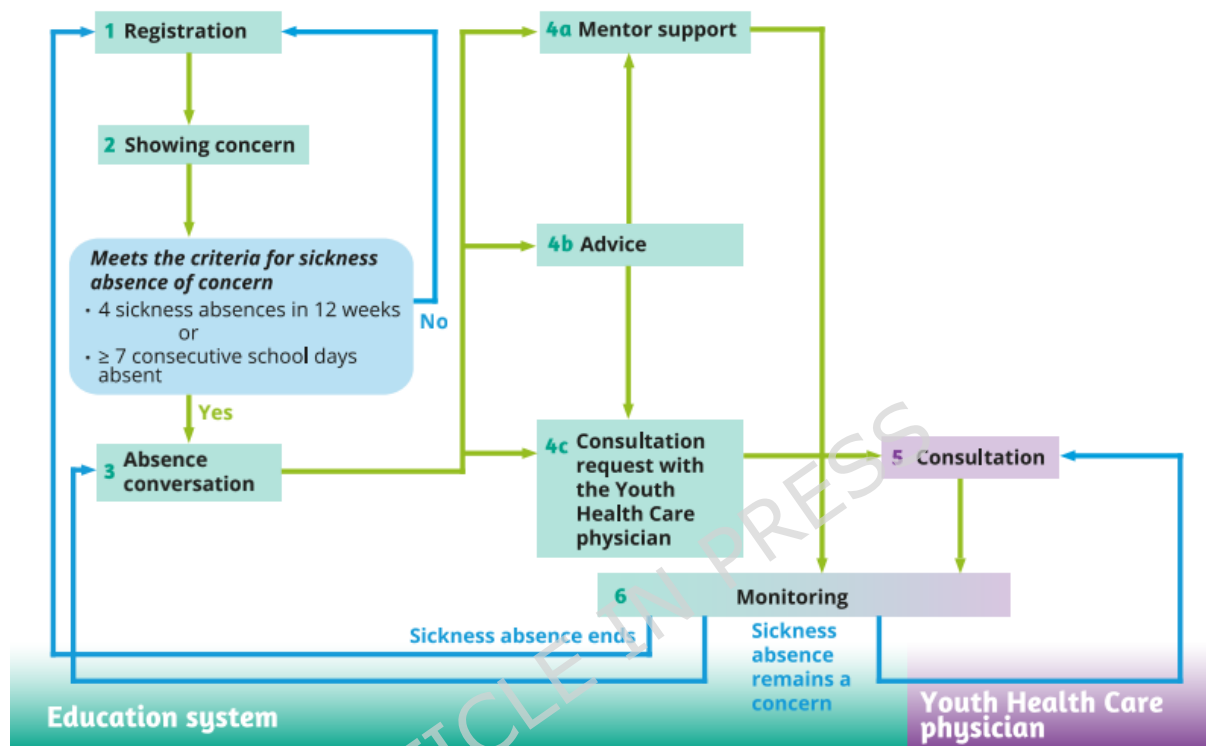


Figure 1. Flowchart of the MASS (YHC physician) procedure

MASS places high demands on YHC physicians, especially as policy focus on this issue grows [11]. While YHC physicians provide crucial socio-medical expertise, follow-up care might be better handled by other YHC professionals like nurses or social workers, based on student needs. However, care handovers often fail because sensitive information shared in initial consultations can make students and families hesitant to repeat their story, risking loss of trust and support [12]. The key challenge is enabling YHC physicians to provide their socio-medical expertise to assess the problem thoroughly while involving the right professionals for ongoing care, minimizing unnecessary transitions. To address these challenges, a revised MASS model was introduced that keeps its core elements but strengthens the YHC team's expertise. It preserves the YHC physician's diagnostic role while allowing flexible involvement of other professionals, minimizing disruption to student-parent-professional relationships.

In the revised MASS YHC, after the school completes the first four steps, it can formally request a YHC consultation. Parents are then called by YHC to decide together which YHC professional best fits the student's needs, and an appointment is scheduled (Step 5). The selected professional meets with the student and parents to create a shared support plan (Step 6), followed by a team meeting to discuss the plan and revise it where necessary (Step 7). The plan's implementation is actively monitored by school and YHC to ensure

continuous, tailored care, aligning with the original MASS (Step 8) (see Figure 2. Flowchart of the MASS (YHC) procedure).

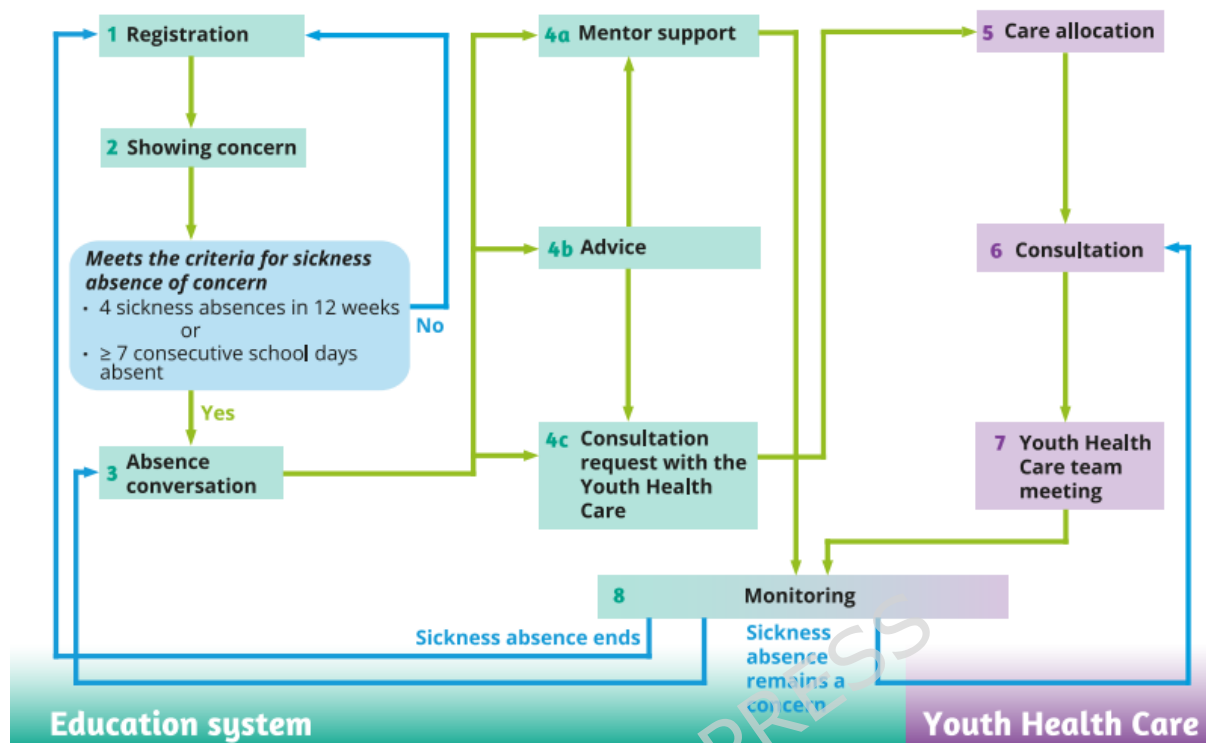


Figure 2. Flowchart of the MASS (YHC) procedure

This study investigates the feasibility of implementing the revised MASS YHC in daily practice, conceptualized in terms of acceptability, practicality, and perceived added value for professionals, as well as organizational preconditions for implementation. .

Accordingly, the study addresses two research questions: (1) What are professionals' experiences with the revised intervention in terms of acceptability and practicability, and what areas do they perceive as needing improvement? and (2) What are the barriers and facilitators for users and the organization that influence its implementation in daily practice, according to the professionals?

Methods

Study design

To explore the feasibility of the revised MASS YHC, qualitative research was conducted through homogeneous focus groups involving two key user groups: YHC professionals (care allocation team and YHC team members) and school professionals (school care coordinators). We examined how professionals experienced the intervention in routine practice, including perceived benefits, challenges, suggested improvements, and user- and organization-level barriers and facilitators affecting implementation. This method allowed safe and open discussion on collaboration, encouraging participants to share and reflect on experiences [13, 14]. Reporting of this study was guided by the Consolidated Criteria for Reporting Qualitative Research (COREQ) framework to enhance transparency [15]. The study was designed to allow the intervention and its supporting materials to be refined throughout the study period. Participant suggestions were systematically reviewed and considered by the research team. Adaptation decisions were guided by

their consistency with the core elements of MAZL (i.e., preservation of intervention fidelity) and their potential to enhance clarity, feasibility, and usability within the study context. The adaptations involved the development of supplementary materials to support communication, textual refinements, and clarification of procedural steps, which were not always sufficiently elaborated in the initial materials. All adaptations were documented in an ongoing adaptation log and incorporated directly into the intervention materials. Revised materials were subsequently shared with participants, and their perceived utility and acceptability were discussed in follow-up focus groups. The appropriateness of these modifications was assessed through the continued collection of data, facilitating the ongoing process of reflection and iterative refinement throughout the study.

Research team and reflexivity

The focus groups were led by the first and second authors (YV and ND), while a third researcher (MP or ME) was present to take notes and observe the discussions, with the aim of identifying potential biases in data collection and analysis related to assumptions or influence from the developers. YV and ND were involved in the development of the revised MASS YHC but were not involved in its daily implementation; the same applied to MP and ME. None of the researchers had a prior professional relationship with the participants.

Setting

Data were collected from September 2023 to June 2024 at a medium-sized YHC service in central Netherlands, part of a Regional Public Health Service. This service had long experience with MASS, contributed to its revision, and was willing to test the new MASS YHC in practice.

To implement the revised MASS YHC, the YHC service created a single email address for schools to request consultations. Additionally, a care allocation team was set up to contact parents, assign care and schedule a consultation with the most suitable YHC professional, guided by a predefined set of questions. Whenever possible, the professional linked to the student's school was chosen; otherwise, a colleague from the same YHC discipline was assigned. Weekly online YHC team meetings were held to discuss cases, and one YHC physician (MASS coordinator) served as the point of contact for professionals and researchers.

Study participants

The study included 25 YHC professionals (11 physicians, 5 nurses, 1 nurse practitioner, 6 youth social workers, and 2 administrative assistants) and 17 care coordinators from 24 secondary schools. All participants were involved in the implementation and took part in focus groups of 4 to 14 people. Each school had a YHC team with at least a YHC physician and a YHC nurse; one school had a nurse practitioner instead, and 19 schools also included a youth social worker.

Invitations were sent via email by the MASS coordinator. All professionals from the participating YHC organizations (approximately 28–30; the number of participants varied during the study period due to long-term absence and staff turnover) and schools (24 care coordinators) were invited to participate in the focus groups. Registrations showed a sufficiently diverse group in terms of profession, role, experience, team, and school. No professionals formally declined participation; all absences were due to scheduling constraints.

Participants were informed about the researchers' roles, the aim of the study, and the voluntary nature of participation.

Procedure

The research started with a live kick-off meeting on September 7, 2023, during which the goals and steps of the revised intervention were presented. Between November 2023 and June 2024, ten focus groups were held: three with the care allocation team, three with the YHC teams, one with YHC physicians, one with all YHC professionals, and two with school professionals. Sessions were scheduled based on participant availability. The first focus group with the school professionals was held during an existing meeting with all 24 care coordinators; nine of them joined a second session. All focus groups were held online via a secure videoconferencing platform. The sessions were attended solely by the participants and researchers.

The use of the MIDI

The Measurement Instrument for Determinants of Innovations (MIDI) framework [16] was selected for its systematic and evidence-based approach to identifying factors that influence the implementation of innovations. This study focuses on determinants related to the innovation itself, its users, and the organizational context, domains particularly relevant for refining the revised MASS YHC and supporting its successful integration into daily practice. Although professionals are familiar with the original MASS, the revision may introduce new implementation challenges. MIDI enables a targeted analysis of practical barriers and facilitators at both individual and organizational levels, aligning with the study's two research questions.

Data collection

Ten online semi-structured focus group interviews, averaging 60 minutes, were conducted by two researchers. Sessions lasted between 50 and 75 minutes. Recordings were transcribed using Amberscript, anonymized, and manually corrected before being imported into Atlas.ti [17]. The recordings were then deleted. Field notes were taken during and immediately after each session to capture contextual details and group dynamics.

Topic guides, based on the MIDI framework, included open-ended questions covering three areas: the innovation (e.g., care allocation and YHC team meetings), the users (e.g., professional benefits and drawbacks, outcome expectations, professional obligation, cooperation, social support, self-efficacy and knowledge), and the organization (e.g., material resources, facilities, coordinator and performance feedback). Topic guides were derived from a main guide and adapted to participants' roles and the stage of implementation. The main topic guide is provided in Supplement 1. After the second, fourth, sixth, and eighth interviews, intermediate analyses were performed to check topic coverage. Questions were adjusted as needed, and participants were included until data saturation was reached, when no new themes emerged [18].

Data saturation was achieved when no new codes or themes emerged in consecutive focus groups, as determined during interim analyses. Preliminary findings (but not the transcripts) and, if applicable, adjustments to the intervention or materials were shared with the participants before a subsequent focus group and discussed during the focus group to enhance credibility.

Analysis

A primarily deductive data analysis was conducted in Atlas.ti using the domains of the MIDI framework as an initial coding structure. Additional themes were allowed to emerge inductively when data did not fit predefined categories. Two researchers independently coded the first three transcripts to develop a preliminary coding tree. The remaining transcripts were coded by the first researcher and discussed iteratively with the research team until consensus was reached. The coding structure was refined throughout the analysis process [19].

Ethical considerations

The Medical Research Ethics Committee Brabant determined that the study does not fall within the scope of the Medical Research Involving Human Subjects Act (WMO) (reference: NW2023-55). Participants were informed verbally and in writing about the study's purpose, confidential data handling, and exclusive use for research. Interviews began only after written consent was received, and participation was voluntary.

Findings

Findings are organized by research questions. A full mapping of findings to MIDI determinants, interview questions and illustrative quotes is provided in Table 1 in Supplement 2.

Table 1: Findings Mapped to MIDI Determinants and Interview Questions

MIDI domain	Determinant	Findings	Corresponding interview questions	Illustrative quote
Innovation	Procedural clarity / Role clarity	- School professionals were uncertain about consultation requests and MASS YHC procedures. - Communication challenges with parents due to unclear processes. - Automatic email response and supportive materials improved understanding. - Step 4c unclear; uncertainty about discipline preference and registration.	- Describe how the care allocation process and YHC team meetings work in practice - How clear are roles, tasks, and responsibilities? - How confident do you feel in selecting the appropriate YHC discipline for a student, and why? - Who do you think is best suited to handle the care allocation phone call, and why?	"Then I ask the YHC physician about it, and she tries to find out what is going on. Then I hear back – for example – that the parents had let them know in a phone call that they're not coming, or don't want to come" – SchoolCareCoordinator3
Innovation	Correctness	- Some school professionals felt confident choosing the	- How confident do you feel in selecting the appropriate YHC discipline for a student,	"There are students we really think should see a YHC physician, but they're actually being

		YHC discipline themselves. - Questioned the added value of non-physician roles. - Care allocation was initially time-consuming because nurses acted as care providers. - Medical assistant improved efficiency with clear procedures. - Team discussions determined who should handle complex or specialist cases.	and why? - Who do you think is best suited to handle the care allocation phone call, and why? - How do you experience the added value of YHC professionals compared to in-school professionals?	called to see the YHC nurse. So, in the end, I'm left wondering, what do we gain from this?" – SchoolCareCoordinator6
Innovation	Completeness	- Pre-designed questionnaire initially challenging to use. - Parent input, team meetings, and focus groups helped make more targeted decisions. - Insights guided refinement of the questionnaire. - After team meetings, fewer changes were needed.	- Describe how the care allocation process and YHC team meetings work in practice - How clear are roles, tasks, and responsibilities? - Which aspects are easy or difficult to understand or apply? - What parts require the most effort in daily practice?	"There's a medical issue, and I need to request information from the pediatrician involved - that's about it. I think that could be a great case for a nurse practitioner or youth nurse." – YHCNurse2
Innovation	Complexity	- Many stakeholders involved; keeping everyone informed was hard. - Communication challenges for students outside the professional's	- What challenges or disadvantages have you experienced? - Are there any unintended consequences of implementing this innovation? - Which aspects are easy or difficult to understand or apply? - What parts require the most effort in daily	"I lose track because the student might have been seen by someone else, and then I'm at the Care Advisory Team meeting and they ask me about an update, and I'm left speechless." – YHCphysician8

		school. - Uncertainty about responsibility for monitoring advisory plans. - Intervention involved multiple steps and overlapping responsibilities.	practice? - To what extent do you feel that YHC nurses or physicians tend to act as care providers rather than allocators during the allocation process?	
Innovation	Compatibility	- Initial resistance to contacting parents directly; over time familiarity increased effectiveness. - Centralized registration and flexible assignment required operational adjustments. - Some physicians initially perceived team meetings as oversight; later recognized added value. - Non-physician professionals benefited from case discussions in team meetings.	- Are there any unintended consequences of implementing this innovation? - How well does this innovation fit with your current way of working? - In what situations does the innovation seem more or less suitable?	"I wouldn't participate, because in my view, I have sufficient expertise to handle it myself. So, why would I join?" – YHCphysician9
Innovation	Relative advantage / Relevance	- Team meetings and supportive materials improved communication and understanding. - Added value of interdisciplinary expertise recognized after practice. - Clear procedures enhanced efficiency and professional	- How does this innovation differ from previous ways of working? - What works well about the innovation? - What are the main goals of this innovation? - To what extent does it align with the needs of children, families, or clients? - How do you experience the added value of YHC professionals compared to in-school professionals?	"That's kind of the strength of the meetings, you can easily brainstorm, quickly follow up, learn from each other, and see how other schools handle things." – YHCphysician7

		confidence. - Improved alignment with children, families, and clients' needs.		
User	Personal benefits / drawbacks	- Phone contact and joint appointment scheduling reduced no-shows and improved consultations. - Multidisciplinary case discussions enhanced advice quality, professional development, job satisfaction, and reduced isolation. - Challenges when working with students from unfamiliar schools.	- How has this innovation affected your daily work? - What benefits do you experience as a professional? - What drawbacks or additional burdens do you experience?	"That has to do with the fact that the colleague taking over often doesn't know the school, and that makes me think: this plan might not work for this school, because really, each school operates differently. You have different types of care coordinators, and the support options within schools also vary." – YHCphysician9
User	Outcome expectations	- Most school professionals expected positive outcomes (expedited allocations, multidisciplinary input). - Some doubted care quality when non-physicians were involved. - Nurses play an important role in reducing absenteeism. - School professionals sometimes hold unrealistic expectations in complex cases.	- What outcomes do you expect for children/families/clients? - What outcomes do you expect for yourself or your team? - To what extent have these expectations been met so far?	"They were concerned that if the YHC physician sees fewer students, the quality of care might decline." – YouthSocialWorker2
User	Professional obligation / Subjective norm	- Schools see monitoring absenteeism as part of their	- To what extent do you feel it is part of your professional responsibility to use	"I hear what the aim of the multidisciplinary discussions is, that every child has the

		role, but reminders about YHC appointments are seen as optional. - YHC professionals felt responsible to be well-prepared for parent calls and to participate in team meetings. - Socio-medical expertise viewed as essential; time constraints hinder participation.	this innovation? - Are there professional norms or values influencing your engagement?	right to medical attention, and I agree with that. Because if that wasn't the case, and physicians wouldn't join the multidisciplinary discussions, you'd lose the medical perspective and insight." – YHCphysician1
User	Motivation to comply	- Motivation stems from professional responsibility, belief in every student's right to medical attention, and perceived added value of multidisciplinary collaboration.	- What motivates you to use—or not use—the innovation?	"It's mostly about practical judgment rather than needing constant confirmation." – YHCNurse4
User	Cooperation / Social support	- Schools generally willing to collaborate; success depends on personal relationships and responsiveness. - Peer support strong among non-physician YHC professionals. - Some YHC physicians resisted new MASS version, avoiding team meetings. - Contact with parents clarified student situations and	- How has cooperation with colleagues or other disciplines changed? - To what extent do you feel supported by colleagues or supervisors? - Who do you turn to when you have questions or difficulties? - How did contact with parents influence your understanding of the student's situation?	"That's kind of the strength of the meetings, you can easily brainstorm, quickly follow up, learn from each other, and see how other schools handle things." – YHCphysician7

		supported targeted advice.		
User	Self-efficacy / Knowledge / Training	- Initial uncertainty about care allocation decisions improved with experience. - Nurses' roles developed over time. - MASS training provided foundation; practical experience via consultations and team meetings crucial. - Pre-designed questionnaire initially challenging; team meetings and focus groups enhanced decision-making.	- How confident do you feel in applying this innovation in your work? - What knowledge or skills are required to use the innovation effectively? - What training or learning support have you received, and what is still needed? - To what extent did the pre-designed questionnaire support you in selecting the appropriate YHC discipline? - What information was missing or unclear when using the questionnaire? - How did YHC team meetings or focus groups contribute to making more targeted care allocation decisions?	"At first, I felt a bit unsure... Now I double-check things by thinking, 'Okay, I've got this'." – YHCNurse4
Organization	Material resources / Facilities	- MASS coordinator played a crucial role: accessible, responsive, organized materials, facilitated team meetings. - Schools' active engagement and coordination essential. - Availability of tools and support helped professionals implement MASS effectively.	- What resources are available to support this innovation? - Are these resources sufficient? Why or why not? - What practical barriers do you encounter in the organizational setup?	"It's really great that the MASS coordinator is there. You can always ask her and she'll take care of it." – YHCNurse3
Organization	Coordinator / Leadership support	- Coordinator ensured smooth implementation and support.	- How is the implementation of this innovation coordinated within the organization?	"It's really great that the MASS coordinator is there. You can always ask her and she'll take care of it." –

		- Guidance from coordinators valued by professionals. - Collaboration with schools reinforced importance of leadership and coordination.	- What role do coordinators, managers, or team leaders play? - How clear and helpful is the guidance you receive from leadership?	YHCNurse3
Organization	Performance feedback	- Focus group sessions helped participants stay informed, exchange barriers and success factors, and clarify reasoning behind adjustments. - Feedback facilitated learning and ongoing improvements.	- Do you receive feedback on how the innovation is used or on its outcomes? - How useful is this feedback for improving your practice? - What feedback or monitoring would you find helpful?	"You can discuss barriers and solutions, and see what adjustments are made and why." – YHCNurse5
Organization	Organizational support / Sustainability	- Active engagement of YHC and schools facilitates implementation. - Coordinator and team support help sustain practice. - Structural and procedural embedding important for long-term success.	- To what extent does the organization prioritize this innovation? - What factors within the organization facilitate or hinder sustained use? - What needs to change to ensure long-term embedding of this innovation?	"Active engagement of schools and the coordinator really ensures the MASS is implemented successfully." – YHCphysician7

(1) What are professionals' experiences with the intervention, and what areas do they perceive as needing improvement?

This section presents findings on the key revision elements, care allocation and YHC meetings, framed by the MIDI determinants related to the innovation itself.

Regarding procedural clarity:

School professionals expressed uncertainty regarding the status of their consultation requests and the operational procedures of the MASS YHC, which hindered them from effectively informing parents. YHC professionals frequently encountered communication challenges with parents, partly because school professionals struggled to explain the referral process and YHC's role.

"Then I ask the YHC physician about it, and she tries to find out what is going on. Then I hear back – for example – that the parents had let them know in a phone call that they're not coming, or don't want to come" SchoolCareCoordinator3

To address this issue, an automatic email response was introduced to explain the steps following registration.

Moreover, YHC professionals highlighted the need for supportive materials to explain the procedure and its underlying rationale to school professionals. In response, a presentation and informational leaflets were developed. Participants reported that these resources improved communication and enhanced mutual understanding.

The MASS YHC procedure was clear to most professionals except for step 4c, initiating a consultation following a school's Care Advisory Team meeting with the YHC physician. Uncertainty remained about how preferences for a specific YHC discipline were considered in care allocation and whether registration should still go through the care allocation team.

"It is cumbersome. When a student has been discussed in the Care Advisory Team meeting, it is quicker to allocate the care to me, as I was present at that meeting. The question is, in that case, whether you consider enough: 'Is this correctly allocated to me?' Because it might as well be a consultation that a YHC nurse could do. You will lose that (step in the process), but when I thought about it, I realised: 'this (not considering another professional?) is also how the process takes longer.'" YHCphysician5

Through discussion, consensus was reached on the process that the YHC physician attending the school's Care Advisory Team will discuss care allocation with parents guided by the calling teams' questions and schedule an appointment with a YHC professional possessing the appropriate expertise.

Regarding correctness:

Some school professionals felt confident in selecting the appropriate YHC discipline themselves and saw the parent phone call as unnecessary. They also questioned the added value of non-YHC physician roles, given the presence of in-school orthopedagogues, psychologists, and social workers.

"There are students we really think should see a YHC physician, but they're actually being called to see the YHC nurse. So, in the end, I'm left wondering, what do we gain from this?" SchoolCareCoordinator6

Initially, the care allocation process was time-consuming because YHC nurses, following routine practice and parental expectations, often acted as care providers. This involved reviewing student files and discussing the presenting issues with parents during care allocation contacts. Some YHC physicians suggested that a medical assistant could

handle this task efficiently if procedures were clearly defined, avoiding the tendency to act as a care provider. When a medical assistant took over, she reported that the calls went smoothly, were not time-consuming, and that she could efficiently schedule appointments using the guiding questions and written explanation of the MASS approach.

YHC professionals discussed which discipline is best suited for complex long-term sick leave cases. Some favored assigning these to the YHC physician, while others supported initial assessments by a nurse. They also debated whether students already receiving specialist care could be seen by the nurse practitioner. It was decided to address this on a team- and professional-level basis, taking into account individual expertise and experience.

Regarding completeness

Initially, the care allocation team faced challenges using the pre-designed questionnaire to select the appropriate YHC discipline. Through parent input during calls and mutual learning in YHC team meetings and focus groups, they made more targeted decisions and were able to select the appropriate YHC discipline. These insights guided the refinement of the questionnaire to better support future teams.

"There's a medical issue, and I need to request information from the pediatrician involved - that's about it. I think that could be a great case for a nurse practitioner or youth nurse." YHCNurse2

It was noticed that, after a YHC team meeting, changes in disciplines were seldom needed.

Regarding complexity

Participants emphasized that the intervention's complexity stemmed mainly from the many stakeholders involved, making it hard to keep everyone consistently informed. The complexity increased when consultations involved students not enrolled at the school where the YHC professional is based, making communication within YHC and with school professionals more challenging.

"I lose track because the student might have been seen by someone else, and then I'm at the Care Advisory Team meeting and they ask me about an update, and I'm left speechless." YHCphysician8

Furthermore, in such cases, there was uncertainty about who held responsibility for monitoring the implementation of the advisory plans for these students.

"How long should a YCHP stay involved with the student? It's a team effort. Also if it's not from your own school. I know there's a lot of concern about that. Of course, you could hand it over to the school's youth nurse, perhaps with the youth physician in cc." YHCphysician7

Regarding compatibility

Initially, there was significant resistance among the YHC professionals contacting parents directly, as they were accustomed to sending invitations and conducting file-based

assessments. However, over time, participants reported increased familiarity that made the calling process more manageable and effective.

The pilot's centralized registration system and flexible assignment of YHC professionals for absence consultations necessitated operational adjustments. Some YHC physicians, accustomed to working independently, initially perceived YHC team meetings as oversight rather than added value, as they felt confident in forming advisory plans on their own. However, after experiencing the added value, specifically, leveraging each other's expertise and networks, some of them revised their perspective.

"I wouldn't participate, because in my view, I have sufficient expertise to handle it myself. So, why would I join?" YHC physician9

At the same time, most non-physician YHC professionals reported that, although they had received training in MASS, their lack of experience with conducting absence consultations made the task initially very challenging. They emphasized that discussing cases in YHC team meetings significantly supported their professional development.

(2) What are the practical barriers and facilitators for users and the organization, according to the professionals?

Findings are presented according to MIDI determinants concerning users and organization.

Regarding personal benefits and drawbacks

YHC professionals felt that parents generally appreciated the phone contact and joint appointment scheduling. They believed that it contributed to fewer no-shows, smoother consultations, and more effective consultations because the purpose had been prespecified.

"There was a mother who was really very resistant, and I had to clarify a lot to her. She was at YHCNurse4 yesterday, and she didn't bring it up at all. So you can tell that phone call actually helped, because in that conversation there wasn't an issue anymore."
YHCNurse2

Many YHC professionals found it challenging to work with students from schools to which they were not affiliated, citing difficulties in coordinating and follow-up. School professionals expressed frustration by low engagement and irrelevant advice from unfamiliar professionals. YHC physicians reported feeling unprepared when students previously seen by another YHC professional were discussed in Care Advisory Teams, leading to discomfort, unclear monitoring responsibilities, and frustration over conflicting advice.

"That has to do with the fact that the colleague taking over often doesn't know the school, and that makes me think: this plan might not work for this school, because really, each school operates differently. You have different types of care coordinators, and the support options within schools also vary." YHC physician9

"As soon as another YHC physician gets involved, I get the form back and, well, I think: I can't work with this." SchoolCareCoordinator1

Some YHC professionals felt uneasy about being observed when presenting individual students. At the same time, most valued the multidisciplinary case discussions for refining their advice and gaining diverse insights. They appreciated learning how different schools and colleagues handle similar issues.

"That's kind of the strength of the meetings, you can easily brainstorm, quickly follow up, learn from each other, and see how other schools handle things." YHC physician7

According to most YHC professionals, discussing cases during YHC team meetings contributed to increased job satisfaction and a sense of shared responsibility among professionals, reducing feelings of isolation in their work.

"I really like joining multidisciplinary meetings, not just to discuss my own students, but also to hear the advice from others. I think this advice is highly valuable and insightful. You're not in it alone anymore." YHC Nurse7

Regarding outcome expectations

While most school professionals anticipated positive outcomes from collaboration with the YHC team, such as expedited allocations and multidisciplinary input, some voiced concerns about the quality of care when non-physicians are involved, questioning nurses' capacity to refer to general practitioners or specialized services. Conversely, most YHC professionals emphasized the important role of nurses in reducing absenteeism. They also observed that school professionals often hold unrealistic expectations, particularly in more complex cases.

"They were concerned that if the YHC physician sees fewer students, the quality of care might decline." YouthSocialWorker2

Regarding professional obligation

Interviewed school professionals saw monitoring absenteeism as a key school responsibility but generally did not view reminding parents about YHC appointments as part of their role. Still, reminders were sometimes given, as supporting YHC attendance was seen to align with the school's interests.

"I don't see it as my job, but I do have a problem when a child is often sick. So I'd rather make one extra phone call than have to chase things up later." SchoolCareCoordinator2

Initially, the interviewed YHC professionals of the calling team considered it their responsibility to be well-prepared when contacting parents for care allocation, including reviewing relevant information in advance and documenting the outcome appropriately. Although these calls were not intended as consultations, maintaining that boundary proved challenging in practice. While scheduling appointments was not viewed as a core professional task, typically delegated to medical assistants, participants expressed doubts about the assistants' ability to make informed care allocation decisions.

Most YHC professionals felt a strong responsibility to attend team meetings, especially when their own students were discussed, aiming to provide relevant input. They believed that socio-medical expertise remains essential and that every student has the right to a medical examination. However, time constraints often hindered their participation.

"I hear what the aim of the multidisciplinary discussions is, that every child has the right to medical attention, and I agree with that. Because if that wasn't the case, and physicians wouldn't join the multidisciplinary discussions, you'd lose the medical perspective and insight." YHC physician1

In one focus group, a YHC professional proposed limiting case discussions, but this suggestion was not endorsed by the other participants.

Regarding cooperation

YHC professionals note that schools are generally open to engaging with the revised MASS, but successful collaboration depends on strong personal relationships and positive past experiences. Meeting schools' specific needs, such as confirming receipt and processing of requests, is also key to effective cooperation.

Social support

During the focus groups, non-physician YHC professionals reported strong peer support, whereas several YHC physicians resisted the revised MASS due to long-standing use of the original MASS version and doubts about other disciplines' competencies. Consequently, they avoided YHC team meetings and continued to manage referrals independently, leaving YHC physicians who were in favor of adopting the revised MASS feeling unsupported.

School professionals demonstrated a willingness to collaborate and support one another, provided that the student received timely and adequate care.

Regarding self-efficacy

Initially, some YHC professionals doubted their ability to make appropriate decisions and advice plans that would remain stable after YHC team review. However their self-efficacy increased over time. YHC professionals observed nurses' role development.

"At first, I felt a bit unsure, like, 'Am I doing this right?' But after more consultations, I've gotten a pretty good sense of how things are going. Now I double-check things by thinking, 'Okay, I've got this,' or sometimes, 'Should I report this back to the school?' So, it's mostly about practical judgment rather than needing constant confirmation."

YHCNurse4

The school professionals indicated that they would be able to implement the revised MASS well if they can explain to parents how the referral to the YHC works and what its added value is for them.

Regarding knowledge

All participating non-physician YHC professionals stated that while MASS training provides a solid foundation, practical experience through absence consultations and YHC team meetings is crucial for gaining the expertise needed to implement MASS effectively.

At the organizational level; Regarding material resources, facilities and coordinator

According to the YHC professionals, the MASS coordinator within the YHC service played a crucial role in the implementation process, primarily due to her accessibility and

responsiveness to emerging questions. They valued her proactive organization of materials and facilitation of YHC team meetings.

*"It's really great that the MASS coordinator is there. You can always ask her and she'll take care of it."*YHCNure3

A similar dynamic was observed in their collaboration with schools, where effective coordination was likewise seen as essential for successful implementation. The professionals emphasized the importance of schools being actively engaged in this role.

Regarding performance feedback

Focus group participants, both YHC and school professionals, found the sessions valuable especially because they allowed them to stay informed about implementation progress, exchanging barriers and success factors, and clarifying the reasoning behind necessary adjustments.

Discussion

This study examines the practical feasibility of the MASS YHC procedure by exploring professional experiences and key factors affecting implementation. YHC professionals and care coordinators from 24 secondary schools where the MASS YHC was implemented were interviewed using homogeneous focus groups.

First, it became evident that the intervention was well-defined once the care allocating process, including consultation requests following Care Advisory Team discussions, was clearly outlined and supported by developed materials. Nonetheless, implementation may fail due to misalignment with the organizational or professional context. For example, in this case, the addition of scheduling absence consultations with students not enrolled at the school where the YHC professional is affiliated, can create logistical and relational barriers. Similarly, resistance among professionals, due to unfamiliarity with and a lack of perceived value in involving parents in care decisions or consulting colleagues about the organization of care, can hinder adequate implementation. This dynamic reflects the core assumptions of Realist Evaluation, which posits that the context in which an intervention is implemented triggers specific mechanisms that influence outcomes, a framework commonly known as CIMO (Context–Intervention–Mechanism–Outcome) [20]. According to this perspective, program theories are primarily shaped by existing knowledge, prior research, and intervention designers' assumptions about how and why an intervention is expected to work. Subsequently, interventions are embedded in a social reality that shapes implementation processes and the ways in which individuals interact with the intervention, or not. If such factors are not systematically identified and addressed, an intervention risks being dismissed on unfounded grounds [21]. This underscores the need for thorough, context-sensitive process evaluation when implementing innovations in practice.

A second key finding is that both school and YHC professionals report being able to identify the most appropriate YHC discipline to support students and parents. School professionals base their judgment on their familiarity with the student in the school context and prior discussions with the parents regarding the sickness absence. In contrast, YHC professionals draw their conclusions from a review of the student's file. However, both school and YHC professionals tend to underestimate the limitations of their own perspectives, which are constrained by limited insight into the home context

and parents' reluctance to share sensitive information with schools. Given confidentiality concerns, sharing medical data at school is inappropriate. Involving parents through shared decision-making enhances clarity and is valued by parents, as reflected in this study by lower no-show rates and more effective consultations according to the YHC professionals. Recent evidence also suggests shared decision-making has neutral to positive effects on care quality across settings [22]. These findings highlight the importance of parent involvement in care allocation.

A third key finding is the strong appreciation expressed by most YHC professionals for multidisciplinary case discussions. These meetings allow professionals to reflect on their care strategies and learn from the diverse approaches used by colleagues across schools and regions. In healthcare, multidisciplinary teamwork is widely endorsed as a strategy to manage the increasing complexity of medical and psychosocial care [23]. At the organizational level, such collaboration has been shown to enhance healthcare efficiency [24]. Moreover, multidisciplinary teamwork is associated with increased job satisfaction, a stronger sense of shared responsibility, and reduced professional isolation [25]. Our findings align with this: YHC professionals reported that case discussions within YHC team meetings contributed to greater satisfaction and collective ownership of care processes, thereby reducing feelings of isolation. However, successful implementation requires attention to time and organizational demands [26]. Clear communication of the meetings' purpose is essential to avoid perceptions of control. In our study, some physicians indeed expressed concerns about feeling monitored. Moreover, scheduling and attending meetings is time-consuming and may cause resistance in future implementations. Emphasizing their value and ensuring efficient organization can help prevent resistance.

Strength and limitations: First, the focus groups facilitated idea sharing and collective perspectives (strength), but were less suited for personal insights. Nonetheless, the positive atmosphere suggested that participants were open and that essential information was not withheld (limitation).

Second, the research was conducted by the intervention's developer, which safeguarded fidelity to its core elements (strength) but also posed a risk of bias through undue influence (limitation). To mitigate this, interviews were co-led by a second researcher and the organization's MASS coordinator, ensuring both fidelity to the intervention and recognition of the organization's contributions (strength).

Third, voluntary participation enabled engaged feedback to refine the intervention (strength), and could also have ensured that not all professionals shared their opinion (limitation). However, the organization had previously decided to implement the revised version, so the professionals had a significant interest in participating in the pilot phase and in making decisions (strength).

Several recommendations emerge. First, to prevent care allocation from becoming a counseling session, consider delegating related calls to a medical assistant. Second, reduce logistical and relational barriers by assigning absence consultations only to the YHC professional affiliated with the student's school. Third, monitor implementation closely, as adding elements to the intervention may undermine implementation success. At the same time, existing successes can actually enhance implementation. Fourth, appoint a coordinator to maintain stakeholder engagement and address organizational challenges. Finally, future research should evaluate the intervention's impact on care satisfaction among students and parents, and its effectiveness in reducing absenteeism.

Conclusion

Successful implementation of the MASS YHC procedure was achieved after the care allocation, also following discussion in the Care Advisory Team, was more clearly defined. Calling parents to assign care and schedule appointments was considered beneficial by YHC professionals, as it provided clarity to parents and was reported to be associated with more constructive absence consultations and a perceived reduction in no-shows. The perceived benefits of multidisciplinary case discussions, such as increased professional knowledge and job satisfaction, were deemed to outweigh the required time and organizational efforts. Guided implementation, supported by ongoing process evaluation, is critical to prevent failure due to local adaptations or misinterpretation.

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