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Strengthening Collective Professional Engagement around COPD: An Action Research in Primary Care

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a chronic respiratory disease characterised by persistent and progressive airflow obstruction. It is caused by smoking in 85% of cases, but may also result from environmental exposures, particularly occupational ones[1,2]. COPD became the fourth leading cause of death worldwide in 2021[2]. In France, it affects 3.5 million patients[3]. An estimated 70% of COPD cases worldwide may be underdiagnosed[4].

Less well diagnosed than other common chronic diseases such as hypertension or diabetes, COPD warrants screening in primary care. Spirometry enables early identification essential to slowing disease progression. A 2022 report co-produced by the French National Authority for Health (HAS) and the National Health Insurance Fund (CNAM)[5] defined the main quality indicators for the care pathway of patients at risk of, or affected by, COPD. These cover six dimensions: early identification of at-risk patients; diagnosis disclosure, patient information and involvement; secondary prevention; coordination and multidisciplinarity; disease progression and exacerbation follow-up; and long-term monitoring. Difficulties arise at every one of these dimensions in primary care. The main symptom is dyspnoea, which develops gradually and is often unrecognised by patients, who adapt their activities accordingly. Early diagnosis requires good-quality pulmonary function testing: spirometry at a minimum, potentially supplemented by further investigations (plethysmography, blood gas analysis, exercise testing, sleep studies) to characterise severity, assist differential diagnosis and guide treatment[6]. Organising the care pathway is crucial for chronic follow-up and exacerbation management, in order to avoid unnecessary hospitalisations and reduce costs.

In this context, coordinated primary care practice is essential. In France, this type of practice is mainly found in multidisciplinary primary care practices (Maisons de Santé Pluriprofessionnelles, MSP), built around a shared project to improve care through a patient-centred approach. Sharing of skills and coordination foster teamwork. With this in mind, members of a multidisciplinary university primary care practice (MSPU) in southern France designed a collaborative action research (AR)[7] intervention on COPD. This AR simultaneously involved the acquisition of a spirometer, team training, and the co-construction of a care pathway integrating primary, secondary and supportive care.

The objective was to explore the effects of this action research on COPD on multidisciplinary primary care participants.

METHODS

Setting

The action research was conducted between September 2019 and September 2022 in an MSPU in southern France and was funded through a call for projects on chronic disease management led by the Regional Health Agency (ARS). The study drew on participatory knowledge mobilisation (KM) methods[7–9]. It is reported in accordance with the quality assessment checklist for action research (Appendix 1)[10].

Recruitment

The project was co-designed with healthcare professionals, through a horizontal co-construction approach initiated by general practitioners who were university senior lecturers (FC, AOE). The early involvement of clinical leaders experienced in co-creation enabled effective knowledge mobilisation. Purposive sampling broadened participation to a range of profiles: respiratory specialists, public health and communication experts, and qualitative research methodology experts. Participants knew the researchers as members of their own care team, sharing a common interest in improving coordination around COPD. They knew that the evaluation of the action research was part of a shared collective approach.

Preparation

To develop the project and guide the co-construction workshops, a literature review was conducted in 2019 via PubMed and MEDLINE on epidemiological data on COPD morbidity, mortality and risk factors. A brainstorming session with the steering team (two GP senior lecturers, a respiratory specialist, a public health physician, a coordinator, and a practice nurse) launched the process and helped identify the training content.

Action

An iterative co-construction process (Figure 1) enabled concrete proposals to be developed and educational con-

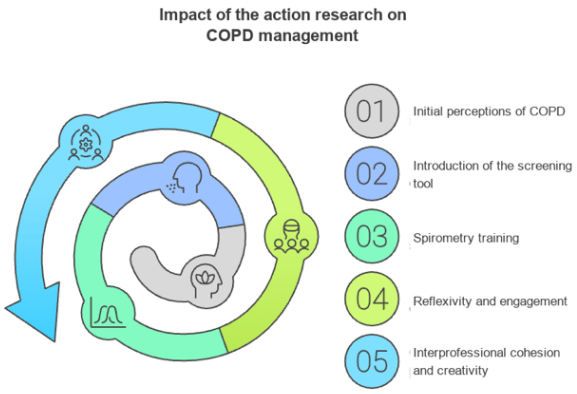

Figure 1. Action research process for managing patients at risk of COPD in a multidisciplinary primary care practice

tent to be designed. Three training modules were designed and delivered to 11 healthcare professionals with varied profiles (general practitioners, nurses, pharmacists, a psychiatrist, a physiotherapist, a resident):

– performing and interpreting spirometry (one day), co-facilitated by a respiratory specialist, a GP senior lecturer and a practice nurse;

– disclosing a COPD diagnosis (one evening), facilitated by a communication expert;

– identifying at-risk patients and care planning, adherence and inhaler technique (one day), co-facilitated by a GP senior lecturer, a respiratory specialist and a pharmacist.

In parallel, three multidisciplinary co-construction workshops on a COPD patient care protocol identified the need for practical tools to improve the care pathway and interprofessional coordination. Early-detection and follow-up forms were accordingly designed for integration into the shared practice software.

Evaluation: data collection

Data collection drew on field notes from the co-construction meetings and the brainstorming session. We report here the results of the qualitative component of the evaluation, a phenomenological qualitative study[11] exploring participants' lived experience of the AR. A parallel before-after quantitative study assessed changes in practice (described in Appendix 2). This work was written in accordance with the COREQ recommendations[12,13] (Appendix 3). Qualitative research experts (GB, AOE) designed an interview guide using phenomenological questioning centred on the experience of the different professionals (Appendix 4). It aimed to raise awareness, for each team member, of the effects of an AR in an MSPU in terms of knowledge, professional practice and coordinated care pathways. The investigator (GB) was a male GP researcher, retired from this practice, an expert in semiopragmatic qualitative analysis and in diagnosis-disclosure training. After the action research, the researcher invited participants by email to take part in interviews. Ten individual interviews took place face-to-face at the MSPU, and one remotely. Interviews were recorded. There were no repeat interviews. Notes were taken by the interviewer as the interview progressed, then shown to participants so they could confirm the intended meaning of some of their statements.

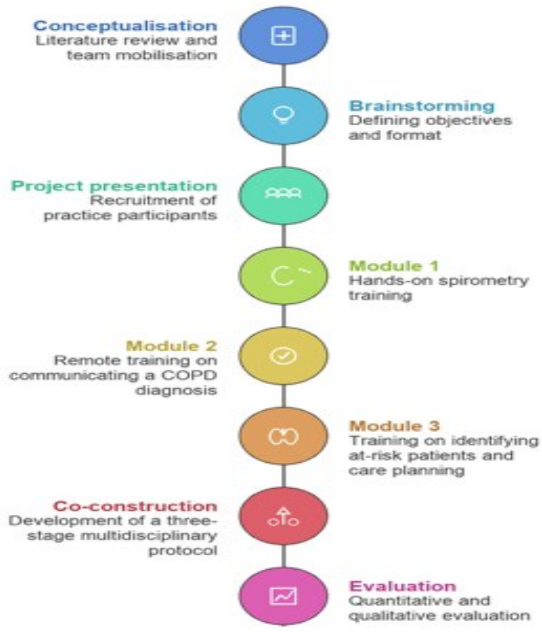

Figure 2. Model of the impact of an action research project on COPD management and professional engagement in an MSPU.

Qualitative analysis

Semiopragmatic phenomenological analysis[14] and trian-

Participant	Age	Sex	Years in practice	Year joined the MSPU	Profession	Prior spirometry training	Involvement in MSPU
GP1	40	M	9	2016	GP	Yes	Leader
GP2	43	F	14	2016	GP	Yes	Leader
GP3	47	F	12	2016	GP	No	Member
GP4	41	F	3	2019	GP	No	Member
GP5	40	F	3	2019	GP	No	Member
GP6	35	F	3	2019	GP	No	Member
PN	55	F	7	2016	Practice nurse	Yes	Member
APN	44	M	3	2019	Advanced practice nurse	No	Member
PH	61	M	14	2016	Pharmacist	No	Member
PT	41	F	17	2017	Physiotherapist	No	Member
CO	42	M	7	2016	Coordinator	No	Member

Table 1. Participant characteristics

gulation by two researchers, following division into units of meaning, thematisation and semiotic ordering, enabled the emergence of categories representing the dimensions of the lived experience. Through a process of constant comparison until saturation, categories were formalised as phenomenological statements and synthesised to convey the core meaning of the phenomenon[15].

Ethical considerations

This research, which does not fall within the scope of the Jardé law, received a favourable opinion from the independent Institutional Review Board, Adène Fonds de Dotation (0990-0279, 19 November 2023), and was conducted in accordance with the Declaration of Helsinki. It forms part of a professional practice evaluation. All participants gave explicit consent to the collection, recording, processing and publication of data in accordance with the General Data Protection Regulation (GDPR).

RESULTS

Participant characteristics

Among the 30 professionals of the MSPU, 14 volunteers took part in the co-construction workshops, selected based on the relevance of their activity to the topic. A public health expert representing the Regional Health Agency was not an MSPU member. The 11 participants in the training were included in the evaluation (Table 1).

The analysis identified four categories illustrating participants' experience, leading to a model of the impact of the action research on professional engagement within the practice (Figure 2).

1. Professionals' representations of COPD before the intervention described an imprecise, asymptomatic clinical entity, less clearly defined than other chronic diseases owing to the absence of an obvious follow-up parameter.

Professionals felt their knowledge was *"not all that clear"*. GP4 saw *"few [cases], often with the diagnosis already made"*, while for PT it was *"a chronic disease the patient lives with, without feeling its severity or having a clear idea of what they have"*. GP4 had become aware of the risk of *"missing the diagnosis"*, lacking systematic follow-up tools (GP3).

Healthcare professionals distinguished COPD from common chronic diseases (diabetes, hypertension) because COPD was *"less well framed"* and they felt *"better trained"* for chronic diseases with accessible care-pathway indicators. Regarding diagnosis disclosure, GP6 had realised *"how hard it is to name this disease with an acronym that doesn't make it any simpler"*.

2. Acquiring the spirometer as an early-detection tool in primary care enabled a shift towards a preventive and educational approach addressing public health concerns, but required further training.

Acquiring an early-detection and follow-up tool was judged decisive for patient management. For GP2, the training had come *"at the right time"*, coinciding with the arrival of new professional roles. Regarding COPD, members had become aware of *"the public health issue"* and their own *"knowledge needs"* (GP1, GP2, GP3, GP4, PN, APN, PH). GP4 had realised she *"could miss the diagnosis"* and felt the training and the tool would *"help detect it better"*. Overall, participants judged the knowledge gained still insufficient for routine integration or to feel legitimate, since *"training like this wouldn't be enough to award a certification"* (GP2). Several expressed a need for *"refresher sessions"* (GP3, GP4, APN). Doctors and nurses reported feeling *"more like public health actors through better screening"*, showing the tool's importance beyond their own practice. The PN highlighted the benefit of easier access to care and of *"contributing to equity of care"*. Lastly, spirometry had provided an opportunity for *"educational discussion"* grounded in objective information about the disease and its consequences.

3. By stimulating participants' reflexivity on their practice, the AR strengthened individual legitimacy and collective professional engagement, structuring the division of work.

The AR had fostered reflexive *"awareness"* of their practice (GP4), of the *"how"* of the action, generally stimulating reflexivity and highlighting *"their own shortcomings"* (GP2, GP6, APN). For the latter, multidisciplinary group AR *"had developed critical thinking"*.

For the practice nurse, the intervention had strengthened her professional *"legitimacy"*, *"within the group and in the patient's eyes"*, and had enabled her to gather reliable information *"personal, beyond the disease"*. PT had become aware of the advantages of her profession, which allowed her *"time to deliver information gradually across sessions"*.

Acquiring the tool had repositioned everyone, refocusing the division of work around professional legitimacy. For GP1, this legitimacy stemmed from multidisciplinarity. The PN and APN performed spirometry, and two trained GPs provided interpretation, creating a *"chain of actor legitimacy"* (GP2). For her, *"this visible synergy gave the patient confidence"*, helping them better understand the care pathway. This shared training had thus enabled *"rapid multidisciplinary care"*.

4. Action research integrated into a multidisciplinary team meeting (MDT) stimulated interprofessional cohesion and creativity.

The MSPU combined *"educational resources"* (GP2). For GP1, there needed to be *"people who drive things forward"* with *"leadership functions"*. In an MSPU, *"there were locomotives and others who stayed in the carriages"* (CO). It was a fitting setting for organising targeted AR, running research projects and sharing multidisciplinary skills by *"mobilising participants' creativity and productivity"* (CO). For GP2, the anchor point of the AR had been *"the multidisciplinary protocol created as a group"* (protocol available in Appendix 5). The MDT meetings had provided occasions for sharing, where the various professionals defined *"their role"*, *"their tasks"* and asserted *"their skills"* (GP1, GP3, GP6, PT). For PH, *"the MDT was the backbone of the MSP"* because all skills could be discussed, including his own. GP1 viewed the MDT as a *"training tool complementing the AR"* and the combination of skills as a *"vector of innovation and creativity"*. The AR had thus fostered a taste for shared work. For GP4 and GP6, *"it wasn't so much my knowledge that had changed, but the desire to work as a team"*. For the PN, *"the difference with other training was that this one fitted into a shared project"*. GP4 specified, *"I now know better who to refer patients to and for what task"*. However, the APN regretted the absence of *"systematic planning of clinical follow-up"* and understood *"that change and abandoning professional routines take time"*, which slowed new roles in primary care. For GP2, *"it was a very powerful vector of connection"*, echoing the coordinator's perspective, who saw the intervention as *"a tool that structures team cohesion"* capable of developing patient-centred operating procedures. He saw his role as threefold: assessing the project's relevance (*"I check whether it fits the team's needs"*), identifying *"candidate patients"* through a tagging procedure in the practice software, and facilitating everyone's *"conditions for buy-in"*.

DISCUSSION

The results of this action research highlight the positive

impact of participatory COPD training in a primary care context. Analysis of healthcare professionals' feedback shows strengthened professional engagement around this condition, previously perceived as vague and difficult to integrate into daily practice. The introduction of the spirometer, a concrete, shared tool, acted as a vector for change, engaging professionals in an educational and preventive approach that addresses public health concerns through early detection and recognition of the disease in consultation.

Beyond the appropriation of technical tools, the AR fostered reflexive feedback that strengthens professional legitimacy and engagement through a redefinition of roles within the team, and a clarification of the care pathway around shared collective values. In our study, professional engagement was captured as a collective process of involvement – appropriation of tools, participation and co-construction – emerging despite organisational constraints heightened in the post-COVID period. This conception aligns with the analyses of Girard and Somme[16], who describe engagement as caregivers' adaptation to organisational tensions and patient needs. These findings underscore the value of a knowledge mobilisation approach in primary care, one that links knowledge production, practice transformation and recognition of professional skills under real-world conditions.

Our findings align with the literature on AR in health, highlighting the effectiveness of collaborative approaches in fostering engagement, strengthening interprofessional coordination and sustainably embedding change[17,18]. This study also helps address a shortage of French-language work on the practical implementation of KM in primary care. AR in an MSPU appears to act as a vector for professionalisation. The coordinator's role is essential throughout the AR, from start to finish, ensuring it runs smoothly and supporting participants' sense of self-efficacy[19]. In this study, the legitimacy of the coordinator, who holds an MBA, was grounded in this “collective professional experience”, facilitating buy-in to the programme and stimulating each member's engagement[20]. This collective professional engagement can be compared to the Job Demands–Resources (JD-R) model, in which work engagement depends on the balance between available resources (training, tools, support) and demands[21]. In this example, the intervention and the introduction of an early-detection tool strengthened perceived resources by increasing professionals' competence, autonomy and recognition. Moreover, the multidisciplinary dynamic fostered a sense of coherence and collective usefulness, central elements of engagement[22]. Finally, Mulvale et al.[23] note that the most powerful levers of professional engagement lie within teams themselves: daily interactions, peer recognition and the quality of collective work are key drivers of mobilisation and change.

Strengths and limitations

The strengths of the study rested on strong professional mobilisation, the diversity of profiles involved, and the multidisciplinary approach. Local anchoring and co-construction fostered the appropriation of tools and strengthened collective legitimacy. The absence of hierarchy and the communication contract allowed for authentic exchanges, including criticism and frustrations. Semiopragmatic analysis regulates the researcher's interpretation.

However, the evaluation was limited by a selection bias linked to an already-engaged MSPU, and the interview guide did not explore collective barriers to interprofessional engagement. Descriptive pre/post data would have complemented the evaluation, while the durability of change was not measured.

Future perspectives

This study confirms the value of knowledge mobilisation in primary care for narrowing the gap between research, training and practice[24]. It encourages initiatives combining co-construction, on-the-ground support and recognition of experiential knowledge, while integrating clinical content and reflection on roles, organisation and shared values. This approach may have sparked interest in research among other MSPU professionals, but further studies would be needed to substantiate this. The use of concrete tools (such as the spirometer) combined with a reflexive, collaborative approach appears to be a key success factor. Although COPD was chosen for its emblematic nature, this type of mobilisation is likely applicable to other chronic conditions. This approach could be adapted to other health topics or care protocols in MSPs that share patients. Its relevance for mobilising teams at a territorial scale via local primary healthcare networks would be a worthwhile challenge to evaluate.

CONCLUSION

This action research conducted in primary care around COPD illustrates healthcare professionals' capacity to collectively transform their practices when actively involved in a collaborative, context-specific approach. By combining clinical training, practical tools and reflexivity, this project strengthened professional engagement, cohesion and creativity by structuring a patient pathway. The AR increased professionals' level of professionalisation by raising their awareness of their own skills, and therefore their legitimacy. It confirms the value of knowledge mobilisation as a driver of change, for improving quality of care and interprofessional coordination.

Abstract

Background. The French National Authority for Health has identified three priorities to improve the management of chronic obstructive pulmonary disease (COPD): strengthening early detection, preventing hospitalisation, and structuring care pathways. A participatory action research (PAR) project was conducted in a multidisciplinary primary care practice, focusing on the implementation of a care pathway prioritising early detection.

Objective. The objective was to explore the effects of this approach on participating primary care professionals.

Methods. This participatory action research project was based on a knowledge mobilisation process. Key factors influencing COPD management in primary care were collaboratively synthesised and integrated into training content. Semi-structured interviews with participants were analysed using a semiopragmatic phenomenological approach.

Results. Fifteen professionals participated in co-construction workshops and eleven interviews were analysed. COPD was perceived as a vague, infrequent condition with no clear clinical follow-up indicators. The main impact of the action research was a strengthened professional engagement around COPD, through (1) the appropriation of spirometry, initiating a screening approach that was well received but required further training; (2) reflection on professional identity, reinforcing individual commitment and clarifying task distribution; and (3) the development of a team-based work culture and clarification of the care pathway. Screening became an entry point to improved interprofessional coordination.

Conclusion. This action research project enhanced professional engagement around an under-prioritised condition. It highlights the value of participatory approaches to support practice transformation, foster interprofessional coordination, and anchor practical tools in primary care.

Keywords: Chronic Obstructive Pulmonary Disease; Primary Health Care; Health Knowledge, Attitudes, Practice; Spirometry

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APPENDIX I - Checklist for Assessing Quality in Action Research

Casey, M., Coghlan, D., Carroll, Á. *et al.* Towards a Checklist for Improving Action Research Quality in Healthcare Contexts. *Syst Pract Action Res* **36**, 923–934 (2023). https://doi.org/10.1007/s11213-023-09635-1

FACTORS	QUESTIONS	DESCRIPTION
Context	1. Is the action driven by a practical concern? 2. Is there local, national, and international imperative influencing the practical concern? 3. Does previous research inform the practical concern? 4. Does the AR project draw on previous research?	Yes : difficulties in diagnosing Chronic Obstructive Pulmonary Disease in primary care, underdiagnosis, lack of cohesive team-led clinical pathway. Yes , local (south of France) and national: 3.5 million people living in France with COPD and international: 4th cause of mortality worldwide needing to improve early detection and management. Yes Yes, using an literature review to design co-conconstruction workshops.
Quality of relationships	1. Are those who have articulated the practical concern in the first instance and who also have a stake its resolution included in all the steps of the action research cycle of constructing, planning action, taking action and evaluating? 2. Can the participants be classified as co-researchers? 3. Is the level of participation of the patients/clients and coresearchers evident at each step of the action research cycle? 4. Is the AR project evaluated in terms of the quality of the relationships?	Yes – KG, FC, AOE , GB, general practitioners Yes Yes : roles identified Yes, professionnals work in the same practice (MSP), relationships discussed between the coordinateur and professionals, how the RCP created comraderie and motivation.
Quality of the action research process itself	1. Does the final account demonstrate a rigorous and collaborative engagement in the action research project's design? 2. Does the account demonstrate subsequent enactment of cycles of constructing, planning action, taking action and evaluating? 3. Is enactment of the cycle towards the practical and theoretical objectives transparent and reliable? 4. Is the engagement of the coresearchers evident in shared data analysis and shared reflection?	Yes Yes, with ongoing evaluation. Yes Yes
Outcomes	1.Are both forms of outcomes presented (theory (research) and action (practical)? 2. Are the outcomes sustainable? 3. Are the outcomes useful for other action research projects? 4. Does the theoretical outcome contribute to future theory development? 5. Is there a reflection on the process of engagement on the cycles by the co-researchers?	Yes – qualitative data and explanation of the action (formation, RCP) Yes, fit in well into daily medical practice Yes Yes Yes , strengths and limitations.

APPENDIX II - Summary of Durel, Louis-Marie. Preliminary study for the deployment of a coordinated care pathway for COPD patients within a multidisciplinary primary care practice. Doctoral thesis in medicine: University of Montpellier, 2021.

Preliminary study for the deployment of a coordinated care pathway for COPD patients within a multidisciplinary primary care practice

Background: By 2030, chronic obstructive pulmonary disease (COPD) is projected to become the third leading cause of death. In 2020, the French National Authority for Health (HAS) published a care pathway guide for the management of COPD patients, intended for healthcare professionals. Following a call for projects by the Regional Health Agency (ARS) in 2018, the Cabestany university multidisciplinary primary care practice (MSPU) proposed a "COPD care protocol". This study was conducted prior to the implementation of that project.

Objectives: To describe the management of COPD patients within an MSPU. To measure the prevalence of patients at risk of COPD and compare management across general practitioners.

Methods: Single-centre, retrospective, descriptive study of COPD patients from initial assessment through to treatment.

Results: 88 patients were included in the study (mean age 69 years ± 9.97), the majority of whom were men. 75% of patients were at stage I or II. The median number of comorbidities was 3. No occupational disease had been declared. Complete smoking cessation was achieved in 60% of patients. 30% of patients were on triple therapy and more than half were on inhaled corticosteroids. Only 1/3 of patients had received pneumococcal vaccination. No assessment of dyspnoea or number of exacerbations was recorded in the medical records. More than 1/3 of patients had experienced an exacerbation during the year, with a significant predominance among women. 868 patients were at risk of COPD, of whom 11.4% had already undergone spirometry. There was no significant difference in management between physicians.

Conclusion: This study provided an opportunity to step back and identify the differences between HAS recommendations and current COPD patient management practices within an MSPU. Implementing a care protocol that takes these findings into account could help close these gaps and allow the situation to be compared several months later.

APPENDIX III - COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	7
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	7
Occupation	3	What was their occupation at the time of the study?	7
Gender	4	Was the researcher male or female?	7
Experience and training	5	What experience or training did the researcher have?	7
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	6
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	6
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	6
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	6
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	5
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	5
Sample size	12	How many participants were in the study?	7
Non-participation	13	How many people refused to participate or dropped out? Reasons?	8
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	7
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	7
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	8, table 2
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	7
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	7
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	7
Field notes	20	Were field notes made during and/or after the inter view or focus group?	7
Duration	21	What was the duration of the inter views or focus group?	
Data saturation	22	Was data saturation discussed?	8
Transcripts returned	23	Were transcripts returned to participants for comment and/or	7

Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	7
Description of the coding tree	25	Did authors provide a description of the coding tree?	9-10
Derivation of themes	26	Were themes identified in advance or derived from the data?	7-8
Software	27	What software, if applicable, was used to manage the data?	no
Participant checking	28	Did participants provide feedback on the findings?	7
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	9-10
Data and findings consistent	30	Was there consistency between the data presented and the findings?	9-11
Clarity of major themes	31	Were major themes clearly presented in the findings?	9
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	11

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.

APPENDIX IV - Interview guide

1. What did COPD represent for you in your practice before the intervention? How did you disclose a COPD diagnosis to your patients?
2. Do you remember a situation involving COPD management before the intervention? How did it unfold?
3. How did you experience the multidisciplinary nature of the training within the practice? How did you experience the multidisciplinary team meetings (RCP)?
4. Do you remember the last COPD situation you had to manage after the intervention? How did it go? What effect did it have on patient management and the care pathway? How did the pandemic change the effects of the intervention?
5. If you were to improve this action-training scheme for a chronic disease other than COPD, what would you suggest? In your view, how could this be applied to another chronic disease? In what way?
6. In what way do the characteristics of the MSPU facilitate action-training initiatives?

APPENDIX V - SPIROMETRY AND COPD PROTOCOL

Protocol Name	Spirometry and COPD Protocol
Version	9
Updated	August 13, 2024
Author	François Carbonnel (General Practitioner)
Authors	François Carbonnel, Sabine Argelès, Agnès Oude Engberink, Mark Oude Engberink
Target	Patients at risk for COPD
Objective of the protocol	To screen for COPD patients
Healthcare facility	Avicenne University Multidisciplinary Health Center

Rationale for the protocol
Chronic Obstructive Pulmonary Disease (COPD) is a chronic respiratory disease characterized by permanent and progressive airway obstruction that is not reversible with short-acting bronchodilators.

Its prevalence is difficult to estimate. We estimate the prevalence to be 7.5% among those over 40 years of age. Its incidence is currently increasing among women, particularly due to higher smoking rates in this population. The mortality rate associated with this condition is 41 per 100,000 among men and 17 per 100,000 among women.

Two-thirds of COPD cases are believed to go undiagnosed. The main reason for this is that the only way to diagnose the disease is through spirometry, which is not widely available in primary care.

Risk Factors for COPD
The main risk factor for COPD is smoking. Screening should be considered for any patient who:

- Smoking
  - Men: > 20 pack-years (PA)
  - Women: > 15 PA
  - Whether or not combined with inhaled cannabis
  - Including secondhand smoke
- Or occupational or household exposure to toxic substances or irritants
  - silica
  - coal dust
  - plant dust,
  - mold
- For occupational exposure, there are lists of at-risk occupations

Situation de travail à risque	Activité professionnelle avec risque avéré de BPCO
SECTEUR MINIER	73. Exposition à la silice 74. Travaux au fond des mines de charbon 75. Travaux au fond des mines de fer - Inhalation de poussières ou fumées d'oxyde de fer
Bâtiment et travaux publics	76. Creusement des tunnels 77. Asphaltage des routes 78. Autres BTP avec exposition chronique et/ou à des niveaux excessifs de gaz-poussières-vapeurs
Fonderie et sidérurgie	79. Expositions à plusieurs particules minérales (poussières métalliques, charbon, silice) 80. Exposition à des gaz ou des fumées (émissions des fours, fumées métalliques, oxyde de soufre ou d'azote)
Industrie textile	81. Employés de filature de coton, lin, chanvre, sisal
Métiers agricoles	82. Métiers concernés par l'utilisation de produits type pesticides 83. Milieu céréalier : ouvriers des silos, dockers, employés de meunerie 84. Production laitière 85. Élevage de porcs 86. Élevage de volailles
	Activité professionnelle avec risque possible de BPCO
	87. Travailleurs du bois : menuiserie, ébénisterie, scierie 88. Soudage 89. Cimenterie 90. Usinage et transformation des métaux 91. Exposition aux émissions Diesel

Care Pathway for Patients at Risk for COPD

Screening for patients at risk for COPD

From the patient's perspective:

The French National Authority for Health (HAS) has developed a self-assessment questionnaire for COPD screening intended for patients. This questionnaire consists of 5 questions (Appendix 1):

- Do you cough often (every day)?
- Do you often have a productive cough or one that produces phlegm?
- Do you get out of breath more easily than others your age?
- Are you over 40 years old?
- Have you smoked or do you currently smoke?

If you answer "yes" to 3 out of the 5 questions, you should have a spirometry test.

For healthcare professionals:

All healthcare professionals must refer the patient for a spirometry test if at least one of the following conditions is noted:

- Any of the following signs:
  - Chronic cough and sputum production
  - Persistent, progressive shortness of breath that begins or worsens with exertion or following a bout of bronchitis
- If an adult is exposed to any of the risk factors described in Chapter 2
- A decrease in peak expiratory flow (PEF) or FEV1 (Forced Expiratory Volume in One Second)
- 3 "yes" answers on the HAS COPD self-assessment questionnaire

Diagnosis of a patient at risk for COPD

The patient is referred to a healthcare professional trained in performing spirometry.

At the Avicenne Primary Care Center (MSPU), general practitioners, Nurse Asalée, and the advanced practice nurse (APN) are trained to perform spirometry.

If spirometry testing is indicated, they follow the spirometry procedure form in the shared WEDA software, as presented in Appendix 2.

At the Avicenne MSPU, general practitioners are trained to interpret the results: Dr. Carbonnel and Dr. Oude Engberink have obtained the Level 2 certification issued by the European Respiratory Society (ERS Hermes), in collaboration with Prof. Ayot's team at the Montpellier University Hospital. I

They complete the interpretation form as presented in Appendix 3. If they are not the patient's primary care physician, they inform the primary care physician of the test results and the resulting treatment recommendations using the secure messaging system within the shared WEDA software.

Rôle of each healthcare professional

GENERAL PRACTITIONER
Screening Patients at risk for COPD COPD patients who are uncontrolled or poorly managed
Diagnosis Perform spirometry or have it performed in accordance with quality and reproducibility for interpretation Interpret the spirometry results or have them interpreted
Raise awareness/alert Primary care professionals at MSP U about COPD screening
Treat COPD patients using pharmacological and non-pharmacological treatments Therapeutic education, particularly on the proper use of inhaled medications Help patients quit smoking Administering flu vaccines Pneumococcal vaccination
Assessment Severity of COPD Treatment efficacy: clinical and spirometric assessment at 3 months following any treatment changes Equipment evaluation: alternating calibration and standardization
Refer the patient To a healthcare professional trained to perform spirometry if the primary care physician does not To a healthcare professional trained to interpret spirometry results if the primary care physician does not To a healthcare professional to assist with smoking cessation if the primary care physician does not To a pulmonologist if the patient's medical condition warrants it

ASALEE / IPA
Screening Patients at risk for COPD COPD patients who are uncontrolled or poorly controlled
Diagnose Perform spirometry or have it performed Have the spirometry results interpreted
Raise awareness/alert MSP U professionals on COPD screening
Treat Therapeutic education, particularly on the proper use of inhaled medications Help patients quit smoking Administer the flu vaccine
Assessment Treatment efficacy: assessment via spirometry at 3 months to evaluate any changes therapeutic changes
Refer the patient To the primary care physician to interpret the spirometry results or to one of the physicians trained in MSP U To the primary care physician to adjust treatment or to one of the physicians trained in MSPU

REGISTERED NURSE
Identification Patients at risk for COPD COPD patients who are uncontrolled or poorly controlled
Treatment Therapeutic education, particularly on the proper use of inhaled medications Smoking cessation Administer the flu vaccine
Refer the patient To the primary care physician to adjust treatment or to one of the physicians trained at the MSPU
Inform Keep the various professionals involved informed of each other's actions by sending a secure email (Post-it, WEDA software) Record follow-up in the WEDA patient record

PHARMACIST
Identification Patients at risk for COPD COPD patients who are uncontrolled or poorly controlled
Treatment Therapeutic education, particularly on the proper use of inhaled medications Offer smoking cessation aids Administer the flu vaccine
Assessment Severity of COPD Treatment efficacy: assessment of symptoms 3 months after any change in in treatment
Refer the patient To the primary care physician or one of the physicians at MSP U if the primary care physician does not perform and/or interpret spirometry To the primary care physician or one of the physicians at MSP U, or to the ASALEE nurse to assist with smoking cessation if necessary
Inform Keep the various professionals involved mutually informed by sending a secure electronic message (Post-it, WEDA software) Record follow-up in the WEDA patient record

PHYSICAL THERAPIST
Refer the patient To the primary care physician or one of the physicians at MSP U if the primary care physician does not perform and/or interpret spirometry To the primary care physician or one of the physicians at the MSP U, or to the ASALEE nurse to assist with smoking cessation if necessary
Inform Keep the various professionals involved mutually informed by sending a secure electronic message (Post-it, WEDA software) Record follow-up in the WEDA patient record

Quality Process

Introduction

Chronic disease requires the optimization of patient care pathways. Multidisciplinary practice provides an ideal setting for developing care pathways (cross-disciplinary perspectives, reference to the literature, and tracking of decisions). Multidisciplinary protocols help organize care pathways and/or the management of complex situations because they describe, for a typical scenario, the optimal care plan to be implemented by the team, specifying who does what, when, and how. These protocols are developed or adopted by the team, taking into account scientific evidence (such as HAS recommendations) and the local context (challenges and resources).

A multidisciplinary protocol:
1. addresses a multidisciplinary problem identified by the team;
2. formalizes the combination of medical, nursing, and medical-social skills needed to address the problem in the best possible way;
3. serves as a natural framework and strengthens teamwork.

Beyond these objectives, the multidisciplinary protocols at the Avicenne University Community Health Center help foster a multidisciplinary culture (mutual recognition, relationships of trust, etc.) that serves as the glue holding the team together.

The protocols developed at the Avicenne University Community Health Center are updated annually as recommendations and team staffing levels change.

Our 2024 Evaluation: Monitoring and Evaluation Indicators

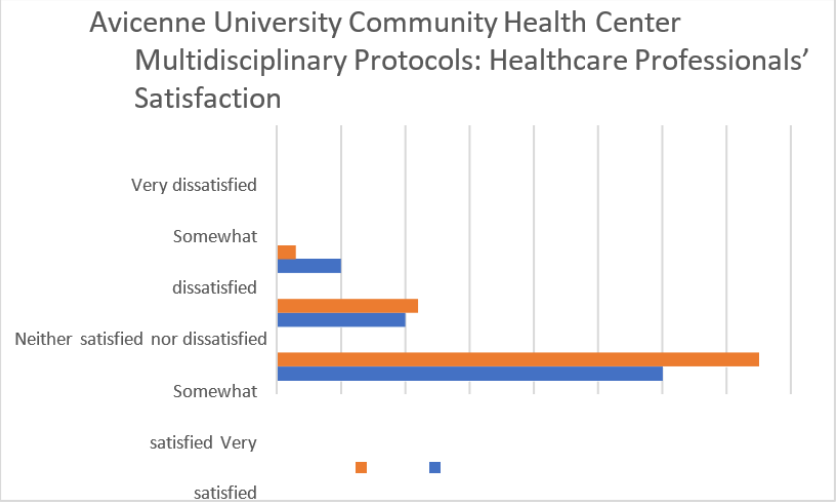
The Avicenne University Community Health Center team has defined four key areas for monitoring and evaluation indicators in order to assess its multidisciplinary protocols.

1. Development
2. Use (monitoring, such as the number of times we use the protocol)
3. Satisfaction
4. Update

Regarding points 2 and 3, as in 2021, 2022, and 2023, we implemented a self-assessment approach. In addition, we also extracted the data available in our shared information system (WEDA).

In Appendix 4, you will find the questionnaire used. The questionnaire was sent via Microsoft Forms to all members of the Avicenne University Primary Care Center. Each member answered the questions anonymously. There were specific questions for both users and protocol managers.

This year, we once again conducted a survey among healthcare professionals to measure satisfaction with the use of multidisciplinary protocols.



Satisfaction among healthcare professionals at the Avicenne MSPU regarding multidisciplinary protocols improved significantly in 2024. We attribute this improvement to our team-based approach, following our consultation with departmental and regional medical advisors. This outside perspective was beneficial in reviewing and improving certain procedures. Not only did satisfaction increase, but we also observed better management of indicator tracking within the team. This is why the number of times each protocol was used has increased.

2024 Analysis

The protocol is frequently used by general practitioners, pulmonologists, advanced practice nurses, and ASALEE nurses. In 2020, members of the MSPU participated in an interprofessional COPD Care Pathway training. The protocol is considered accessible and clear. The content was approved during a team meeting, and the protocol coordinator ensures it is kept up to date in collaboration with the working group.

The working group identified several areas for improvement regarding this protocol, notably:
- Presenting the protocol to new members of the Avicenne MSPU to clarify its use and each person's role
- Annual update of documents in WEDA (prescriptions and template letters)
- Screening during "Smoke-Free Month"
- Implementing a computerized tracking system for monitoring and evaluation indicators

Actions Completed in 2024

Assess the impact of the COPD Care Pathway

In 2020, members of the MSPU participated in an interprofessional COPD Care Pathway training program. In collaboration with the Montpellier University Hospital, we evaluated the impact of this training (see appendix). The primary objective is to assess the impact of implementing the COPD Care Pathway by comparing the rate of exacerbations among patients with COPD before and after the intervention. Secondary objectives include evaluating the impact of this care pathway on the overall management of COPD patients in accordance with the HAS guidelines, as well as the impact on the implementation of spirometric screening for COPD among patients identified as being at risk for COPD. In 2024, a

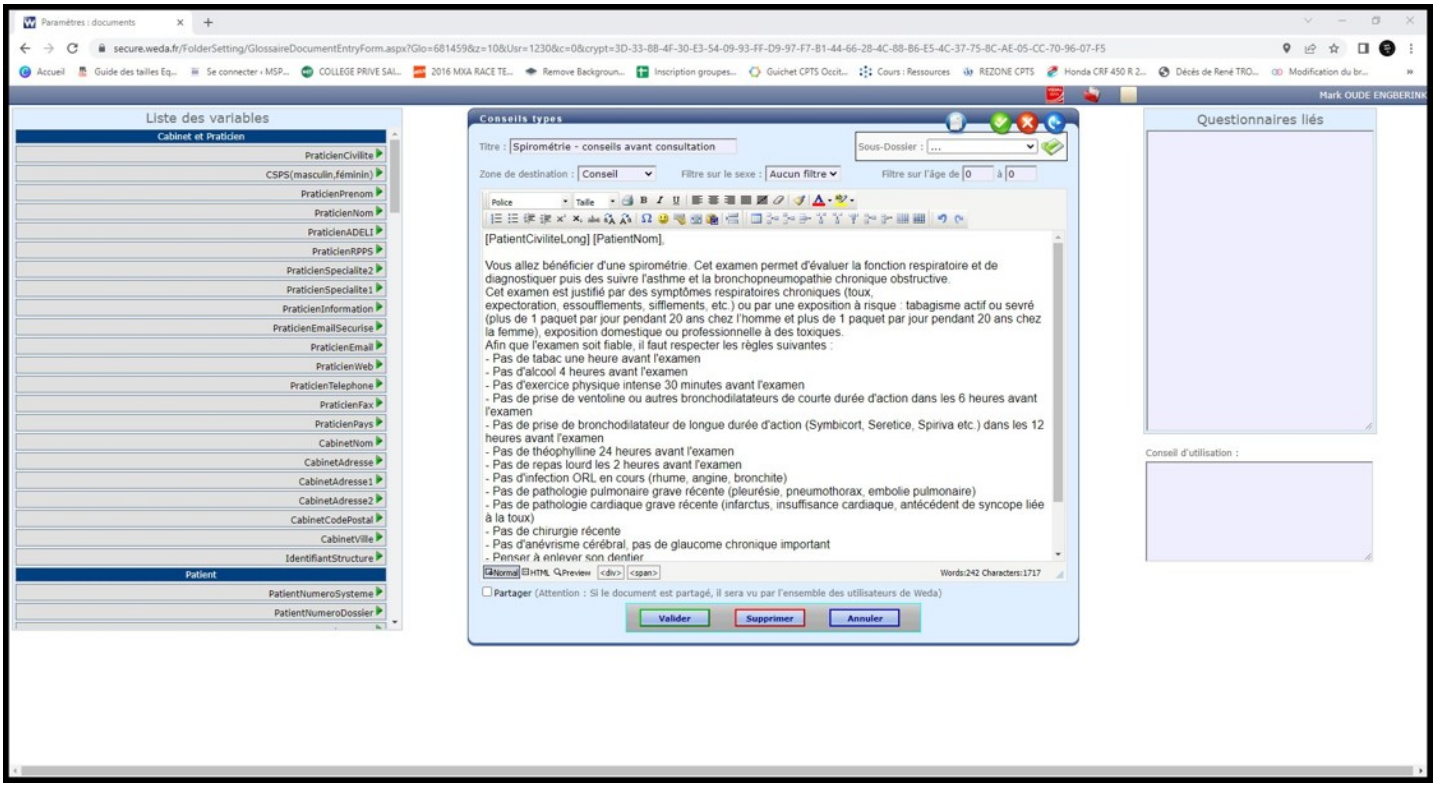
thesis in general practice was completed to analyze the results.

Involvement of the entire Avicenne MSPU team

As we do every year, we organized a meeting focused on multidisciplinary protocols, which allows the team to validate the appropriateness of their use and the need to evaluate their implementation.

Updating standard documents in WEDA

An interprofessional working group developed WEDA documents to facilitate patient care and referral in accordance with this protocol. For example, a standard letter with advice for patients prior to the "spirometry consultation":

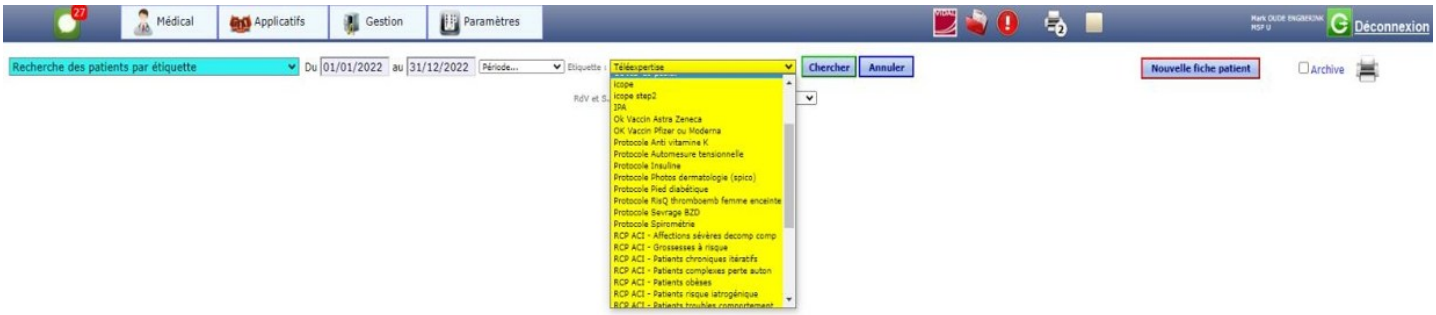


Organization of COPD Screening at the MSPU Facilities and Smoke-Free Month 2023

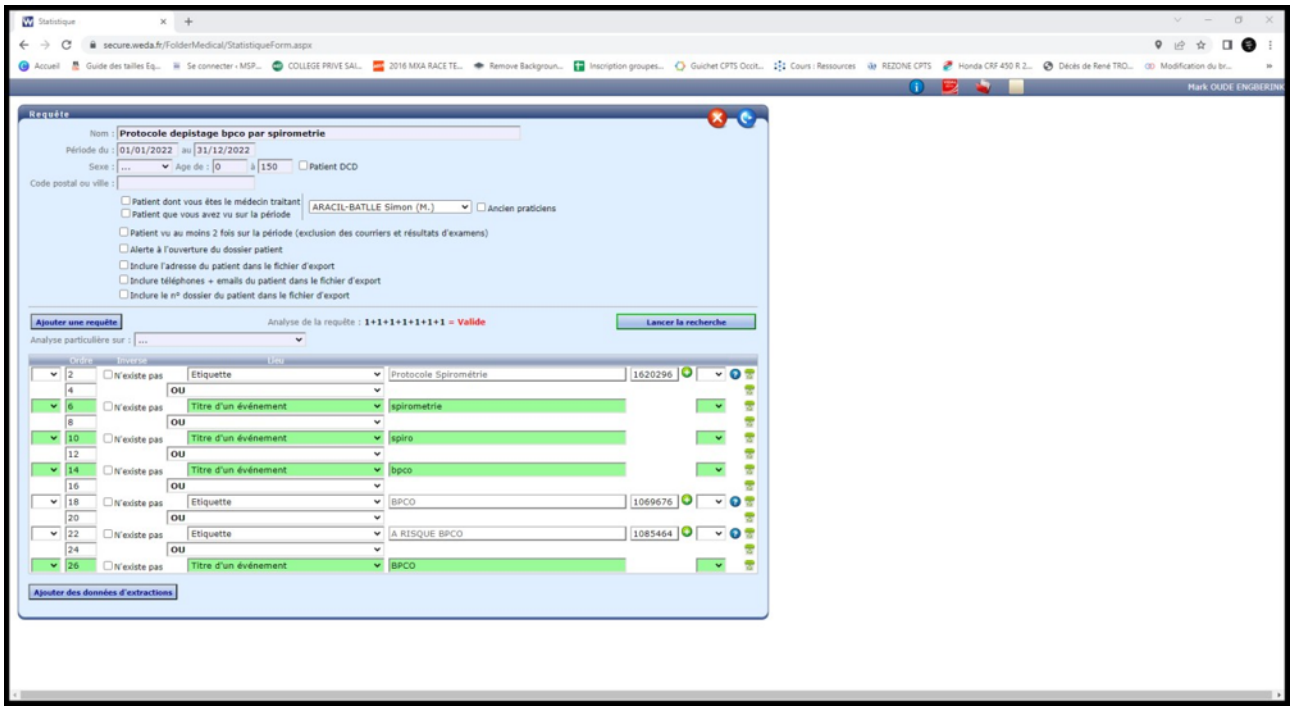
The two general practitioners trained in interpreting spirometry results organized half-day screening sessions at the MSPU in collaboration with the ASALEE nurse and the advanced practice nurse. A specific initiative took place for No Smoking Month in 2022, 2023, and 2024 (Health Insurance Call for Proposals).

Computerized Tracking of Indicators

We configured our software in late 2021 so that we could quantify the number of times healthcare professionals used one of our multidisciplinary protocols. In our information system, we created tags for each protocol:



A specific data extraction feature is available for this protocol via keyword searches using the Weda software:



Regarding this protocol, we retrieved 51 instances of its use from our WEDA database in 2024 (44 instances in 2022, 35 instances in 2023).

All healthcare professionals discussed during a team meeting the implementation of a tag in our WEDA information system that would allow us to quantify the use of a protocol. It turns out that implementing a tag requires:

- proficiency in using WEDA
- time and discipline

Nevertheless, the key factor for optimized monitoring through tags would be for healthcare professionals to be convinced of the usefulness of this approach, given the constraints (time, discipline). Regular awareness -raising on this topic appears to be necessary.

Upon reflection, we observe that the value of a protocol for the team is not measured solely by the number of patients enrolled in it. Its multidisciplinary use is also a key indicator of its value. The multidisciplinary indicator is essential for assessing the effectiveness of MSP teamwork and helps improve the dynamics and collaborative development of a healthcare project.

Outlook for 2025

In 2025, we will continue our quality improvement efforts focused on multidisciplinary protocols. Specifically, we will:

- Raise the team's awareness of the use of WEDA labels
- Deepen the self-assessment of protocols using a questionnaire. To increase the involvement of the entire team, the questionnaire can be completed during team meetings or by sending it electronically to team members individually.
- Consolidate and refine the computerized tracking of protocol evaluation metrics
- Update protocols in accordance with current recommendations
- Organize a meeting so that new members of the Avicenne Primary Care Center can familiarize themselves with the content of the protocols and so that decisions regarding the continuation or updating of the protocols can be made.
- Discussions are currently underway regarding the integration of patients into the MSP's operations and, consequently, their participation in the development and evolution of the protocols.
- Practicum thesis on the impact of the COPD care pathway within the MSPU.