

**PERMANENT EDUCATION MEDIATED BY DIGITAL TECHNOLOGIES IN
PRIMARY HEALTH CARE****EDUCAÇÃO PERMANENTE MEDIADA POR TECNOLOGIAS DIGITAIS NA
ATENÇÃO PRIMÁRIA À SAÚDE****EDUCACIÓN PERMANENTE MEDIADA POR TECNOLOGÍAS DIGITALES EN
LA ATENCIÓN PRIMARIA DE SALUD**

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ABSTRACT

Objective: This research proposes guidelines for permanent education in Primary Care Health mediated by digital technologies. The guidelines focus on involving all primary care health professionals in a set of actions to improve their work. Seeking to validate that, we carried a permanent formation at a primary healthcare unit and involved 11 professionals. **Method:** The research methodology was qualitative/descriptive, using a participant/participant research procedure. We collected data through a pre-training questionnaire and a post-training semi-structured interview. **Results:** The results demonstrated the feasibility of applying the guidelines in Primary Health Care units based on technological mediation and the Bardin analysis method. **Conclusion:** the researchers had validated the proposed guidelines and their application in quality permanent education for primary care health professionals.

Descriptors: Continuing education; Digital technology; Primary health care.

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RESUMO

Objetivo: Esta pesquisa propõe diretrizes para a Educação Permanente em Saúde na Atenção Básica com o uso de tecnologias digitais. As diretrizes têm como foco todos os profissionais de saúde envolvidos com a atenção primária em um conjunto de ações destinadas a atualizar e a capacitar o profissional para sua prática de trabalho. **Método:** Para validação, desenvolveu-se uma formação permanente em uma unidade básica de saúde, envolvendo 11 profissionais. A pesquisa orienta-se a partir do método qualitativo, descritivo, com procedimento de pesquisa participante/participante. A coleta das informações foi realizada através de um questionário de pré-capacitação e uma entrevista semiestruturada pós-capacitação. **Resultados:** Os resultados, analisados seguindo a análise de conteúdo Bardin, demonstraram a viabilidade da aplicação das diretrizes nas unidades da Atenção Primária em Saúde a partir da mediação tecnológica. **Conclusão:** Como conclusão validou-se as diretrizes propostas e sua aplicação na educação permanente de qualidade para os profissionais de saúde da atenção primária.

Descritores: Educação continuada; Tecnologia digital; Atenção primária à saúde.

RESUMEN

Objetivo: Esta investigación propone directrices para la Educación Permanente em Salud en la Atención Primaria com el uso de tecnologías digitales. Las directrices se centran en todos los profesionales de La salud involucrados com La atención primaria en un conjunto de acciones dirigidas a La actualización y formación de profesionales para su práctica laboral. **Método:** Para la validación, se desarrolló una formación permanente en una unidad básica de salud, involucrando a 11 profesionales. La investigación se basa em un método cualitativo, descriptivo, com um procedimiento de investigación participante/participante. La recolección de datos se realizó a través de um cuestionario pre-entrenamiento y una entrevista semiestruturada post-entrenamiento. **Resultados:** Los resultados, analizados siguen el análisis de contenido de Bardin, demostraron la viabilidad de la aplicación de las directrices en las unidades de Atención Primaria el Salud a partir de la mediación tecnológica. **Conclusión:** Como conclusión se validó la propuesta de lineamientos y su aplicación en la educación permanente de calidad para los profesionales de salud de atención primaria.

Descriptorios: Educación continúa; Tecnologías digitales; Atención primaria el Salud.

INTRODUCTION

Developing a comprehensive view of the patient and effective care requires collaborative work among professionals; the construction of this care requires an exchange of knowledge between different categories. Permanent Health Education (EPS) is based on the knowledge and experiences of each individual and is guided by in learning and in the possibility of

transforming professional practices, through the problems faced in reality.¹⁻²

In this perspective, innovation in the training process is necessary, where new techniques and teaching methods, mediated by digital technologies, were created to direct student learning towards learning through problem solving.³

Aiming at permanent education for health professionals, the DECREE No. 7.385, OF DECEMBER 8, 2010, creating the

UNA-SUS with the purpose of “meeting the training and continuing education needs of workers in the Unified Health System - SUS, through the development of distance education in the health area”. With the creation of UNA-SUS, several training courses were generated to respond to the demand and improve health care.⁴

Professionals working in this area need constant updates and training for their work practice. To this end, the health secretariats, in partnership with the federal government, have the goal of carrying out a project with an annual plan with a view to critical reflection on care, management and training practices, which in itself is an educational process. applied to work. This enables changes in relationships, processes, health acts and people and better articulation inside and outside the institutions. To support the planning process, a proposal was proposed for guidelines to support states/municipalities and the Federal District, called the Permanent Health Education Plan (PEPS), which is a guide for leaders to formulate proposals, as hospital.⁵

In this scenario, the use of digital technologies for the ongoing health education process is an essential factor. However, the use of technological resources in the training of primary care professionals is still not a constantly experienced practice. The development of training processes for professionals and PHC users involving

technologies is an open research topic and was the focus of this research.

The creation of a viable model to be applied in PHC, focused on training PHC professionals and users, involving the use of digital technologies and active teaching methods, is something necessary for the improvement of ongoing training processes. It is observed, however, the lack of access to guiding materials available for health units.⁶ Therefore, the research question that guides this work consists of: What are the necessary guidelines to guide the processes of permanent education in primary care in health involving digital technologies? The general objective of this work is to propose guidelines for a permanent training process in the scope of primary care involving digital technologies.

METHOD

This investigation has a qualitative, descriptive nature, whose procedure is participant/participant research. The sample is composed of 11 primary health care professionals, who work in a Family Health Strategy (ESF), in a municipality located in Vale do Paranhana/RS. The ESF in the PHC has 14 health professionals, five Community Health Agents (CHA), one nurse, two doctors, one nursing technician, one dentist, one oral health assistant, one psychologist and two nursing interns, one in a college curriculum internship, and one with a bond

via the city hall. Of these, the psychologist and the two interns did not participate in the sample, since both were not working at the time of the meeting.

The inclusion criteria considered for the subjects' participation in this research were: being over 18 years old, of both sexes, PHC workers at the selected ESF and who signed the Free and Informed Consent Form (TCLE). The research followed the ethical aspects under CAAE number:48373021.0.0000.5348.

For data collection, training was carried out for PHC professionals, organized in three meetings from August to September 2021. Information was collected through a pre-training questionnaire containing six questions with the objective of identifying the health professional's learning profile, in addition to a semi-structured interview

containing ten questions, six of which were about the characterization of the subjects and four about the perception on the topic.

For the analysis of the collected data, Bardin's content analysis method was used in the three phases: pre-analysis, material exploration, treatment of results, inference and interpretation.

Using as a basis the content obtained through interviews and questionnaires, three categories of analysis most common in the speeches of health professionals were defined, namely: guidelines, learning methods and digital resources. The analyzed content was confronted with these categories, in order to find similarities and/or discrepancies. As a way of aligning the analysis, each question in the interviews and questionnaires was distributed and analyzed in each category.

RESULTS

This research proposes a learning process following guidelines involving digital technologies for application by primary care health professionals. The proposal was designed based on the ESF, aiming at training professionals and users, seeking prevention, promotion and recovery of the population's health.

Thus, the research proposes a method for permanent education in health guided by five stages: inspiration, concept, design, development and evaluation with testing (application). At the end of each assessment, the results must be analyzed and the process restarts according to the primary

care team's analysis, in order to address the issues raised by the testing. In this context, with the use of the guidelines, a creative model for the application of permanent education is formed, resulting from a multidisciplinary effort applied in its development.

Currently, primary care has professionals with different skills and training, including physicians, dentists, nurses, nursing technicians, CHAs, among others. These, coordinated by the nurse, divide the development of Permanent Education, between Planning, Design, Development, Application and Evaluation. In Chart 1, the Steps and guidelines proposed in each step are better visualized:

Table 1- Guidelines for Permanent Education

<i>Phases</i>	<i>Guidelines</i>
Inspiration	Mapping of the Territory: as a result, a local diagnosis and identification of the population's health problems and needs are sought;
	Situational Diagnosis: In this one, the result of the process of collection, treatment and analysis of the data collected in the mapped area is obtained;
Concept	Discuss training priorities with the team;
	Carry out the schedule of the annual training of the ESF;
	Define the topic that will be addressed in each of the training sessions in the proposed schedule;
	Define the technologies that will be used in the approaches;
	Define the locations, date and time that the training will be applied;

	Define the audience that will receive the training (professionals or network users);
Design	Define application methods;
	Define the training evaluation method, whether it will be through questionnaires, debates, observation or other methodologies;
	Define the expected results;
Development	Develop the material that will be used in the training;
Testing and Evaluation	Application of training;
	Evaluate the effectiveness of the proposed method with the team and possible changes in future applications;
	Share the results found with the team.

Source:author

In order to carry out the application of the proposed guidelines for training in primary care, the health unit team that will develop the training must be engaged with the objectives of the training. The first phase, defined as Inspiration, involves Territory Mapping and Situational Diagnosis.

Territory Mapping should be understood as the process of collecting and recording information and community perceptions about the territory in which they live and coexist. It is intended to produce information that can be made available and consulted in an agile and dynamic way through a cartographic base that allows the visualization of the territory and its interactions, which are constantly updated.⁸ This work directly involves the functions inherent to the ACS, from the collection of

data to the recording of information.

The Situational Diagnosis, on the other hand, is characterized as a tool used to identify problems and social needs of the community, such as: health, education, sanitation, security, transportation, housing needs, as well as allowing to know how the health services are organized. health. It is of fundamental importance for the identification of problems, which in turn is the basis for situational strategic planning, allowing the development of effective focal health actions in relation to the problems encountered. In this case, the reality in which the community and the health team are inserted, which is a way of organizing the ESF services and routines.⁹

In the second stage, the Concept stage, there is a discussion with the teams

regarding training priorities, based on what was raised in the first stage. A training schedule is organized to be applied in the current year in the FHS, the topics that will be addressed in each of the trainings are defined, according to the proposed schedule.

For each of the trainings, in its planning, it is necessary to define which technologies should be used for each approach. In this sense, they can be online meetings, discussion groups that engage the participant in active and interactive learning, as proposed by Francis et al.¹⁰ An Audible Response Unit can also be applied, so that participants through smartphones, phones, and internet-enabled mobile devices can participate in a synchronous class.¹¹ It is also possible to use a platform accessed by health agents via mobile internet, which can propose semi-structured sections including a co-audition of material didactic previously recorded in audio and, in sequence, group discussions.¹² In this scenario, participants can access video classes at any time to solve their doubts. The technology to be used will depend on the results obtained in the diagnosis and on the profile of the team and the community in which the basic health unit is inserted, as is already highlighted in other works in the area involving the theme.¹³ An important element, in this case, is the technological knowledge of those responsible for the training process.

At this stage, it is also necessary to

plan the location, date and time that the chosen training will be applied, and for which audience, which may be health professionals, FHS workers in general, or users. The Concept stage ends with the representation of what was discussed, in the form of conceptual training proposals, as well as the definition of goals and schedules to enable the development of training according to the chosen public, always aiming at equity for all.

Then, in the Design stage, the team has already defined and planned the basic structural changes that are necessary for permanent training. At this point, issues such as application method and evaluation method are defined, such as: questionnaires, group discussions, observation or other methodology and the expected results.

In the fourth stage, Development, the execution of the planned work begins, developing the material that will be used for training in health, reviewing the fundamental elements for the execution, verifying possible changes in the programming and evaluating the developed material.

Finally, in the Testing and Evaluation stage, health training is applied to the chosen public: at this time, the attendance minutes must be carried out as recommended for receiving SUS funding, evaluate the effectiveness of the proposed method through evaluation, discuss possible

changes in future applications, and share the results found with the team and, if necessary, with the community. At the end of each evaluation, the results are analyzed and the process restarts according to the analysis found.

The application

The intervention proposal occurs firstly according to the analysis of the situation of the (ESF) area, as well as its planning, execution and subsequent effectiveness of the performance for the improvement of the health of the users and receipt of financing from the SUS. For this, an analysis of the reality is carried out where the guideline Inspiration stage is worked, within this stage the territorial mapping and the situational diagnosis are carried out.

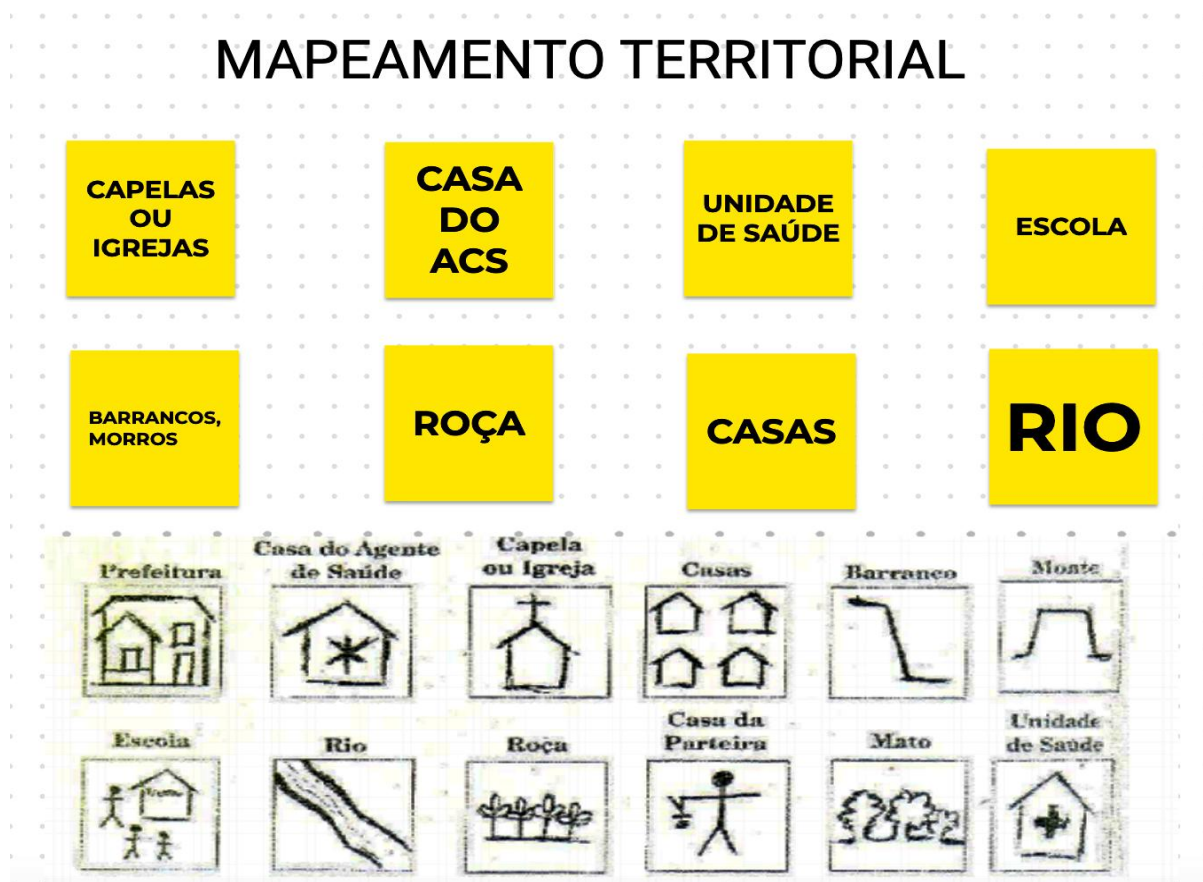
For the construction of the mapping of the territory, firstly, a meeting was held

with all the FHS professionals. In this, the micro areas of each professional were presented, discussed and reorganized, for later construction of a geographic map delimiting the area covered by each CHA.

The first meeting had the objective of carrying out an initial interview, and guidance on the construction of the first two stages of the Guidelines for a training process, namely: Mapping the Territory and Situational Diagnosis.

For this purpose, a Consolidated Information Report of users referring to their micro areas was made available to each CHA, containing the main comorbidities and vulnerabilities of users for verification, in addition to providing a document, built with the aid of Google Jamboard®, presenting the concept of territorial mapping (Figure 1).

Figure 1 - Concept and examples of Territorial Mapping



Source:author (2021)

Guidance on Territorial Mapping was made available to participants, as shown in Table 2:

Table 2– Guidelines for territorial mapping

Benefitsof territorial mapping	Tips for territorial mapping
<ul style="list-style-type: none"> • It facilitates the planning of actions by the Family Health Team, as map updates allow assessing the health situation of the micro-area; • Makes it possible to plan the route of each day's visits without wasting time; • Shows the easiest ways to reach a certain location in the micro area; • Gives visibility, through symbols, to houses with families at risk and that need to be prioritized by the team; • Shows the entire micro area, giving an overview of the work to be performed by all health professionals; 	<p>When building your smart map, it is important to include the following services: city hall, or sub city halls, districts; basic health units; family health teams; hospitals; schools; nurseries; churches and religious centers; police stations and stations; sports courts, soccer field; main streets, rivers, streams, ponds, floodplains; commercial establishments and industries; bus stops; midwives, healers, healers; geographical barriers, hills, forest slopes and other important aspects.</p>

<ul style="list-style-type: none"> • It shows the geographic barriers that make it difficult for people to get to health services (rivers, hills, dense forest, etc.). 	
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Source:author (2021)

It was verified with the survey that in total, the large area had: 349 hypertensive, 153 smokers, 116 diabetics, 35 pregnant women, 21 users of alcohol and other drugs, 20 bedridden or at home, counting users linked to CHA and users without this binding. With this survey, it is possible to analyze which areas are at greater risk and vulnerability.

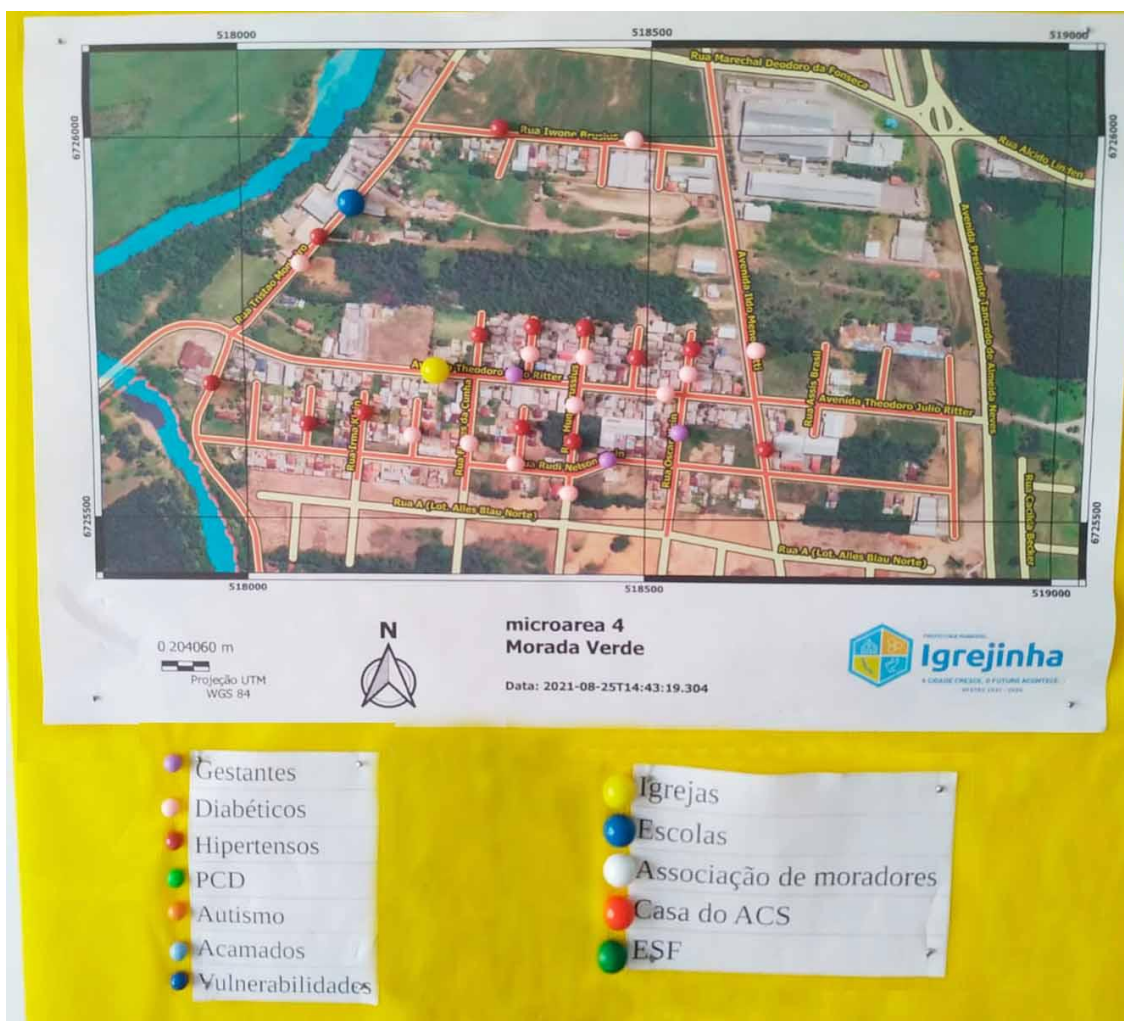
The creation of this situational diagnosis helps in the foundation and situational strategic planning, and allows the development of effective focal health actions in relation to the problems encountered. It allows identifying problems, limits and potentialities of the health service, as well as contributing to the adequate planning of actions to be implemented.

For the creation of maps of the territory, Google Maps was used as an aid.¹, thus generating the visual micro area of each CHA. A legend was also created with the aid of a map-type pin. The following items were marked in this caption: diabetics (red pin), hypertensive (pink pin), people with disabilities (green pin), pregnant women (lilac pin), autistic (orange pin), bedridden (light blue pin) and vulnerable

(strong blue pin). Still regarding the caption, the churches (big yellow pin), schools (big blue pin), residents' association (big white pin), CHA house (big red pin) and the ESF (big green pin) were demarcated. An example of a territory map is shown in Figure 2.

¹<https://www.google.com.br/maps>

Figure 2 - Map model used in training



Source: Adapted from GoogleMaps®(2021)

Based on this map, the micro-area of each CHA was mapped as a team. These materials are displayed at the health unit, for the team to monitor and better visualize the CHA micro-area, together with the Situational Diagnosis chart.

The second stage was built with a view to organizing the training process, the purpose of which is to create the unit's training schedule. The following guidelines were worked on at this stage:

- Discuss training priorities with the team;
- Carry out the schedule of the annual training of the ESF;
- Define the topic that will be addressed in each of the training sessions in the proposed schedule;
- Define the technologies that will be used in the approaches;
- Define the locations, date and time that the training will be applied;

- Define the audience that will receive the training (professionals or users);
- Define application methods;
- Define the training evaluation method, whether it will be through questionnaires, debates, observation or other methodologies;
- Define the expected results;

After creating the situational diagnosis, a discussion was started regarding the training priorities at the health unit. In this survey, a high number of patients with Systemic Arterial Hypertension (SAH) and Diabetes Mellitus (DM), putting on the agenda a discussion about the importance of the team having mastery over these matters, with regard mainly to the care and guidance to these patients. At this stage, a schedule of training priorities was created, based on the vulnerabilities raised by the ACS.

Then, with the initial schedule defined with the team, the division of training among the various professionals was discussed, noting the specialties of each one, since they must work within their area of expertise. This split format avoids work overload for a single professional.

A pre- and post-training questionnaire was used, according to the research planning, and the use of CANVA technology to create the content, due to the ease of developing the materials.

In order to carry out the following meeting, it was necessary to define some methods, namely:

- Develop the material that will be used in the training;
- Application of training;
- Evaluate the effectiveness of the proposed method with the team and possible changes in future applications;
- Share the results found with the team.

For the training, the CANVA tool was used as an aid and transmitted to users through a television device. The training was on the theme chosen by the large group in the previous stage, this being the DM.

After applying the training, due to the time being already extrapolated, the questionnaire was distributed to the team, which would be carried out in the form of an interview, to be answered with the help of the telephone recording and sent via WhatsApp®. These audios were received throughout the week, as agreed with the participants.

Using as a basis the content obtained through interviews and questionnaires, three categories of analysis most common in the speeches of health professionals were defined, namely: guidelines, learning methods and digital resources. The analyzed content was confronted with these categories, in order to find similarities and/or discrepancies. As a way of aligning the

analysis, each interview question and of the questionnaires were distributed and analyzed in each category.

DISCUSSION

The analysis of the collected data aimed to answer the research question: “What are the necessary guidelines to guide the permanent education processes in primary health care involving digital technologies?”. The proposed guidelines served as a basis for the application of the practice in primary health care. And yet, as the meetings took place, the guidelines were improved with the help of the health professionals involved, aiming to answer the research question.

It was identified that in Inspiration, when the Territory Mapping and the Situational Diagnosis are carried out, the main protagonist is the CHA, since it is the one who makes periodic visits to the users' homes and has the greatest knowledge of the area covered. of the health unit. This first approach for surveying training needs for staff and the community. Furthermore, the involvement of managers within this process is essential.¹⁴

In the Concept stage, the stage of “Define the locations, date and time that the training will be applied”, as the training schedule is annual, several unforeseen events can occur along the way, thus making it difficult to apply in the pre-defined

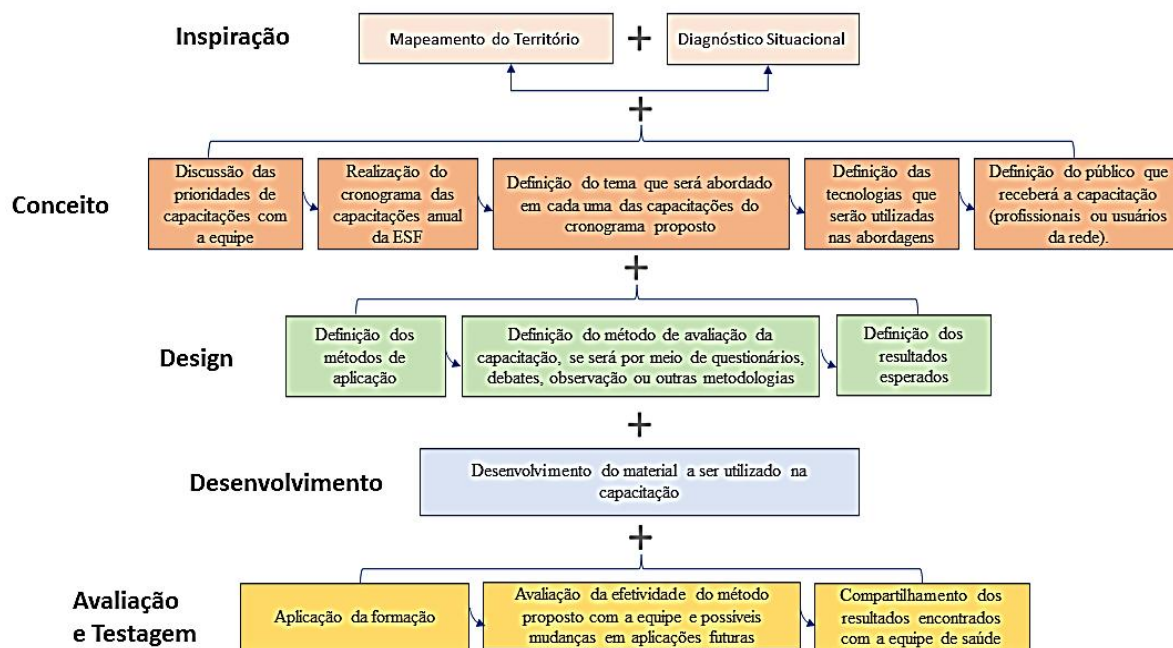
locations, dates and times in the FHS schedule. The other stages of the concept were approved by the health team and used in the application of this study.

The methods of application of the training in the Design stage were defined, and it was verified in the application of the interview that the best method for evaluating the learning, in this health team, were the group debates, or conversation circles, to then generate the sharing of knowledge among health professionals, which is an active learning method for problem solving. It was noticed at this stage the importance of team involvement and the sharing of the various knowledge of the professionals involved¹⁵. In the Development stage, which is the responsibility of the training mediator, the material to be used for training was created using a technological means.

It was applied a training in the last stage, Testing and Evaluation, and through the questionnaire, positive returns were obtained in view of the proposed guidelines, in addition to suggestions for adding other training to the team, in addition to what was identified in the initial stages, more focused on work practices within the health unit and specific diagnoses.

Figure 3 below shows the guidelines defined as a result of the work carried out.

Figure 3 - EPS Guidelines



Source:author (2022)

As the next steps for the study, the results found and the final guidelines will be shared with the team.

CONCLUSION

In this way, the objective of the work, as well as your research question, were answered by bringing as a final result the EPS Guidelines according to Figure 3.

The differential to be highlighted with the proposed process is related to the standardization of the line of thought for health training with a focus consistent with the reality of the community and its micro areas. Consequently, the possibility of applying the learning process in the municipalities of Rio Grande do Sul that follow the recommendations of the Permanent Health Education Plan stands out. An additional contribution is related to the practical application of the model, and the diversity of technologies available for their use. It is observed as a limitation the pandemic situation experienced during the data collection period (COVID-19), due to Therefore, the training audience was already defined (health professionals), and the municipality's health department did not allow the agglomeration of users to apply permanent education.

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