





DEVELOPMENT OF AN INSTRUCTIONAL PROTOTYPE FOR TECHNICAL PROCEDURES PERFORMED IN A MATERIAL AND STERILIZATION CENTER

Maria da Conceição Samu Pezzi^{1,2} 
Marluci Andrade Conceição Stipp² 
Italo Rodolfo da Silva² 
Marlea Crescêncio Chagas² 

¹Fundação Oswaldo Cruz. Rio de Janeiro, Rio de Janeiro, Brasil.

²Universidade Federal do Rio de Janeiro, Escola de Enfermagem Anna Nery, Programa de Pós-Graduação. Rio de Janeiro, Rio de Janeiro, Brasil.

ABSTRACT

Objective: to present the development of interactive media to compose an organizational platform addressing technical procedures performed in Material and Sterilization Centers.

Method: applied research regarding technological production conducted in the *Instituto Nacional de Referências em Atendimento Clínico-Cirúrgico a Crianças, Adolescentes e Mulheres*, Rio de Janeiro, RJ, Brazil. Procedures were organized into five stages carried out between March and August 2017: bibliographical review; selection of technical procedures and routines; establishing outlets to produce media with resources for photography and filming production, including animation; MSC collaborators reviewed and assessed the material; and the support device by which media (audio and video) would be freely accessed by collaborators was selected.

Results: 60 interactive videos were developed using the procedures adopted in routine practices, based on Collegiate and Normative Resolutions and the institution's quality parameters.

Conclusion: establishing interactive outlets was an innovative solution to a lack of financial resources, optimizing resources used in training, procedures and routine activities linked to the context of Material and Sterilization Centers.

DESCRIPTORS: Nursing. Information Technology. Sterilization. Nursing Informatics. Administration.

HOW CITED: Pezzi MCS, Stipp MAC, Silva IR, Chagas MC. Development of an instructional prototype for technical procedures performed in a material and sterilization center. *Texto Contexto Enferm* [Internet]. 2020 [cited YEAR MONTH DAY]; 29:e20190047. Available from: <https://doi.org/10.1590/1980-265X-TCE-2019-0047>

DESENVOLVIMENTO DE UM PROTÓTIPO INSTRUCIONAL PARA PROCEDIMENTOS TÉCNICOS EM CENTRO DE MATERIAL E ESTERILIZAÇÃO

RESUMO

Objetivo: apresentar o processo de produção de mídias interativas para compor uma plataforma organizacional sobre procedimentos técnicos em Centro de Material e Esterilização.

Método: pesquisa aplicada de produção tecnológica realizada no Instituto Nacional de Referências em Atendimento Clínico-Cirúrgico a Crianças, Adolescentes e Mulheres, Rio de Janeiro (Brasil). Procedimentos para alcance dos objetivos foram organizados em cinco etapas, desenvolvidas no período de março a agosto de 2017: levantamento de material bibliográfico; escolha dos procedimentos e rotinas técnicas; criação das saídas para produção das mídias com recursos para produção de fotografias e filmagens, tendo em vista criação de animações das imagens; revisão e avaliação da produção por colaboradores das equipes do Centro de Material e Esterilização; escolha do dispositivo de suporte no qual as mídias (em áudio e vídeo) foram disponibilizadas para consulta dos colaboradores para livre acesso no setor.

Resultados: foram criados 60 vídeos interativos, a partir de procedimentos adotados em rotinas práticas, baseados em Resoluções Colegiadas e normativas ligadas à temática e à qualidade da instituição.

Conclusão: a criação das saídas interativas solucionou, de forma inovadora, a carência e o dispêndio financeiro, além de otimizar os recursos utilizados em treinamentos, procedimentos e atividades de rotina ligadas à realidade do Centro de Material e Esterilização.

DESCRITORES: Enfermagem. Tecnologia da informação. Esterilização. Informática em enfermagem. Gestão.

DESARROLLO DE UN PROTOTIPO DE INSTRUCCIÓN PARA PROCEDIMIENTOS TÉCNICOS EN CENTRO DE MATERIAL Y ESTERILIZACIÓN

RESUMEN

Objetivo: presentar el proceso de producción de medios de comunicación interactivos para componer una plataforma organizacional sobre procedimientos técnicos en un Centro de Material y Esterilización.

Método: investigación aplicada de producción tecnológica realizada en el *Instituto Nacional de Referências em Atendimento Clínico-Cirúrgico a Crianças, Adolescentes e Mulheres*, en Rio de Janeiro (Brasil). Los procedimientos para alcanzar los objetivos fueron organizados en cinco etapas, desarrolladas en el período de marzo a agosto de 2017: levantamiento de material bibliográfico; selección de los procedimientos y rutinas técnicas; creación de las salidas para producción de los medios de comunicación con recursos para producción de fotografías y películas, considerando la creación de animaciones de las imágenes; revisión y evaluación de la producción por colaboradores de los equipos del Centro de Material y Esterilización; selección del dispositivo de soporte, en el cual los medios de comunicación (audio y vídeo) quedaron disponibles para consulta de los colaboradores, para libre acceso en el sector.

Resultados: fueron creados 60 vídeos interactivos, a partir de procedimientos adoptados en rutinas prácticas, basadas en Resoluciones Colegiadas y normativas, vinculadas con la temática y con la calidad de la institución.

Conclusión: la creación de las salidas interactivas solucionó, de forma innovadora, la falta y el gasto financiero, además de optimizar los recursos utilizados en entrenamientos, procedimientos y actividades de rutina vinculados con la realidad del Centro de Material y Esterilización.

DESCRITORES: Enfermería. Tecnología de la Información. Esterilización. Informática en Enfermería. Administración.

INTRODUCTION

The qualification of workers in the health field has historically been a complex challenge for managers so that strategic actions are needed not only to promote education in the work environment, but also to enable individuals to play an active role in the teaching-learning process.

Decree No.3,390 of the Ministry of Health establishes the *Política Nacional de Atenção Hospitalar (PNHOSP)* [National Hospital Care Policy] in the scope of the Unified Health System, proposing guidelines for hospital organization in the *Rede de Atenção à Saúde (RAS)* [Healthcare Network].¹ Among the structuring axes of this Policy, Hospital Care and Training, Development and Management of the Workforce is highlighted.

PNHOSP's guidelines are intended to ensure the quality of hospital care and patient safety, as well as the quality of care delivery and best practices. These should be implemented to ensure patient safety, decreasing unnecessary and avoidable incidents and health-related unsafe acts.¹

Another axis related to the quality of care is the *Programa Nacional de Segurança do Paciente (PNSP)* [National Patient Safety Program] established by Decree N^o.529, the objective of which is to promote the quality of health care in all health facilities within the national territory. Patient safety is one of the six attributes of quality care and has acquired expressive relevance around the world for patients, families, managers, and health workers, with the intention to provide safe health care.²

Even today, the training of people to work in Material and Sterilization Centers (MSC) remains a challenge for many reasons, among which is a lack of understanding that this is a context that directly and indirectly impacts the quality of health care. In Brazil, the Ministry of Health publishes *Resolução de Diretoria Colegiada (RDC)* No. 15 [Collegiate Board Resolution],³ which provides for the requirements of best practices for the processing of health products, among other measures, reinforcing important functionality parameters. The implementation of such measures, however, depends heavily on those applying them.

Such a challenge is more evidently compounded in the public context, the entry door for MSC workers, who enjoy little respect for their technical knowledge or affinity with the subject, considering that training programs in the field, even though they have grown over the years, are not a major factor in assessing the entry of workers in this sector.⁴ Hence, managers have the responsibility to present the content and dynamics of an MSC, which results in work overload and centralization of responsibilities, culminating in uncertainty regarding the results of a complex practice developed in this context.⁴

Therefore, MSCs are run by workers without a specific professional profile, with training and qualification established by MSC managers. Note that there is an understanding that the care directed to patients should be the priority of training programs providing education to future healthcare workers due to the direct impact and immediate result of care delivery on practice that is more frequently focused on the treatment and cure of diseases.⁵⁻⁶ Nonetheless, other contexts of health, even if distant from the direct care delivered to patients, imply actions that influence the quality of care delivery and, for this reason, require strategies to facilitate understanding of the importance of these other contexts.

The preceding discussion reveals there is a lack of resources promoting the technical-scientific training of workers, including elements (knowledge x preparedness x updating) that are needed to enable MSC workers to present efficacious performance, which in turn result in recurrent failures in the work process, impacting the quality of care and patient safety.⁷⁻⁸

It is worth noting that the constant use of new technologies has impacted all areas, from the social, personal and professional spheres of million of people, along with their virtual contexts.

Note that actions intended to solve problems should be applied in an organized and strategic manner in order to favor critical reflection, creativity, valuing activities such as continuous education,

verifying the difficulties faced by all workers, including those working in an MSC. Thus, all workers are expected to play the role of facilitators and, at the same time, multiply knowledge within and for MSC.

Additionally, it is important to consider that actions involving the processing of health products, are admittedly complex and extremely important to delivering safe care to all those using health services.⁵

Therefore, the following question is pertinent: how is it possible in the current context to meet the complex and emerging demands of Material and Sterilization Centers in the face of challenges accruing from the inadequate quantity and quality of human resources working in this context? The empirical context and results reported in the scientific literature shows there is a lack of strategy at a national level taking into account the teaching-learning process within the context of MSC.

Thus, from a strategic perspective intended to obtain improved performance in MSC, this paper's objective is to present the development of interactive media to compose an organizational platform addressing technical procedures performed in Material and Sterilization Centers.

METHOD

This study represents the first step towards the development of an organizational platform, which is kept confidential by the *Sistema de Coordenação de Gestão Tecnológica da Fundação Oswaldo Cruz (FIOCRUZ)* [Technological Management Coordination System of the Oswaldo Cruz Foundation] under registration N°. 70/15, described in a digital prototype as a tool to facilitate the teaching/learning process in MSC.

The objective of this applied research, in the technological production modality, is to find an immediate solution for a problem.⁹ Thus, this study refers to the development of a technological product to be used by MSC staff, considering that information technology is useful in nursing care within the context of MSC.

The procedures were organized into five stages. The first consisted of a literature review to identify scientific sources to support the structural development of the media's theoretical content. The focus was standard operating procedures (SOP) concerning MSC and FIOCRUZ current standards directed to the documentation of quality, such as updated SOP, Collegiate Board Resolutions such as RDC N°. 15, and other resolutions addressing MSC, in addition to specific manuals concerning instruments to clarify their correct manipulation.

Bibliographical material included the latest best practice manual from the *Sociedade Brasileira de Enfermeiros de Centro Cirúrgico, Recuperação Anestésica e Centro de Material e Esterilização (SOBECC)* [Brazilian Society of Surgical Center Nurses, Anesthetic Recovery and Material and Sterilization Center], in addition to technical literature on MSC procedures, such as surgical instrumentation manuals for both conventional and videolaparoscopy.¹⁰

The FIOCRUZ document addressing quality was used to meet the legal requirements of production, processing, access, preservation, and conservation of organizational culture.

The second stage consisted of choosing the technical procedures and routines that would compose the prototype, which is the composition of the media *per se*. One criterion used was selecting the set of procedures that generated the most frequent errors in MSC, that is, the procedures that were the most complex in terms of surgical instruments and that, as a consequence, require more preparation time.

Errors were identified by consulting an MSC error logbook. This book contained the typification of production errors of each surgical box or tray listed by MSCs. Preparation time was associated with the complexity of assembling instruments, in addition to the composition of boxes and trays according to number of pieces and their characteristics (whether they could be dismantled or not).

The third stage focused on the creation of interactive outlets, the media *per se*. The procedures were selected, described in technical stages of procedures exclusively performed in surgical preparation – the sub-sector of MSC related to the preparation of instruments used in surgical care. The instruments were photographed from different angles to highlight details. The instruments were also filmed according to the technical routine of the related procedures, based on SOBECC best practices.¹⁰

A collaborator who was a nursing technician working in the MSC and with information technology and administration performed the technical procedures after being trained with the MSC manual containing SOPs, in addition to technical standards and routines. Hence, this collaborator reproduced the techniques in an orderly and organized manner, consistent with the sector's context, always under the guidance of this study's author. Note that the identity of the technician remains confidential during the scenes that compose the video.

The fourth stage consisted of reviewing the production of media and checking for technical or audiovisual errors. This author, the MSC team and the MSC collaborator who works with information technology and administration (media developer) checked the assertiveness and coherence of content, as well as the design used.

Recording was assessed by analyzing image editing, shooting and audio editing, production of photographic images and 3D images, in order to compose the content necessary to develop the media.

The device used to support media dissemination was chosen in the fifth stage with the aid of the MSC collaborators. A desktop was used as the device to contain the prototype media, concatenated and put into the composer mode, exclusively for consulting content. This content was produced in audio and video, and was freely accessible by the MSC collaborators, produced in standalone mode.

Figure 1 presents this study's flowchart.

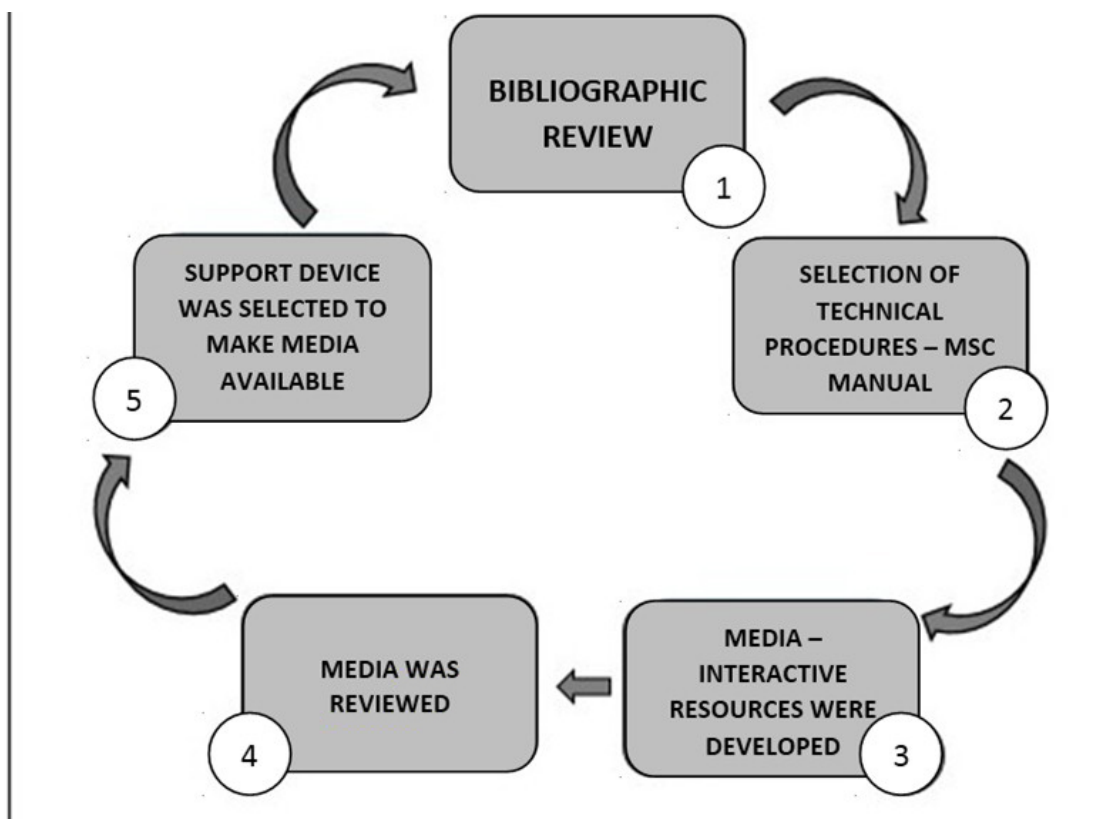


Figure 1 – Flowchart representing the production stages of interactive media.

Note the standalone program was chosen intentionally, functioning in the creator mode, in order for the system to be self-sufficient, and not require auxiliary software that would necessitate licensing.

All the stages were developed in the MSC of a National Institute of reference that provides clinical-surgical care to children, adolescents, and women located in Rio de Janeiro, RJ, Brazil from March to August 2017.

Inclusion criteria were: procedures included in the Institute's MSC standard and routines manual based on existing SOP. Outdated procedures included in the MSC manual and all the procedures performed in units other than the sub-sector of surgical preparation were excluded.

RESULTS

This study consists of the development of 60 interactive videos, categorized by sectors in which the instruments are used, listed in an index on the prototype's initial page, to facilitate MSC collaborators in choosing content they wish to consult.

Hence, the central categories received the following names: gynecological videolaparoscopy, diagnostic video hysteroscopy, conventional gynecological surgery, and inhalation therapy material. The following number of videos was developed for each category: 20 videos for gynecological video laparoscopy; 10 videos for diagnostic video hysteroscopy; 20 for gynecological conventional surgery; and 10 videos for inhalation therapy material.

The media were composed of content concerning procedure kits, conventional surgery boxes and trays, video surgery boxes, hysteroscopy kits and detached instruments. As previously mentioned, all these compositions are related to the sectors in which instruments are used.

An example of media with video and audio is presented in Figure 2, along with the assembly procedure and processing of the "veress needle", prepared separately and belonging to the video laparoscopy category.



Figure 2 – Example of media with video and audio addressing the procedures of assembling and processing a "veress needle".



Figure 3 – Example of video and audio addressing the assembling and processing of “Kit Bettochi” of video hysteroscopy, including the preparation in the form of a kit.

Another example of media with video and audio is presented in Figure 3, which addresses the procedure for assembling and processing a “Kit bettochi”, prepared in the form of a kit and belonging to the video-hysteroscopy category.

All the media included processing actions to which instruments should be submitted, such as the type of equipment and chemical product used to clean, how it should be dried after cleaning, assembly itself, number of pieces and type of the cycle used in the autoclave for sterilization, in addition to important warnings about conditions of use.

DISCUSSION

The prototype was intended to improve quality of care in terms of organizing internal processes developed in MSC. It provided access for the nursing staff to safe and updated information concerning practices recommended by national and international regulating agencies. There was a need to pay attention to the standardization of information, considering the large amount of content addressing MSC that is currently available but not always safe or reliable.

Even though RDC No. 15 provides categorical guidelines that are presented in MSC face-to-face training provided by nurses, the safety of technical reproduction, exactly as it should be presented, is not ensured. COFEN Resolution N°. 543 highlights that at least one nurse must be present for all shifts in the sector, in addition to the presence of a nurse responsible for the unit.¹¹ However, MSCs are not supervised full-time by someone who is accountable for the information gathered and procedures performed by the technical team.⁷

Additionally, it is important to note the language used to designate technical terms of surgical instruments that are processed by MSC. Since there was no specific nomenclature for instruments established in the SOP in the MSC, there was a dichotomy between terms usually used to identify the instruments that did not refer to technical terms, such as names of tweezers and other products used in hospital care. This fact slowed the development of videos, especially during the phase of the literature review, because it was necessary to identify instruments used in some surgical procedures. We verified the need to adopt a universal nomenclature in order to ensure the safety of procedures involving instruments. The use of a single nomenclature for health products facilitates maintaining the practice of MSC teams in their routine, supporting the sector work process.¹²

The standalone program was chosen in order to produce the prototype in the mode it was developed so it would not require auxiliary software to process data. This makes it possible to add content more easily in the future to meet the demands of MSC, enabling greater interaction between employees and this technology.

Content should be constantly updated and open to pertinent changes in terms of new techniques and information to contribute to work processes, meeting operational demands, focused on improving the quality of care delivered to patients.¹³ Information concerning documentation, whether in regard to institutional quality or technical means, were systematized and aligned with the operational context of the sub-sector of the MSC addressed here. The objective was to enable integrating strategic, tactic and operational plans, facilitating the management of information and knowledge available that pertains to the MSC context.

In this context, we note the benefits of the organizational platform developed in this study to train MSC workers, capable of consciously and rationally using the content available.¹⁴ The expectation, from a managerial perspective, is to optimize technical procedures, especially the assembling of surgical kits, a situation in which there is always the possibility of losing instruments. Such losses, however, can be minimized with detailed step-by-step demonstration for each kit assembly.

This prototype contains content that can be used as a virtual learning environment (VLE), once it is capable of aggregating a range of information that is relevant for an MSC and its staff.¹⁴

The prototype development included the original platform basis to which it belongs: tools concerning information technology, control, management, distance learning and quality of organizations, which results in patient safety.

Note that the application of the content is restricted to the sub-sector of surgical preparation. There is content to be developed, considering there are numerous surgical-care specialties, which require further development. Another limitation is associated with a difficulty acquiring manuals for the instruments used in media, as provided by the manufacturers. A lack of specific manuals restricted some technical procedures concerning assembling surgical instruments.

CONCLUSION

This study enabled verifying the process of developing specific content, concerning education and management, giving priority to information provided to a work team, in addition to establishing the reliability of technical procedures within an MSC, so that a technical information system directed to MSC was developed.

From the perspective of using the technical information system developed here, the creation of interactive outputs resolved in an innovative way the deficiency of MSC concerning restricted time and financial resources, respectively, difficulties in providing technical training to the MSC staff and maintaining instruments involved in procedures to organize MSC's internal actions. It also optimized the time designated for the development of technical procedures. The staff reported having to memorize the stages used to prepare some boxes and trays every time they had to perform procedures.

Hence, it was possible, in the short term, to apply content to perform revised and updated protocols, produce video content, disseminate content, and train MSC collaborators.

In the medium term, content can be expanded so that information will be accessed by other MSCs.

Having content that is applicable to the MSC routine effectively contributed to expanding and improving the work performed in MSCs, including the management of surgical instruments' preparation processes, reducing procedural errors, and promoting information that can be used by more than one sector and related services. The results have implications for both care delivery and teaching.

The prototype was successfully developed and it positively impacted teaching/learning in MSC, and enabled gathering the procedures performed in this scenario using revised, updated content, integrating technology, people and machines.

REFERENCES

1. Ministério da Saúde (BR). Portaria nº 3.390, de dezembro de 2013. Institui a Política Nacional de Atenção Hospitalar (PNHOSP) no âmbito do Sistema Único de Saúde (SUS), estabelecendo-se as diretrizes para a organização do componente hospitalar da Rede de Atenção à Saúde (RAS). Diário Oficial [da] República Federativa do Brasil. Brasília, DF, 30 dez. 2013 [cited 2019 Jul 30]. Available from: <http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/>
2. Ministério da Saúde (BR). Portaria n.529, de 1º de abril de 2013: institui o Programa Nacional de Segurança do Paciente (PNSP). Brasília (DF): Diário Oficial da União; 2013 [cited 2019 Jul 30]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0529_01_04_2013.html
3. Ministério da Saúde (BR), Agência Nacional de Vigilância Sanitária. Resolução n.15, de 15 de março de 2012. Dispõe sobre requisitos de boas práticas para o processamento de produtos para saúde [Internet], Brasília: ANVISA; 2012 [cited 2017 jun 5]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/anvisa/2012/rdc0015_15_03_2012.html
4. Moriya GAA, Takeiti MH. Editorial. Rev SOBEC [Internet]. 2016 [cited 2019 Sept 8];21(1):1-2. Available from: <https://doi.org/10.5327/Z1414-4425201600010001>
5. Hoyashi CMT, Rodrigues DCGA, Oliveira, MFA. Central de material e esterilização na formação do enfermeiro: proposta de um manual de práticas. Rev Práxis [Internet]. 2015 [cited 2017 Nov 23]; 14(2):36-45. Available from: <https://dx.doi.org/10.25119/praxis-7-14-761>
6. Lucon S, Bracciali L, Pirolo S, Munhoz C. Formação do enfermeiro para atuar na central de esterilização. Rev SOBEC [Internet]. 2017 [cited 2018 Feb 10];22(2):90-7. Available from: <https://dx.doi.org/10.5327/Z1414-4425201700020006>
7. Gonçalves R, Santana R. Nursing diagnosis for material and sterilization center: concept analysis. Rev Enferm UFPE [Internet]. 2016 [cited 2018 Feb 10];10(2):485-94. Available from: <https://dx.doi.org/10.5205/reuol.8557-74661-1-SM1002201614>
8. Psaltikidis E. Avaliação de tecnologias no centro cirúrgico, recuperação pós-anestésica e centro de material e esterilização. Rev SOBEC [Internet]. 2016 [cited 2018 June 12]; 21(4):223-8. Available from: <https://dx.doi.org/10.5327/Z1414-4425201600040009>
9. Meneses A, Sanna MC. Métodos de pesquisa empregados na produção do conhecimento sobre administração em enfermagem. Rev Eletr Enf [Internet]. 2016 [cited 2019 Sept 08]; 17(4). Available from: <https://dx.doi.org/10.5216/ree.v17i4.34648>

10. Sociedade Brasileira de Enfermeiros de Centro Cirúrgico, Recuperação Anestésica e Centro de Material e Esterilização. Manual de Práticas Recomendadas da SOBECC. 7th ed. São Paulo, SP(BR): SOBECC; 2017.
11. Conselho Federal de Enfermagem (BR). Resolução COFEN N° 543/2017, de 18 de abril de 2017. Atualiza e estabelece parâmetros para o dimensionamento do quadro de profissionais de enfermagem nos serviços/locais em que são realizadas atividades de enfermagem. Brasília (DF): Conselho Federal de Enfermagem (COFEN) [Internet]; 2017 [cited em 2019 Aug 02]. Available from: http://www.cofen.gov.br/resolucao-cofen-5432017_51440.html
12. Pinheiro ALS, Andrade KTS, Silva DO, Zacharias FCM, Gomide MFS, Pinto IC. Health management: the use of information systems and knowledge sharing for the decision making process. *Texto Contexto Enferm* [Internet]. 2016 [cited 2019 Sept 06]; 25(3):e3440015. Available from: <https://dx.doi.org/10.1590/0104-07072016003440015>
13. Santos TO, Passos PL, Tolfo SD. Implantação de sistemas informatizados na saúde: uma revisão sistemática. *Rev Eletron Comun Inf Inov Saúde* [Internet]. 2017 [cited 2019 Sept 06]; Available from: <https://dx.doi.org/10.29397/reciis.v11i3.1064>
14. Bogo PC, Bernardino E, Castilho V, Cruz EDA. The nurse in the management of materials in teaching hospitals. *Rev Esc Enferm USP* [Internet]. 2015 Aug [cited 2019 Sept 06]; 49(4):632-9. Available from: <https://dx.doi.org/10.1590/S0080-623420150000400014>

NOTES

ORIGIN OF THE ARTICLE

Article extracted from the postdoctoral study - Plataforma interativa: uma ferramenta digital para qualidade total, presented to the Programa de Pós-graduação, *Escola de Enfermagem Anna Nery*, *Universidade Federal do Rio de Janeiro*, in 2018.

CONTRIBUTION OF AUTHORITY

Study design: Pezzi MCS, Chagas MC.

Data collect: Pezzi MCS.

Data analysis and interpretation: Pezzi MCS.

Discussion of the results: Pezzi MCS, Stipp MAC, Silva IR, Chagas MC.

Writing and / or critical review of content: Pezzi MCS, Stipp MAC, Silva IR.

Review and final approval of the final version: Pezzi MCS, Stipp MAC, Silva IR, Chagas MC

ACKNOWLEDGMENT

Special thanks to the noble and memorable master, Professor Dr. Josete Luzia Leite, original tutor of this study.

FUNDING INFORMATION

This study was financed by bolsa Pós Doutorado Junior, Conselho Nacional de Desenvolvimento Científico e Tecnológico (PDJ/CNPq). Process:150523/2016-5.

APPROVAL OF ETHICS COMMITTEE IN RESEARCH

Approved by the Ethics Committee in Research with Human Beings of the *Instituto Nacional de Saúde da Mulher, da Criança e do Adolescente Fernandes Figueira* - FIOCRUZ, opinion n. 2.029.255/2017, Certificado de Apresentação para Apreciação Ética CAAE 64922115.9.0000.5269.

CONFLICT OF INTEREST

There is no conflict of interest.

HISTORICAL

Received: March 17, 2019.

Approved: September 16, 2019.

CORRESPONDING AUTHOR

Maria da Conceição Samu Pezzi

mcpezzi@uol.com.br

