

## CONSTRUCTION OF A SURGICAL SAFETY MANUAL FOR HEALTH PROFESSIONALS\*

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**ABSTRACT:** Educational technologies built from conceptions of health workers can be used in educational actions and contribute to improve daily professional practice. The purpose of this study was to describe the construction of educational technology on safe surgery. Case study on the production of educational technology through the construction of a manual, conducted in the first half of 2015, based on data on the perceptions of the staff of the surgery clinic area and surgical center of the University Hospital of Cuiabá, State of Mato Grosso on surgical safety collected through semi-structured interviews. Access to the professionals' knowledge/expertise has made it possible to produce a material that meets the needs of the group and can be used in the implementation of the surgical safety protocol.

**DESCRIPTORS:** Patient safety; Learning; Operating room; Educational technology; Continuing education.

### CONSTRUÇÃO DE MANUAL SOBRE CIRURGIA SEGURA PARA PROFISSIONAIS DE SAÚDE

**RESUMO:** As tecnologias educacionais, construídas a partir das concepções dos trabalhadores de saúde, podem ser utilizadas em ações educativas e contribuir para a prática profissional cotidiana. O objetivo foi descrever a construção de tecnologia educacional sobre cirurgia segura. Trata-se de estudo de caso da produção de tecnologia educativa do tipo manual, desenvolvido no primeiro semestre de 2015, a partir de dados coletados por entrevistas semiestruturadas, sobre as percepções dos profissionais sobre a segurança cirúrgica atuantes da clínica cirúrgica e centro cirúrgico de Hospital Universitário de Cuiabá, estado do Mato Grosso. A consideração dos saberes dos profissionais propiciou que o material construído atendesse às necessidades do grupo e estivesse apto a ser utilizado na implantação do protocolo de cirurgia segura.

**DESCRIPTORES:** Segurança do paciente; Aprendizagem; Sala cirúrgica; Tecnologia educacional; Educação continuada.

### CONSTRUCCIÓN DE MANUAL DE CIRUGÍA SEGURA PARA PROFESIONALES DE SAÚDE

**RESUMEN:** Las tecnologías educacionales, elaboradas por medio de las concepciones de los trabajadores de salud, son esenciales en acciones educativas para contribuir con la práctica profesional cotidiana. El objetivo del trabajo fue describir la construcción de tecnología educacional acerca de cirugía segura. Este es un estudio de caso sobre la producción de tecnología educativa del tipo manual, desarrollado en el primer semestre de 2015, con base en datos obtenidos por entrevistas semiestructuradas, considerando las percepciones de los profesionales de la clínica quirúrgica y centro quirúrgico de Hospital Universitario de Cuiabá, estado de Mato Grosso, acerca de la seguridad quirúrgica. La consideración de los saberes de los profesionales posibilitó que el material elaborado atendiera a las necesidades del grupo, así como estuviera apto a ser utilizado en la implantación del protocolo de cirugía segura.

**DESCRIPTORES:** Seguridad del paciente; Aprendizaje; Sala quirúrgica; Tecnología educacional; Educación continuada.

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## ● INTRODUCTION

In 2007/2008, the World Health Organization (WHO) launched the second global challenge that emphasized surgical care, including prevention of surgical site infection, safe anesthesia, safe surgical teams and surgical care indicators <sup>(1)</sup>.

The Surgical Safety Checklist was developed from evidence-based practice and consists of steps to be followed by professionals, in order to reduce the occurrence of injury to the patient <sup>(2-4)</sup>.

Studies have shown that the rates of adverse events related to surgical circumstances are considerable, and the use of checklists may reduce these events. However, adherence to the protocol is low, despite its use in some health institutions <sup>(2-3)</sup>.

The implementation of safe surgery requires some changes in the workplace and in the execution of care practices. The educational process favors the adherence of health professionals to the protocol, and educational technologies can be used to in the training of the staff.

Educational technology mediates the construction of dimensional, technical, ethical, and relational skills targeted to daily life, aiming to modify a given situation, and "consists of a systematic set of scientific knowledge that allows planning, execution, control and monitoring of the entire formal and informal educational process" <sup>(4: 345)</sup>. This knowledge can take many forms, such as printed materials, e.g. the production of booklets, brochures and manuals <sup>(5)</sup>.

The hospital where the present study was conducted, a teaching hospital with professionals and students with different grade levels, had not implemented a surgical safety manual. Considering Resolution n.36 <sup>(6)</sup> of the Collegiate Board of Directors (RDC) of the Brazilian National Health Surveillance Agency, which recommends the implementation of such protocols, and the occurrence of adverse events in health institutions, an educational material was produced to meet the needs of the group.

The purpose of this study was to describe the construction of safety-related educational technology, in the form of a manual, to be used in the implementation of the surgical safety protocol.

## ● METHOD

This is a case study that describes the elaboration of a surgical safety manual based on the concepts of health professionals working in the surgery clinic area and surgical center of a University Hospital of Cuiabá, Mato Grosso state, in 2015.

Data was collected through semi-structured interviews and was analyzed by thematic content analysis, identifying the themes that supported the construction of the topics of educational technology <sup>(7)</sup>.

The process of construction of the manual was based on the Pasquali's model of content validation <sup>(8-9)</sup>.

The manual was elaborated from March to July 2015, using the Publisher program. The images and the vectors were acquired in image banks on the internet, and a web designer was responsible for layout and editing. The manual was finally printed on coated paper, size 20x15, color.

The production of educational material requires time for data collection, bibliographic research, selection of pictures that fit the content of the text, and use of the most advanced technology for the construction of the material itself. Since this process involves a multidisciplinary team and considerable costs, mobilization of financing for long-term projects is recommended.

The project was submitted to the Research Ethics Committee of Júlio Muller University Hospital and obtained approval under statement of purpose n. 891.499. Respondents signed the Free Informed Consent Form, in accordance to Resolution n. 466 of Brazil's National Health Council <sup>(10)</sup>.

This study is part of the master's thesis entitled: Safe Surgery - Construction and validation of educational technology.

## ● RESULTS/DISCUSSION

The manual has 40 pages and was structured as follows: cover, back cover, presentation, summary, glossary and topics: patient safety, what is safe surgery, safe surgery flow chart, factors that may interfere in surgical safety, implicit processes in safe surgery, WHO surgical safety checklist and implementation manual, care at the clinic, hospital discharge, reporting of adverse events, indicators, conclusions and references<sup>(11)</sup>.

The topic patient safety based on literature findings provides a general presentation of the subject, explaining the origin of safe surgery to the reader.

The topic "What is safe surgery" concerns concept, essential objectives, adverse surgical events and implementation status in Brazil.

Next, a flowchart relating the professionals' conceptions about safe surgery and the factors that influence safe procedures is presented, with emphasis on human resources, materials, infrastructure and management.

Regarding the pre-hospital stage during the preoperative period, the manual addresses safe surgery in primary care, focusing on timely patient's referral, proper diagnosis and testing.

The hospital stage begins at patient's admission, including the time spent by the patient in a hospital unit. Emphasis is given to patient identification, pre-anesthetic consultation and surgical planning.

In the intraoperative stage, the manual emphasizes the importance of teamwork, antibiotic prophylaxis, check of materials and equipment, confirmation of the procedure, surgery site demarcation, patient monitoring, sterilization and use of the best surgical technique.

In the postoperative period, emphasis is given to immediate care, curative surgical incision, drainage, hygiene, feeding and discharge guidelines.

Human resources refer to its sizing and education of professionals to improve care. The material resources involve equipment, inputs, quantity and quality, in all services provided.

The infrastructure is related to the status of the facilities (buildings), and renovations are recommended to improve the areas for patient care.

Regarding management, the manual shows that the referred resources should be managed so that appropriate care is provided, ensuring the planning of the actions in the process of care, for the execution and the achievement of the goals.

Implicit safe surgery actions include patient identification, hand hygiene, partnership between professionals and patients, precautions regarding medications, falls and other protocols to be implemented in the hospital.

Regarding patient identification, conference was poorly done. Therefore, the manual emphasized the importance of the identification protocol, suggesting its implementation to avoid adverse events<sup>(12)</sup>.

Poor hand hygiene by health professionals was detected, and, therefore, standardization of the hand hygiene protocol was recommended.

The partnership between patients and professionals is not satisfactory. It is essential that the health staff and users understand its importance, because the protocol foresees patient involvement in the care process, and the staff should be prepared for this strategy.

The WHO surgical safety checklist was described at the moments of use: before induction of anesthesia, before surgical incision and before the patient leaves the operating room<sup>(1)</sup>.

Adverse events reporting encourages learning, through errors and multidisciplinary discussions, aiming to prevent these events. Near misses should be monitored and recording instruments should be developed to facilitate tracking, analysis and proper handling of errors<sup>(13)</sup>.

The indicators were not mentioned by the participants but added to the manual, in order to verify adherence to the protocol.

During the manual elaboration process, further analysis of these topics and issue was suggested, with the purpose of standardizing and improving the processes. The educational technology produced can be used individually or in groups.

Since this is a university hospital, project supervision should be made by expert preceptors specialized in surgical safety, and the patient safety theme should be included in the discussions<sup>(14)</sup>.

Although the surgical safety checklist was not implemented in the hospital, the professionals mention some of its parts. Analysis of the checklist based on the views of professionals and legislation indicated that the formalization of safe surgery is required<sup>(1,6)</sup>.

Involving the professionals in the production of educational material to be used by them contributed to the selection of the topics related to the needs of the group, as it reflects the difficulties of the professionals.

The construction of the manual entails considerable costs, such as acquisition of images, use of skilled labor and graphic services. Therefore, the use of project finance arrangements is recommended.

## ● FINAL CONSIDERATIONS

Access to expert knowledge about the production of educational materials is important, since the production of the manual was based on the reality experienced and through literature searching. Elaboration of the material with support of psychometry facilitated the step-by-step of the construction, guiding the systematized production.

The contributions of the present study are targeted to the education of health professionals, favoring the process of implementation of the protocol in the referred institution, in order to improve work processes and coordination among the teams.

The study is limited to institutions that are implementing the protocol, such as the hospital where phase of the protocol, such as the University Hospital of Cuiabá. Assessment of protocol adherence is recommended after the educational action using the material produced (manual) is completed, in order to verify the scope of the manual.

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