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Active methodologies for safety culture

Metodologias ativas para a cultura de segurança

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ABSTRACT

Introduction: The promotion of the patient safety culture makes part of the strategies proposed in the National Patient Safety Program. **Objective:** This paper presented the experience of the Patient Safety Nucleus during 2018 in promoting the patient safety culture. **Method:** The use of active learning methodologies in a medium-sized public hospital in Minas Gerais, that belongs to the Sentinel Network of Anvisa. **Results:** The "10 Goals – Patient Safety" campaign originated after the identification and prioritization of the macroproblems related to patient safety in the institution. The 10 goals defined were: 1) Effective communication; 2) Fall prevention; 3) Safe surgery; 4) Prevention of pressure injury; 5) Safe use of probes and catheters; 6) Safe identification; 7) Drug safety; 8) Clean and safe care; 9) Patient involved; and 10) Safe and rational use of blood. The structuring of educational strategies was based on active learning and problematization methodologies. **Conclusions:** It was observed that the use of active methodologies can stimulate and induce employees and users to discuss and know the meaning of the hospital safety culture.

KEYWORDS: Patient Safety; Adverse Event; Active Learning Methodologies; Permanent Education

RESUMO

Introdução: Dentre as estratégias propostas no Programa Nacional de Segurança do Paciente está a promoção da cultura de segurança do paciente. **Objetivo:** Apresentar a experiência do Núcleo de Segurança do Paciente durante o ano de 2018 na promoção da cultura de segurança do paciente. **Método:** Aplicação de metodologias ativas de aprendizado, em um hospital público de médio porte de Minas Gerais, pertencente à Rede Sentinela da Anvisa. **Resultados:** A campanha "10 Metas – Segurança do Paciente" foi originada após a identificação e a priorização dos macroproblemas relacionados à segurança do paciente na instituição. As 10 metas definidas foram: 1) Comunicação efetiva; 2) Prevenção de queda; 3) Cirurgia segura; 4) Prevenção de lesão por pressão; 5) Uso seguro de sondas e cateteres; 6) Identificação segura; 7) Segurança medicamentosa; 8) Cuidado limpo e seguro; 9) Paciente envolvido; e 10) Uso seguro e racional do sangue. A estruturação das estratégias educacionais foi pautada em metodologias ativas de aprendizado e problematização. **Conclusões:** Observou-se que o uso de metodologias ativas pode estimular e induzir os colaboradores e usuários a discutirem e a conhecerem o sentido da cultura de segurança do hospital.

PALAVRAS-CHAVE: Segurança do Paciente; Evento Adverso; Metodologias Ativas de Aprendizado; Educação Permanente

INTRODUCTION

The *"To err is human: building a safer health system"* medicine report of the American Academy of Sciences is an international milestone in patient safety because it presents worrisome data on the harm suffered by American patients, with about 44,000 to 98,000 deaths in the United States every year, due to adverse events (AEs) related to hospital care. According to the report, roughly 1 million patients admitted to US hospitals every year suffered care-related AEs, with more than half of these events resulting from preventable failure[1].

The World Alliance for Patient Safety was created in 2004 by the World Health Organization (WHO) to raise awareness and political commitment to improving safety of care and support Member States in the design of public policies. In partnership with the Joint Commission International, the WHO has encouraged the adoption of six international patient safety goals to promote best practices for risk and AE reduction in healthcare services. The six goals are: 1) identify patients correctly; 2) improve effective communication between healthcare professionals; 3) improve the safety of high-alert medications; 4) ensure safe surgery at the correct intervention site, procedure and patient; 5) sanitize hands to prevent healthcare-associated infections; and 6) reduce the risk of patient harm resulting from falls[2].

Pursuant to this initiative, in 2013, the Brazilian Ministry of Health established, through Ordinance n. 529, of April 1, the National Patient Safety Program (PNSP). Next, the Brazilian National Health Surveillance Agency (Anvisa) published the Resolution of the Collegiate Board (RDC) n. 36, of July 25, 2013, making the reporting of AEs occurred in healthcare establishments in Brazil mandatory. In article 2 of said RDC, individualized offices, clinical laboratories and mobile and home care services were excluded from the scope of the resolution.

One of the strategies proposed in the PNSP is the promotion of patient safety culture. In light of RDC n. 36/2013, safety culture is understood as:

> a set of values, attitudes, skills and behaviors that determine commitment to health and safety management, replacing guilt and punishment with the opportunity to learn from failure and improve healthcare[3].

Patient Safety is, in turn, "[...] the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum"; whereas an incident is an "an event or circumstance that could have resulted, or did result, in unnecessary harm to a patient"[4].

From this perspective, the fallibility of the human being is recognized, as well as the need for ongoing surveillance and strategies to prevent errors and harm to patients, for which the training of healthcare professionals is essential.

In order to effectively change everyday professional practices, the promotion of learning at the workplace is fundamental, that is, Continuing Health Education (CHE) actions. CHE can be summarized in the incorporation in the work routine of institutions of teaching practices and meaningful learning, with the objective of driving reflection on the work process and fostering institutional change[5].

In 2004, the Brazilian Ministry of Health established the National Policy of Continuing Education in Health (PNEPS) with the purpose of training the professionals of the Unified Health System (SUS), through the articulation and integration between teaching, service and community. In order to improve work practices, PNEPS seeks to combine academia with the labor universe through critical reflections, enabling the convergence between learning and teaching in the everyday routine of health services[5].

CHE is based on the discussion about everyday events found at work, where the pursuit of solutions recognizes the knowledge and previous experiences of each individual[4]. This approach supports the active methodologies that use discussions as a teaching-learning strategy, so that the learner is encouraged to examine, reflect, relate previous experiences and redefine new discoveries[6].

The "active methodology" term refers to a critical-reflexive conception of education, which places students as promoters of their own education[6]. In this process, autonomy and freedom are recognized and students play a leading role in building their own knowledge. Active methodologies are necessary tools for the expansion of new possibilities of choice in any decision-making process[7].

The objective of this paper was to present the experience of a medium-sized public hospital in the Brazilian state of Minas Gerais with the promotion of a patient safety culture through the use of active learning methodologies in the achievement of the "10 Goals - Patient Safety" campaign during the study year of 2018.

METHOD

This paper is characterized as a descriptive, experience report study, carried out by the Patient Safety Center (NSP) during 2018.

The setting where the experience was conducted is a public hospital in Minas Gerais. The hospital is a reference center of medium and high complexity care for the northwestern macroregion of the state. It has 120 beds and has been a member of the Anvisa Sentinel Network for about 10 years.

The "10 Goals - Patient Safety" campaign came about after patient safety-related macroproblems in the institution were identified and ranked in order of priority through an affinity diagram and prioritization matrix with NSP members. These tools were chosen because they are far-reaching and easy to apply.

Identifying the macroproblem was the first stage of the campaign planning. It was done by brainstorming: every NSP member wrote down a problem involving patient safety on a card. Every participant received three cards, i.e. every participant could note down up to three safety-related issues. Subsequently, the cards were numbered and pasted onto a whiteboard, exposing all the safety-related issues perceived by participants[8].

The second step involved applying the affinity diagram. The cards were grouped into clusters of meaning and each group received the title that best represented the problems mentioned[8].

After the identification of the macroproblem, we proceeded to the third step: prioritization of the macroproblems.

Prioritization of macroproblems is necessary to support decision making and to address the problems with most impact and more suitable to receive an intervention. Therefore, the macroproblems were organized in a table in which each item was given a score ranging from 0 to 3 (0-low; 1-significant; 2-high and 3-very high). The decision-making matrix assessed the dimensions of relevance, time/urgency, feasibility and viability. After the stakeholders agreed the score of each item and totaled the score of each macroproblem, the hierarchy of the macroproblems was established based on the highest scores[8]. The results have shown "poor compliance with patient safety protocols" as the top priority macroproblem.

Once we were aware of the mapped reality, we began to survey the interventions needed to address "poor compliance with patient safety protocols". Thus, we set 10 goals to be addressed, related to each of these topics, based on the six PNSP protocols (safe surgery; hand hygiene; fall prevention; pressure injury prevention; safe identification and drug safety) and the main patient safety problems identified in AE monitoring (communication; use of catheters, blood transfusion and patient involvement in the care center).

The 10 goals we set were: 1) Effective communication; 2) Fall prevention; 3) Safe surgery; 4) Prevention of pressure injury; 5) Safe use of probes and catheters; 6) Safe identification; 7) Drug safety; 8) Clean and safe care; 9) Patient involvement; and 10) Safe and rational use of blood.

The design of the campaign emphasized educational initiatives with active learning methodologies in order to build consistent and critical learning about patient safety issues. The execution time for each goal was one month.

Educational initiatives were based on active learning methodologies, with emphasis on the use of discussions about real work situations. The tools used to apply the methodology were: educational games, simulated jury, discussion of problem situation, realistic simulation, sector blitz, among others. In addition to these techniques and tools, educational materials that were specially produced for the campaign were of paramount importance: posters, folders, booklets, photo cards, personalized chocolate bars, and wristbands.

RESULTS AND DISCUSSION

In January we made the educational material to support and promote the campaign: banners, posters, folder, desk calendar, booklet for the servers, images for digital advertising, pins with the campaign logo to identify NSP members, and customized chocolate box where each chocolate received the logo of one of the goals to be attained (Figure 1).

In February, after the material was ready to be used, the NSP began to promote the campaign throughout the institution, addressing the professionals in their work environments. At that time, the campaign proposition and the goals to be attained throughout the year were presented. Dynamic sessions addressed the topics related to patient safety goals. In every session, each professional who voluntarily presented his or her knowledge about each topic received a chocolate with the logo of the campaign.

To work on "Goal 1 – Effective Communication", in March we promoted the Institution's 1st Effective Communication Seminar. A study conducted in 2016 argues that effective health-oriented communication can reduce the incidence of AEs, thus providing greater safety in patient care. On the other hand, severe harm can be done to patients due to communication failures[9]. Thus, in order to clarify the main aspects related to the improvement of communication, five topics were addressed by guest speakers: Ceremonial and Ceremony; Medical Record – Liability; Communication at Antonio Dias Regional Hospital – Standardized Tools; Professional Ethics – How to deal with workplace confidentiality and Ombudsman. It is noteworthy that there was significant participation of managers, leaders and healthcare professionals in this event.

Goal 2 addressed the issue of falls, since these, in addition to physical and emotional harm, can affect the trust of patients and families in health institutions, as well as demand greater

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Figure 1. Advertising material for the "10 Goals – Patient Safety" campaign, 2018.

financial investment because of longer hospitalization time, more procedures, treatments and examinations to reduce possible harm to patients[10].

The promotion of "Goal 2 – Fall Prevention" involved a multidisciplinary review of the standard fall prevention routine and staff training, in addition to the dissemination of posters with guidance. A survey of the environmental risks of falling was also conducted on the premises of the institution by the occupational medicine service team. In the lectures there was massive attendance of nursing and physical therapy teams.

In 2008, the WHO launched the "Safe Surgery Saves Lives" global challenge, which was launched in Brazil by the Ministry of Health on May 13, 2010[2]. However, only in 2013 was this protocol implemented in our hospital. Despite some progress in the application of this protocol, there was still the need to strengthen some routines. Thus, the implementation of "Goal 3 – Safe Surgery" began with the formalization of such routine. With the help of the coordination of the surgical ward, a standard operating procedure (SOP) was designed with the description of the activities. Next, an awareness-raising hall was prepared inside the surgical ward, in a place of exclusive access for employees of the sector, in whose walls we posted banners with surgery-related AEs occurring in the institution, preserving the anonymity of patients and professionals involved, and data on the efficacy of the protocol application (Figure 2). The intention was that, after passing through this awareness-raising hall, the professionals would watch a short video about the main points of the "Safe surgery saves lives" protocol. This video was also exhibited in other sectors of the hospital and on social networks. The repercussion of the video was positive and the teams were asked to do more educational initiatives in this format.

At first, some members of the sector team were uncomfortable with the posters that showed surgical AEs occurred in the institution. The discomfort was relieved after clarification of the educational objectives of the campaign, which involved raising awareness among the surgical team to prevent these events. On the other hand, other professionals seemed to support this type of campaign, given the importance of the preventive measures listed in the safe surgery protocol.

The relevance of this goal rests on the fact that one in 150 hospitalized patients dies as a result of an incident and approximately two thirds of AEs are associated with surgical procedures[11].

In June we addressed "Goal 4 – Pressure Injury Prevention". Pressure injuries pose a major challenge for healthcare, since they have high financial and emotional costs for patients, families and healthcare organizations, and are considered a high incidence problem in hospitalized patients[2].

With a fun 4.5 m long board game containing 30 squares (Figure 3), we discussed the topic of pressure injuries. We prepared 50 cards with questions on prevention and treatment of pressure injuries, four lucky cards and four unlucky ones. The questions contained case studies, open-ended and multiple choice questions, with several levels of complexity. In the same training environment, we prepared an exhibit with the institution's available coverage for pressure injury treatment, and during the responses, the best coverage for treating those cases was presented. Participants were divided into teams. To make progress in the game, the participants had to roll the dice, pick a question card and answer it. If the answer was correct, the team could pick a lucky card that gave them the chance to make even more progress in the game. In case of wrong answers, the team had to pick an unlucky card and the punishment was to go back a few spaces. The team that finished the board first was considered the winner and received a personalized box of chocolate with the 10 campaign goals.

The randomness in the choice of questions by each team made each training session unique and expanded the content explored in every training. The discussions were very rich and constructive. We had professionals who participated in more than one training session because of the variation of the subjects covered in each meeting. The dynamism of the discussions and the strong engagement of all team members were responsible for the substantial approval of the training method by the participants. From then on, the campaign gained momentum through greater engagement by the leaders and greater compliance with the actions by the staff.

Hospital medical devices increasingly demand knowledge and attention from healthcare professionals in view of the diversity of models, manufacturers and different forms of use and complexity. A Brazilian study in an intensive care unit (ICU) and semi-intensive care unit has shown that the loss of nasogastric tube was the most recurrent AE[12].

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Figure 2. Awareness-Raising Hall in the surgical ward "10 Goals – Patient Safety" campaign, 2018.

"Goal 5 – Safe Use of Probes and Catheters" was developed with the support of realistic simulation. After reviewing enteral and bladder probing routines, we performed simulation training involving these techniques with approach to the critical points of each procedure. This type of tool is important when it comes to correcting failures in the performance of some techniques. In this case, there was the need to raise awareness among the nursing staff to adopt safer practices in the use of probes and catheters.

Considering that failed patient identification processes are among the most frequent causes of AEs related to incorrect drug, blood and blood product administration, release of incorrect diagnostic test results, failures in surgical procedures, and switched newborns[13], for "Goal 6 – Safe Identification", we revised the institution's Identification Policy and used a patient identification poster by Anvisa. But the main action was the "Identification Blitz" done in the care sectors. To do this, we used a patient identification audit form and, after verification, the workers from that area were gathered to receive the audit result. At that time the workers were given mockup ID wristbands with names of famous people, believing that the wristbands would bear their correct data. When they noticed the wrong information, the NSP team reinforced the importance of proper identification. The meeting ended with the distribution of chocolates in which the logos were intentionally exchanged and with pictures of the participants with the identification tags. In the 16 audits during blitzes, we found that 86% of the patients were identified with wristbands. In a playful and interactive manner, the healthcare team seemed interested in and concerned with the proper identification of the patients.

In September we promoted "Goal 7 – Drug Safety". The major types of AEs involving medications are known to result from omission, dose or time error and administration failure[14]. In addition to measures to monitor the stages of the medication process, healthcare organizations should invest in continuing education for healthcare professionals to strengthen the local safety culture and improve evidence regarding pharmacological issues and the risks they entail[2].

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Figure 3. Giant board for pressure injury prevention and treatment training, "10 Goals – Patient Safety" campaign, 2018.

In order to encourage critical thinking about drug safety, we organized a "simulated jury" educational initiative, in which participants played the role of a member of the hospital's board and had the mission of critically analyzing a *never event* related to wrong exchange of medication with death outcome and propose an action plan. This event was announced by a poster with a newspaper-like layout. It was called "People's Newspaper – Fake News" and featured a headline informing the death of a two-year-old child because of medication change. The halls of access to the venue and auditorium were decorated with signs containing the "nine rights of medication administration": right medicine, drug compatibility, patient orientation, right to refuse medication, right documentation, right dose, right route, right time and right patient[15].

The training began by introducing the roles participants should play; then they watched a video of an interview with a professional purportedly involved in the AE. In groups of up to eight people, after receiving a dossier with the AE chronological investigation, they discussed the factors that led to this occurrence and set the necessary strategies for event prevention. Each group had the chance to present the results of their discussion and the class should find a consensus about the issue. The initiative ended with photos of the participants holding the "11 rights of medication" signs and the handing out of a souvenir: pill-shaped mints in medicine packages personalized with an active ingredient. Inside the package, there was information about the importance of proper identification.

The reaction of the participants was exciting. The participants expressed their concerns about risks involving patient identification. Furthermore, the notes presented by the groups have shown high awareness about the risks related to medication administration.

Healthcare-associated infection (HAI) prevention routines were addressed with "Goal 8 – Clean and Safe Care". The WHO estimates that between 5% and 10% of hospital patients acquire one or more HAI, and the most common types are surgical site infections, ventilator-associated pneumonia, catheter-associated infections, and urinary tract infections associated with the use of probes[2]. Faced with this reality and in order to promote dynamic and realistic training, we divided the sessions into stations. At the auditorium front desk, participants were divided into groups of up to six people. In this room there were posters with the institution's HAI results.

The *1st station* featured the hand hygiene technique, five hand hygiene moments and some culture plates showing the contamination of surfaces like infusion pumps, bed rails,

computer keyboards and telephones. In pairs, the participants received a clipboard with cards with the images of the movements of the hand hygiene technique. The pair that correctly reassembled the sequence within the shortest time was rewarded with a personalized note pad. Then, the correct sequence was demonstrated on a flipchart with the images of the technique and each participant performed the technique with alcoholic preparation in the form of gel impregnated with fluorescent pigment. Afterward, the "Five moments of hand hygiene" were recalled and the culture plates presented.

The *2nd station* was prepared with a table board game with images representing hand hygiene and infection control routines. The caption prepared for this game presented the main conducts for the prevention of HAI and the most frequent healthcare-associated failures. The first pair to finish the board was the winner and received a pen with a hand-shaped topper.

Afterward, the participants were blindfolded and guided to the *3rd station*. On the way, without realizing it, they were impregnated with colored and fluorescent starch-based powders by the guide. This station was set up in a totally dark room where we simulated a patient bed with multiple devices and some care-related materials. We also simulated an administrative workstation with a computer and other devices. All surfaces were impregnated with colored powders representing the microbiological diversity present in that environment. Upon entering the room, an ultraviolet lamp was lit and the blindfolds were removed. The group then discussed what our conduct would be if we could see the contamination present in the environment with the naked eye (Figure 4).

This educational initiative required a bigger structure and a larger support team, especially from the Hospital Infection Control Service. However, it was one of the initiatives with greater adherence by the professionals. The immediate reaction of the participants was impact and concern about their practices to provide clean healthcare, including hand hygiene.

"Goal 9 – Patient Engagement" was focused specifically on patient actions throughout November. In addition to the members of the NSP, we involved professionals from Social Work, Occupational Therapy and Physical Therapy. The first initiative was based on conversation rounds with patients and caregivers to guide them about hospital routines and good patient safety practices.

We invited a group of clowns who are already doing social work at the hospital to perform fun shows related to the topics of patient safety protocols. It is worth mentioning that these volunteers were previously trained on the issues that should be addressed.

Another partnership was with physical therapy undergraduates of a local university to hold a Therapeutic Touch day. On this day, patients and caregivers who volunteered received a relaxing massage.

Goal 9 actions ended with a visit to the beds by the NSP to hand out leaflets to patients and caregivers with information about patient safety protocols and how they could contribute to safer care.

It was a very special month, when patients and caregivers received greater attention and gained awareness about their fundamental role in the provision of safe care. The literature says that patients should be at the core of the concerns of healthcare professionals and senior management, because when they actively participate in their own care and treatment, they stop acting as passive receivers of care and start contributing to safer care, strengthened by their role as citizens and consumers of health services[9].

The final goal of the campaign was hemovigilance, since blood transfusion is a widely used health therapy with undeniable benefits, but it also poses multiple risks that can be severe and lethal to the patients[16].

"Goal 10 – Safe and Rational Use of Blood" discussed all stages of blood within the hospital through training for nurses. Using a checklist, they audited the actual medical record of a patient who had received blood transfusion and had had a transfusion reaction. For the training, the following items were made available: medical records, copy of AE report and Transfusion Incident Report Form and checklist to orient the audit. At the end of the audit, nonconformities were discussed together with SOP routines. As a result, the nurses became more empowered and strengthened their knowledge about blood transfusion.

The campaign ended in December with the participation of 1,587 people. The workers who participated in more initiatives related to the 10 Goals received a letter of acknowledgement for their

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Figure 4. Space simulating environmental contamination, "10 Goals – Patient Safety" campaign, 2018.

cooperation, along with an invitation for a special cocktail to celebrate the campaign's success. During this event the results of the campaign were presented and the new work plan of the NSP was announced.

CONCLUSIONS

It was noticeable that the campaign gained momentum and adhesion through the conduction of the educational initiatives. This positive movement was also observed among the NSP members themselves, who showed greater interest and willingness to carry out the scheduled activities, as well as present new ideas for future interventions.

We observed that the use of active methodologies can encourage and lead healthcare professionals and users to discuss and learn more about the meaning and importance of the hospital safety culture.

Planning, building and executing the "10 Goals – Patient Safety" campaign required hard work from the NSP. The scarcity of funds to carry out the actions provided for in the campaign is also noteworthy. But with the commitment of all professionals and creativity in the application of active methodologies, it was possible to achieve rewarding results in strengthening the safety culture and greater visibility for the NSP.

REFERENCES

1. Kohn LT, Corrigan JM, Donaldson MS. To err is human: building a safer health system. Washington: National Academies Press; 2000[acesso 26 jan 2018]. Disponível em: https://www. ncbi.nlm.nih.gov/pubmed/25077248

2. Agência Nacional de Vigilância Sanitária – Anvisa. Uma reflexão teórica aplicada à prática. Brasília: Agência Nacional de Vigilância Sanitária; 2017.

3. Agência Nacional de Vigilância Sanitária – Anvisa. Resolução RDC N° 36, de 25 de julho de 2013. Institui ações para a segurança do paciente em serviços de saúde e dá outras providências. Diário Oficial União, 26 jul 2013.

4. Ministério da Saúde (BR). Portaria Nº 529, de 1 de abril de 2013. Institui o programa nacional de segurança do paciente (PNSP). Diário Oficial União, 2 abr 2013.

5. Ministério da Saúde (BR). Política nacional de educação permanente em saúde. Brasília: Ministério da Saúde; 2009.

6. Cyrino EG, Toralles-Pereira ML. Trabalhando com estratégias de ensino-aprendizado por descoberta na área da saúde: a problematização e a aprendizagem baseada em problemas. Cad Saude Publica. 2004;20(3):780-8. https://doi.org/10.1590/S0102-311X2004000300015

7. Macedo KDS, Acosta BS, Silva EB, Souza NS, Beck CLC, Silva KKD. Metodologias ativas no ensino em saúde. Esc Anna Nery. 2018;22(3). https://doi.org/10.1590/2177-9465-ean-2017-0435

8. Caleman G, Lima VV, Oliveria MS, Silva SF, Massaro A, Gomes R et al. Projeto aplicativo: termos de referência. São Paulo: Instituto Sírio Libanês de Ensino e Pesquisa; 2016.

9. Silva MF Anders JC, Rocha PK, Souza AIJ, Burciaga VB. Comunicação na passagem de plantão de enfermagem: segurança do paciente pediátrico. Texto Contexto Enferm. 2016;25(3):1-9. https://doi.org/10.1590/0104-07072016003600015

10. Agência Nacional de Vigilância Sanitária – Anvisa. Pacientes pela segurança do paciente em serviços de saúde: como posso contribuir para aumentar a segurança do paciente? Orientações aos pacientes, familiares e acompanhantes. Brasília: Agência Nacional de Vigilância Sanitária; 2017.

11. Ministério da Saúde (BR). Anexo 3: protocolo para cirurgia segura. Brasília: Ministério da Saúde; 2013[acesso 22 set 2019]. Disponível em: https://portalarquivos2.saude.gov.br/images/pdf/2014/julho/03/PROTOCOLO-CIRURGIA-SEGURA.pdf

12. Nascimento CCP, Toffoletto MC, Gonçalves LA, Freitas WG, Padilha KG. Indicadores de resultados da assistência: análise dos eventos adversos durante a internação hospitalar. Rev Latino-Am Enfermagem. 2008;16(4):746-51. https://doi.org/10.1590/S0104-11692008000400015

13. World Heatlh Organization – WHO. Patient identification: patient safety solution, volume 1, solution 2. Geneva: World Heatlh Organization; 2007.

14. Silva AEBC, Reis AMM, Miasso AI, Santos JO, Cassiani SHB. Eventos adversos a medicamentos de um hospital sentinela do Estado de Goiás, Brasil. Rev Latino-Am Enfermagem. 2011;19(2):378-86. https://doi.org/10.1590/S0104-11692011000200021

15. Peterlini MAS. Incompatibilidade no preparo e administração de terapia intravenosa em crianças: associação entre fármacos, soluções e materiais dos cateteres e acessórios [tese]. São Paulo: Universidade Federal de São Paulo; 2003.

16. Grandl JL, Grell M, Barros M, Chiba A, Barbosa D. Frequência dos incidentes transfusionais imediatos em receptores de hemocomponentes. Vigil Sanit Debate. 2017;5(2):83-8. https://doi.org/10.22239/2317-269x.00878

Conflict of Interest

Authors have no potential conflict of interest to declare, related to this study's political or financial peers and institutions.