



RISK NURSING DIAGNOSTICS FOR ADVERSE EVENTS IN BLADDER CATHETERIZATION INSTALLATION DELAY

DIAGNÓSTICOS DE ENFERMAGEM DE RISCO PARA EVENTOS ADVERSOS NA INSTALAÇÃO DO CATETERISMO VESICAL DE DEMORA

DIAGNÓSTICO DE ENFERMERÍA DE RIESGO PARA EVENTOS ADVERSOS EN LA INSTALACIÓN DE UN CATÉTER VESICAL PERMANENTE

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ABSTRACT

Objective: to build risk nursing diagnosis for bladder catheterization delay (BCD). **Method:** descriptive, exploratory, observational nonparticipating study with a quantitative approach. The sample was six nurses who carried out BCD in 56 patients and data collection was recorded in a form. The findings were statistically treatment and the shares were grouped at risk, of nursing diagnosis according to the International Classification for Nursing Practice (ICNP). **Results:** nursing Diagnoses built were risk for infection and risk of injury from actions such as not washing hands before and after the procedure; aseptic technique, intimate hygiene and realization of neglected cuff test. Some possible associated impacts were: contamination of the procedure and urethral and bladder injury. **Conclusion:** although it is a common technique within-hospital, it was possible to identify risk nursing diagnoses. The absence of technical and scientific consensus for the implementation of BCD is noteworthy. **Descriptors:** Patient Safety; Urinary Catheterization; Nursing Diagnosis.

RESUMO

Objetivo: construir diagnósticos de Enfermagem de risco durante cateterismo vesical de demora (CVD). **Método:** estudo descritivo-exploratório, observacional não participante, de abordagem quantitativa. A amostra foi de seis enfermeiros que realizaram CVD em 56 pacientes e a coleta de dados foi registrada em formulário. Os achados receberam tratamento estatístico e as ações foram agrupadas em Diagnósticos de Enfermagem de risco, segundo a Classificação Internacional para a Prática de Enfermagem (CIPE). **Resultados:** os Diagnósticos de Enfermagem construídos foram risco para infecção e risco para lesão, a partir de ações como a não higienização das mãos antes e após o procedimento; técnica asséptica, higiene íntima e realização do teste do balonete negligenciadas. Alguns possíveis impactos associados foram: contaminação do procedimento e lesão uretral e vesical. **Conclusão:** embora seja técnica comum no âmbito intra-hospitalar, foi possível identificar diagnósticos de Enfermagem de risco. Destaca-se a ausência de consenso técnico-científico para execução do CVD. **Descritores:** Segurança do Paciente; Cateterismo Urinário; Diagnóstico de Enfermagem.

RESUMEN

Objetivo: construir el diagnóstico de enfermería de riesgo de la cateterización de la vesical de demora (CVD). **Método:** estudio descriptivo y exploratorio, observacional no participante, de abordaje cuantitativo. La muestra fue de seis enfermeros que realizaran CVD en 56 pacientes y recogida de datos se registró en formulario. Los resultados recibieron tratamiento estadístico y las acciones fueron agrupadas en diagnóstico de enfermería de riesgo, según la Clasificación Internacional para la Práctica de Enfermería (CIPE). **Resultados:** los diagnósticos de enfermería construidos eran riesgo de infección y riesgo de lesión, de acciones como el lavado de manos antes y después del procedimiento; técnica aséptica, higiene personal y del teste del balón medicinal descuidado. Algunos impactos posibles asociados fueron: contaminación de la lesión uretral y vesical. **Conclusión:** aunque sea técnica común en el hospital, fue posible identificar diagnósticos de enfermería de riesgo. Se destaca la falta de consenso técnico científico para ejecución del CVD. **Descriptor:** Seguridad del Paciente; Cateterización Urinaria; Diagnóstico de Enfermería.

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INTRODUCTION

Patient safety is a term that is used to define actions that involve not only the reduction of risk to an acceptable minimum, but the use of care practices that avoid causing unnecessary harm to the patient, and, on that basis, reduce the Adverse Events index (AE) and strengthen the quality of intra hospital care.¹

Concern about the quality of care became more evident after the report provided by the *Institute of Medicine* in the United States of America (USA) in 1999, entitled *To err is human: building a safer health system*; opportunity in which alarming figures were shown with estimates of 44,000 to 98,000 Americans who died as a result of errors that occurred during the health care.²

In order to raise awareness of the importance of safe practices and alert on the technical and systemic aspects of this problem, WHO established in 2004, the World Alliance for Patient Safety providing recommendations to professionals and managers to prevent errors in the attention given to patients.³

From the perspective of Patient Safety, the gaps are related to the identification of adverse events and their causes, thus making it impossible to know, evaluate and question the consequences and solutions to the situations experienced by patients, families and professionals involved.⁴

In most of the events that cause damage to the patient there is the involvement of nursing staff resulting in errors in medication administration, falls, burns, pressure ulcers, hospital acquired infections and improper handling of drains, probes and catheters.⁵

The Bladder Catheterization Delay (BCD) is one of the more invasive procedures used in clinical practice, reaching the percentage of 10% among hospitalized patients, in which their achievement can cause discomfort, pain, bleeding and trauma in patients.^{6,7}

In everyday-hospital environments, the indication of BCD is excessive and the stay of use is greater than required, submits patients to the cumulative risk of developing urinary tract infection (UTI) up to 5% per day of use. It is estimated that 35-45% of all hospital acquired infections are urinary tract infections, and 80% are related to the use of BCD.⁶

The insertion of urinary catheters can lead to other complications such as urethral trauma, pain and false path, urethral stricture, renal and bladder urolithiasis,

urethritis, periurethritis, periurethral abscess, urethral fistula, prostatitis, epididymitis, penile necrosis and bladder cancer.⁷

What we see in the work process in health care is that professionals involved in care have a relationship of mutual trust. Thus, all professionals carry out their assistance activities believing that those involved have safe behaviors in patient care. At the end of this working process is the patient, who believes that all professionals involved are vigilant in their recovery,⁸ however, health professionals are prone to failures and omit relevant information to these situations as a form solidarity, shame or fear of punishment by managers.

The risk assessment can instrumentalize the identification of hazards and occurrences of probabilities, as well as serve as a tool for the analysis of consequences of accidents.⁹ Thus, during the implementation of the Nursing Process, unpublished practices can be developed that will influence change conducts.

Among the taxonomies used in the Nursing Process, the International Classification for Nursing Practices - ICNP consists of a unified nursing language system, practical terminology for their practice. The ICNP contains terms for the composition of diagnoses, interventions and outcomes that help to describe the practice of nursing.¹⁰ The nursing vocabularies described in ICNP can be used for data mapping and making the diagnoses of the risks to which patients are exposed.

For the construction of risk Nursing Diagnoses for adverse events on the installation of indwelling catheters, the nursing phenomena were listed defined as the decision made by the nurse about a phenomenon and can be: the patient's condition, the problems identified, their needs and potencialities¹⁰, understanding that risk is described as "potential with specific characteristics: the possibility of loss or problems, a problem that is expected to occur with a certain probability, negative potential state"^{10: 114}

Given the notoriety of the involvement of patients undergoing AE of all kinds in an in-hospital environment, more frequent, and the complexity of actions to this issue in the context of care and health care of patients, error victims emerge questioning on this subject: which nursing actions during the installation of BCD may pose risk to the patient to become the target of adverse events?

It is intended, however, to contribute to knowledge capable of changing the landscape of unsafe practices toward safer care and provide information to assist with decision-making and interventions in care practices, and strengthening the management. Thus, the objectives of the study are:

- ◆ Building risk nursing diagnoses for the adverse event during the installation of indwelling catheters;
- ◆ Identifying the actions of nursing that are not in compliance during installation of indwelling catheters;
- ◆ Associating the actions identified, the potential impacts described in the literature.

METHOD

Article drawn from the dissertation << Risk Nursing Diagnoses for Adverse Events related to the installation of indwelling catheters >> submitted to the Program of Graduate Studies in Nursing, Federal University of Maranhão / PPGENF / FUMA.

This is a study with a quantitative, descriptive and exploratory approach. The study was conducted at the University Hospital of the Federal University of Maranhão- UHFUMA, in São Luís - MA, referred to procedures of high complexity, funded through the Unified Health System - UHS, offering 573 beds.

The research was developed at the Surgical Center of said Hospital, composed of nine operating rooms. Data collection took place between the months of November 2013 to February 2014. The sample was constructed by six nurses, of these four professionals exercising care function in the sector and two were resident nurses who were in in-service training in that sector during the period of data collection. There was no refusal to participate in the study among the sector nurses.

The research subjects carried out the insertion of indwelling catheters in 56 patients. Inclusion criteria: patients aged above 18 years and who underwent BCD procedure on the premises of the Surgical Center, the perioperative period and is considered as a new case one patient returned to the operating room to undergo further surgery in a period of more than 48 hours of withdrawal of BCD. Not involved in the study, were patients with cognitive incompetence, under the influence of psychotropic medications at the time of approach and those who refused to participate in the study.

The relevant data for the installation of the vesicular catheter were recorded in a *checklist* containing the step by step of the BCD installation steps. This instrument was completed in the Surgical Center operating rooms during the perioperative period, through non-participant observation.

From the observations of the procedures carried out by nurses, the actions that were not in accordance with the technique of CVD were listed. These actions were related to the possible risks, considering the scientific evidence. Then the combinatorial terms Axes of Focus and Judgment were used, as well as terms of other complementary axes contained in ICNP® and we created a spreadsheet in which the shares were stored, its relationship to risk and its Risk Nursing diagnosis .

The study met the requirements of Resolution No. 466/12 of the National Health Council - NHC getting approval from the ethics committee of the Federal University of Maranhão through the Opinion No. 432751, dated October 22, 2013. For the participation of the subjects the presentation of the research proposal and other relevant clarifications were made and by accepting them, the subsequent reading and their consent in the Terms of Consent. The findings were compiled in a database in Excel, with subsequent realization of descriptive statistics by program R.¹¹

RESULTS AND DISCUSSION

We observe in table 1 that the step of cleaning the hands by nurses showed significant changes of professionals who do not follow the stages of the cleaning of hands technique with soap and water, ranging from 31 (55.4%) to 50 (89.3%) procedures, in a way that they did not perform in its entirety any phase of the procedure. We also point out that in 32 (57.1%) of the procedures, the nurses did not carry out the cleaning before contact with the patient. The variable hand hygiene was also described in the study, which analyzed 1316 hygiene opportunities for hands, in 951 (72.3%) this practice was not carried out.¹² The authors stressed that even in the nursing category, including academics, nurses, aides / nursing technicians and teachers, in a total of 247 (33.0%) situations that recommended hand hygiene in 196 (79.3%), this technique was carried out in an incorrect way.¹²

Table 1. Distribution of the actions of nurses during insertion of the BCD in the sanitization of the hands step prior to the procedure. São Luís/MA. 2013-2014.

Phases	Yes	%	No	%	Total	%
Duration time of 40 to 60 seconds	6	10,7	50	89,3	56	100,0
Open the faucet and wet your hands, avoiding lean against the sink.	25	44,6	31	55,4	56	100,0
Apply on the palm a sufficient amount of liquid hand soap to cover all surfaces of the hands.	24	42,9	32	57,1	56	100,0
Lather the palms of the hands, rubbing them together.	24	42,9	32	57,1	56	100,0
Rub the right palm against the back of the left hand interlacing fingers and vice versa.	22	39,3	34	60,7	56	100,0
Interlace your fingers and rub between the fingers.	17	30,4	39	69,6	56	100,0
Rub the back of the fingers of one hand with the palm of the opposite hand, holding the fingers, moving back-and-forth and vice versa.	13	23,2	43	76,8	56	100,0
Rub the right thumb, with the aid of the left palm, using a circular motion and vice versa.	8	14,3	48	85,7	56	100,0
Rub the fingertips and nails of the left hand against the palm of the right hand, closed like a shell, making circular motion and vice versa.	7	12,5	49	87,5	56	100,0
Rub the left wrist with the help of the right palm, using circular motion and vice versa.	13	23,2	43	76,8	56	100,0
Rinse hands, removing the soap residue.	21	37,5	35	62,5	56	100,0
Avoid direct contact of soapy hands with tap.	24	42,9	32	57,1	56	100,0
Dry hands with paper towels, starting with the hands and following with the wrists. In taps with manual closing, use paper towels.	25	44,6	31	55,4	56	100,0
Sanitize their hands before contact with the patient	24	42,9	32	57,1	56	100,0

Table 2 shows that the findings concerning the orientation and positioning of the patient, we found that 53 (95%) of procedures, nurses and non-oriented or positioned patients appropriately. Guidance is among the duties of nurse, as provided in the Nursing Code of Ethics ¹³, Chapter I, Article 17, which talks about the responsibility of nursing professionals: ". To provide adequate information to the person, family and community to respect the rights, risks, benefits and complications of nursing care ". ^{13:40} In regards to the position of the patient, it is worth noting that in male patients, the recommended position is supine and in female patients ginecological decubitus is indicated. ¹⁴

In relation to respecting the privacy of patients, we emphasize that, in 48 (86%) of the procedures, the nurses did not consider the privacy of the patient, and 03 (5.3%) procedures, nursing technicians took the initiative to respect patient privacy. Understanding that privacy is embedded in the process of humanizing care, dissatisfaction with the care provided in the operating room environment was reported by patients claiming feelings of helplessness and invasion of privacy. The authors attributed that nurses do not respect privacy because they are aggregating administrative functions at the expense of direct patient care, acting as a mere instrument of the surgical team. ¹⁵

In table 2, in regards to the use of Personal Protective Equipment (PPE), there was a predominance of the use of recommended PPE except in protection goggles, whose use has not been identified in any procedure.

The use of PPE is intended to protect patients and workers. These are susceptible to risks when performing procedures pertinent to assistance must comply with the recommendation to obligatory use. ¹⁶ PPE included in the nursing daily work are: goggles, gloves, coat or apron and cap, however, the use of facial masks is added as part of such equipments because of the biological risk. ¹⁷

Table 2 presents data on the step of handling the material and instruments, at the stage that deals with the grouping of the necessary material, there was a slight predominance of nurses gathered the necessary materials before the procedure, 26 (46.4%), than those who did not group with 24 (42.9%). It is noteworthy that in 6 (10.7%) cases included in the "Not Applicable (NA)" refer to the phases that have been carried out by nursing techniques that aided the procedure.

In a study described about the knowledge of nurses, all nurses assessed for knowledge about BCD technique mentioned the use of specific packages containing materials relevant to the procedure previously gathered for carrying it out. ¹⁸ However, the authors identified in step execution which, of 8 (100%) who underwent the procedures, 7 (87.5%) used it corrected. ¹⁸

Table 2 shows the material opening stage that in 53 (95%) of procedures the aseptic technique was used. Most were also identified with regard to the use of sterile materials, such as gauze, syringes and needles. Regarding the handling of the material by

nurses, we found that in 50 (89%) procedures, materials were handled in the aseptic technique with contamination of materials during the opening of the material in 1 (2.0%) of the procedures, the gauze 2 (4.0%) and needle 3 (5%). The use of sterile materials is among the recommendations of the relevant literature to the procedure, contributing to the prevention of infection related health care.¹⁹⁻²⁰

When it comes to data manipulation of instruments in 55 (98%) of the procedures, the

Table 2. Distribution of the actions of nurses during insertion of BCD in environmental preparation stage and pre-BCD professionals. São Luís/MA. 2013-2014.

Phases	Yes	%	No	%	NA	%	Total	%
Orientation	3	5,4	53	94,6	0	0	56	100,0
Positioning	3	5,4	53	94,6	0	0	56	100,0
Privacy	5	8,9	48	85,7	3	5,4	56	100,0
Adequate Luminosity	53	94,6	3	5,4	0	0	56	100,0
Cap	56	100,0	0	0	0	0	56	100,0
Face mask	56	100,0	0	0	0	0	56	100,0
Gloves	56	100,0	0	0	0	0	56	100,0
Protection Goggles	0	0	56	100,0	0	0	56	100,0
Groups the materials	26	46,4	24	42,9	6	10,7	56	100,0
Opens the material with aseptic technique	53	94,6	1	1,8	2	3,6	56	100,0
Uses Sterile gauze	54	96,4	2	3,6	0	0	56	100,0
Uses Sterile syringe	51	91,0	0	0	5	9,0	56	100,0
Uses Sterile needle	47	84,0	3	5,3	6	10,7	56	100,0
Manipulates the material with aseptic technique	50	89,3	0	0	6	10,7	56	100,0
Holds the tweezers adequately	55	98,2	1	1,8	56	100,0	56	100,0
Folding of gauzes using tweezers	52	92,9	4	7,1	56	100,0	56	100,0
Performs disinfection of the superior part of the IV with 70% alcohol	0	0	56	100	56	100,0	56	100,0
Perforates the bottle of serum with a 40x12 mm needle	0	0	56	100	56	100,0	56	100,0
Perforates the IV with a hole	0	0	56	100	56	100,0	56	100,0
Perforates the IV with many holes	0	0	56	100	56	100,0	56	100,0
Holds the tweezers adequately	55	98,2	1	1,8	56	100,0	56	100,0
Folding of gauzes using tweezers	52	92,9	4	7,1	56	100,0	56	100,0

Regarding findings related to antisepsis procedure, regarding the use of sterile gloves during this procedure, we identified that they were used in all BCD performed, as well as being put on using aseptic technique. Corroborating the study data in research on the knowledge of professionals found that nurses identified the use of sterile gloves in all procedures, however, when asked about the BCD technique, only 8 (27.6%) of participants specified the use of sterile gloves for this procedure.¹⁸

Regarding the use of aseptic solution in antisepsis stage of genital and perineal region, nurses made use of chlorhexidine degermant in all procedures as industry routine. The BCD technique is the use of aseptic techniques and sterile equipment, reducing the risk of infection in the use of urinary catheters. However, it is noteworthy that there was no consensus regarding the use of antiseptic solution, sterile water or saline solution.¹⁹

In regards to antisepsis in female patients, it can be seen in table 3 that the antisepsis of

nurses held the clamp properly, and 52 (93%), nurses used the folding gauze using the forceps. It is worth noting that the disinfection actions with ethyl alcohol and serum bottle drilling were disregarded in all procedures. This finding is due to the fact that in institutional routine the intimate hygiene step is not performed being replaced by antisepsis of the skin and the periurethral region, using only the degerming chlorhexidine, also found described in research on the nurses knowledge.¹⁸

the vulva, labia majora, labia minora and vaginal vestibule were carried out in the correct sequence in 27 (100%) procedures, following the precept of least to the most contaminated, as recommended in the literature.^{19,21} However, we observed that the exchange of gases precepting every phase of antisepsis was not obeyed in 14 (51.9%) of procedures, leading to the breakdown of aseptic technique, as opposed to the described in the literature.^{19 21}

The table 3 presents data on antisepsis in male patients of 29 (100%) observed procedures, we emphasize that only the antisepsis of the penis body was performed in all procedures. However, in 01 (3%) procedure, the phases of antisepsis of the prepuce and the glans, the technique was not followed by nurses as well as cleaning urethral meatus was not performed for 04 (14%) procedures. In relation to the exchange of gases at each stage it was also not performed at all stages in the quantity of 12 (41%) of BCD focusing patient's contamination by

breakdown of aseptic technique in the procedure. These findings have also been identified in another research, which detected contamination during the antisepsis procedures for implementing them.¹⁸

We also emphasize that during the course of the antisepsis stage in men, the nurses did not fulfill the precept of the least contaminated to the most contaminated, starting with the antisepsis of the penis body, then the prepuce and glans, performing the antisepsis of the urethral meatus last.^{19,21}

Regarding insertion BCD technique it can be seen in table 3 that, in most procedures, nurses obey the following recommendations in the literature ranging from 8 (14.3%) to 49 (87.5%), however, it is highlighted that we found that at all stages there were some percentage procedures performed by the nurse who ranged from 48 (85.7%) to 7 (12.5%).

Continuing the analysis of table 3 shows that there was a high percentage of procedures performed by nurses not in the opening stages of the instrument tray in a quantity of 48 (85.7%); use of lubricant with a previously broken seal, represented by 25 (44.6%), and the suction of the ampoule containing distilled water in 30 (53.6%) of the procedures were performed by the practitioner who assisted in the procedure.

It should be noted that the realization of the cuff test was also not performed during the course of BCD insertion in the quantity of 24 (44.6%) procedures. Thus, we evidenced the lack of standardization of the catheter during the insertion step. Another survey rose to 88.9% of the nurses were able to describe the steps relevant to bladder catheterization, however, the authors found that there was no obedience to the sequence of said procedure.²¹

Table 3. Distribution of the actions of nurses during insertion of the BCD antisepsis step and insertion of indwelling catheters. São Luís/MA. 2013- 2014.

Phases	Yes	%	No	%	Total	%
Sterile Gloves	56	100	0	0	56	100
Putting on gloves with aseptic technique	56	100	0	0	56	100
Aseptic solution	54	96,4	2	3,6	56	100
Clorexidine degermant	56	100	0	0	56	100
Antisepsis of genital and perineal female regions						
Performs antisepsis of the vulva	27	100	0	0	27	00,0
Performs antisepsis of the labia majora	27	100	0	0	27	00,0
Performs antisepsis of the vaginal vestibule	27	100	0	0	27	00,0
Performs antisepsis of the urethral meatus with the aid of tweezers and sterile gauzes	27	100	0	0	27	00,0
Change the gauze in each step	13	48,1	14	51,9	27	00,0
Antisepsis of genital and perineal male regions						
Performs antisepsis of the urethral meatus with the aid of tweezers and sterile gauzes	25	86,2	4	13,8	29	00,0
Performs antisepsis of the foreskin	28	97	1	3	29	00,0
Performs antisepsis of the gland	28	97	1	3	29	00,0
Performs antisepsis of the penis body	29	100	0	0	29	00,0
Change the gauze in each step	17	59	12	41	29	00,0
Performs antisepsis of the urethral meatus with the aid of tweezers and sterile gauzes	25	86,2	4	13,8	29	00,0
Insertion of the indwelling catheters						
Open the instrument tray for bladder catheterization on the field	8	14,3	48	85,7	56	00,0
Adds sterile Foley catheter caliber compatible with the patient biotype	47	84,0	9	16,0	56	00,0
Adds sterile syringe with aseptic technique	45	80,4	11	19,6	56	00,0
Adds sterile needle with aseptic technique	43	76,8	13	23,2	56	00,0
Adds sterile gauze with aseptic technique	46	82,1	10	17,9	56	00,0
Adds the collector with sterile closed system with aseptic technique	49	87,5	7	12,5	56	00,0
Connects the probe in the urine collector	49	87,5	7	12,5	56	00,0
Breaks the seal on the lubricant gel	31	55,4	25	44,6	56	00,0
Aspirates ampoule containing distilled water with the aid of another person	26	46,4	30	53,6	56	00,0
Tests the cuff using a 10ml syringe	31	55,4	25	44,6	56	00,0

In relation to BCD insertion step, in male patients, table 4 depicts the sequence of these procedures that were performed in accordance with that described in literature.¹⁹⁻²⁰ In relation to the identification on the collector, there was no identification in 19 (65.5%) of procedures. However, we found that the attachment of the bladder catheter was not performed in 29 (100.0%) of the procedures, which contradicts the study

records, in which 03 (60%) of BCD were obeyed fixing the catheter .¹⁸ The catheter fixation is indicated as a preventive measure against the traction of the catheter, avoiding in turn, urologic complications resulting from improper handling of this equipment.¹⁹⁻²⁰

Regarding the insertion of urinary catheters in female patients, also observed line between the actions of nurses and what is described in the literature.^{19: 21} However, we

point out in table 4 that in the removal of sterile gloves phase, 03 (11.1%) of procedures nurses did not remove the gloves after inserting the catheter, continuing with other procedures before their removal, contaminating equipment and the patient's unit. In regards to the identification in the

collector, they were identified in 14 (51.9%) of the procedures. There was no clamping of the catheter in 25 (92.6%) of the procedures. Thus, we found that there was no compliance in these phases of the technique than recommended in literature.^{18-9,22}

Table 4. Distribution of shares of nurses during the insertion stage of Bladder Catheter Delay in men. São Luís/MA, 2013-2014.

Phases	Yes	%	No	%	Total	%
Males						
Place anesthetic lubricant in the syringe with the aid of a helper	29	100,0	0	0	29	100,0
Position the penis perpendicular to body	29	100,0	0	0	29	100,0
Introduces the tip of the syringe into the urinary meatus injecting the anesthetic gel	29	100,0	0	0	29	100,0
Introduces the probe gently into the urethral meatus to the bifurcation and waits for the drainage of urine.	29	100,0	0	0	29	100,0
Inflating the cuff of the tube with a syringe of 10ml of distilled water and gently pulls it	29	100,0	0	0	29	100,0
Fixes the probe in the suprapubic region with tape without traction.	0	0	29	100,0	29	100,0
Removes Sterile gloves	28	96,6	01	3,4	29	100,0
Puts the data in the urine collector	10	34,5	19	65,5	29	100,0
It holds the collector below the patient's decubitus level	27	93,1	02	6,9	29	100,0
Females						
Lubricates the urethral probe with anesthetic using a sterile gauze support	25	92,6	2	7,4	27	100,0
Separates the labia minora with the thumb and forefinger	27	100,0	0	0	27	100,0
Exposes the vestibule of the vagina	27	100,0	0	0	27	100,0
Introduces the probe gently into the urethral meatus and waits for drainage of urine, introduces 03-04 cm more	27	100,0	0	0	27	100,0
Fills the cuff of the tube with a syringe with 10ml of distilled water and gently pulls it	27	100,0	0	0	27	100,0
Fixed the probe to the thigh with tape without traction	2	7,4	25	92,6	27	100,0
Removes the sterile gloves	24	88,9	3	11,1	27	100,0
Puts the data in the urine collector	13	48,1	14	51,9	27	100,0
It holds the collector below the patient's decubitus level	25	92,6	2	7,4	27	100,0

With regard to hand hygiene after BCD in table 5, shown in the column that displays the data on hygiene with soap and water, in which 29 (52%) of procedures, nurses did not consider performing this. With regard to hand hygiene with alcoholic preparations, we identified that no nurse performed this procedure. The adoption of simple measures and low cost, such as hand washing with soap and water or 70% alcohol (gel or glycerin), help to settle around 30% of cases of HAI²³. These measures are inversely proportional to the incidence HAI that can culminate in high rates of mortality among patients, prolonged hospital stays and burdening the health system.²⁴

In table 5, which deals with the disposal stage of the materials, we found that the materials used for BCD, as well as gloves used being disposed of correctly in 55 (98%) of the procedures, however, we observed that there

was no disposal of sharps objects in 02 (4.0%) of procedures. We also emphasize that in table 5, under "Not applicable" 05 (9%) of the procedures were performed by professionals who assisted the procedure. In research conducted with 355 nursing students who were identified, 06 (10.9%) of the accidents reported during disposal occurred such as splashing of urine and blood on the skin and mucous membranes, and higher incidence of accidents with blood in percutaneous form.²⁵

Still on the analysis of table 5, in relation to the unit organization of the patient, 75% of the nurses collected the material and 55% organized the patient's unit. The procedures grouped as "not applicable" were carried out by industry nursing technicians. Note that the steps for gathering the materials and organization of the unit are part of the BCD technique, settling the risks of cross infection

and biological accidents among professionals who carry out their activities in the sector.¹⁴

Regarding the registration procedure step, we identified in table 5 that there was a quantity of 23 (41.0%) records, which were attributed to only one nurse who wrote notes on the collector bag, with information regarding the date of insertion, patient initials and signature, taken from the recommended literature, however, with regard to the entry of Nursing in the chart and complications registration during BCD, none of the nurses registered.

In a research involving knowledge and practice of nurses in performing the BCD it

was noted that 5 (55.5%) of nurses said that nursing annotation should be performed at the end of the procedure, of these, 33.3% agreed that, in addition to medical records, the note should contain information pertinent to the catheter insertion date and professional identification data responsible for the procedure.²¹ It is noteworthy that, although it is set to stage the NCS, nursing annotation is inserted in PE as a tool for registration of care, contributing to the evaluation of the assistance as well as legal support for professionals.²⁶

Table 5. Distribution of shares of nurses during installation of BCD in post-procedure step. São Luís/MA, 2013-2014.

Post-procedure	Yes	%	No	%	No	%	Total	%
Disparaging materials	55	98,2	0	0	1	1,8	56	100,0
Disparaging sharp objects	49	87,5	2	3,6	5	8,9	56	100,0
Disparaging gloves	55	98,2	0	0	1	1,8	56	100,0
Grouping of materials	42	75,0	12	21,4	2	3,6	56	100,0
Unit Organization	31	55,4	22	39,2	3	5,4	56	100,0
Handwashing with soap and water	27	48,2	29	51,8	0	0	56	100,0
Handwashing with alcoholic preparations	0	0	56	100,0	0	0	56	100,0
Identifying patient data on the collector bag	23	41,0	33	59,0	0	0	56	100,0
Notes on records	0	0	56	100,0	0	0	56	100,0
Registers incoherence	0	0	56	100,0	0	0	56	100,0

The identification process began with the identification of actions that showed non-compliance with BCD insertion technique, total of 32 stages, namely: not washing hands before and after patient contact; non obedience to the length of time required for hand hygiene; and the non-implementation phases: opening the tap to wet hands; a sufficient amount of liquid soap to cover all surfaces of the hands is applied in the palm, in addition to the phases best friction and not performing the rinsing stages hands; no guidance about the procedure; incorrect position of the patient during the procedure; privacy of neglected patient; no use of goggles during BCD; non obedience to aseptic technique in the handling of sterile materials, aseptic solution; intimate hygiene; antisepsis of the genital and perineal was not carried out; non-performance cuff test before the procedure; probe connection to the collector only after insertion; not fixing the bladder catheter as recommended; disposal of piercing-cutting not carried out and records of unfulfilled procedures.

After the identification of the shares, the construction of risk nursing diagnoses related to installation of BCD that was carried out was based on INPC's recommendations indicate that the composition of the nursing diagnosis should include a term from the Focus Axis and a term of Judgment Axis, essentially, and the inclusion of additional terms of these axes or

other axes.²⁸ So relating the impact of these actions and built 10 DE, from the term "risk" Judgment axis.

The construction of the risk of ED was performed from the frequency of non-compliant actions with the technique of BCD. Risk DE identified were: risk of infection 24 (75%); compromised Aseptic technique 8 (25%); risk of injury 3 (9.4%); 2 risk for contamination (6.2%); risk of cross-infection 15 (46.9%); risk for anxiety 2 (6,2%); 1 risk of bleeding (3.1%); risk for dysuria 1 (3.1%); risk for acute pain 1 (3.1%) and continuity of care committed 1 (3.1%).

We point out to the fact that the risk of infection is part listed more often, however, ED also represents the situation of concern for safety in care, since most of them converge to possible complications also related to the risk of infection.²⁷

Regarding the diagnosis of risk of infection, we particularize urinary infection that is related to the appearance of bacteriuria associated with fever and bacteremia, which may progress to sepsis and contribute to increased mortality rates up to 3 times.⁷ Regarding nursing diagnoses risk for: injury, bleeding, acute pain, dysuria and highlight contamination that may be associated with the use of BCD, in accordance with literature, related trauma, hemorrhage and inflammation.⁷ Such complications can lead to urethral stricture, which, in turn, are in late

complication readmitting the patient to appropriate care for ICU recurrence and urinary retention, among others.^{7,27}

CONCLUSION

Among the risk nursing diagnoses for Adverse Events related to identified BCD insertions, it includes: risk for infection; compromised aseptic technique; risk for damage and risk of cross-infection.

Among the non-compliant nursing actions with the identified BCD technique: not washing hands before and after the procedure; Aseptic technique is not performed during the handling of materials; intimate hygiene for men is not met in the correct sequence; precept of exchange of gases at each stage not obeyed; no realization of the cuff test before the procedure; probe connection to the collector after insertion; urinary catheters not fixed as recommended; sterile gloves not removed after the procedure; Registration procedure not carried out.

Among the possible impacts to adverse events related to actions include: contamination of the procedure; breach of aseptic technique; urethral and bladder injury; traction of the catheter and contamination of equipment and the unit of the patient.

The relevant findings during bladder catheter delay insertion technique allows us to infer that: despite being a widely used within-hospital technique, it is not uncommon to identify actions that are not in accordance with the BCD technique reflecting the lack of standardization procedures among practitioners that carry them out. Thus, patients become targets of errors due to these unsafe practices.

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