

# Experiences of Nursing Students in High Technological Density Services

ORIGINAL

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## Abstract

**Objective:** To share the nursing students' experiences in high technological density services in the Intensive Care Unit and Emergency Unit, highlighting the importance of practical activities supervised in the learning process.

**Methods and results:** This article is a descriptive study of experience report by Nursing students at the Federal University of Rio Grande do Norte, during the practical activities supervised in Intensive Care and Emergency Units, held on May 02 to May 19, 2016. This experience gave the students a sizing on nursing care in their respective sectors. Thus, the results were listed in three categories: 1) Work process, 2) Procedures performed and 3) Acquired skills and abilities.

**Conclusion:** The practical activities experienced by the students provided a sizing on the knowledge on the care practice to patients assisted in the high-density technology sectors, having critical thinking and the applicability of clinical reasoning and diagnosis.

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## Keywords

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## Introduction

Currently, health policy in Brazil and the contemporary transformations provided a change in the work process profile to the nurse. Thus,

these transformations required adaptations of scientific knowledge, technical skills, and technological tools [1]. The nurse is characterized as a transforming agent of care in different ways [2]. In sectors requiring a high technological density, the nursing actions and interventions should be integrated and continuous together with other health sectors, providing a skilled, humane and scientific health care to the population, such as in the Emergency Care Units (ECU) or Intensive Care Units (ICU) [3].

In the high complexity care, nurses play a key role providing support both as patient care, in education and coordination of nursing staff [1]. This assistance has a set of actions involving high costs and technological density, providing access to an effective, optimized and scientific health for the population [4]. Thus, the technological tools involved in health care both in the Emergency Care Unit (ECU) or Intensive Care Unit (ICU), require actions that improve and integrate care among health professionals [3, 4].

In this context, Decree N° 1600 of July 7, 2011, reformulates the National Policy for Emergencies (PNAU) and establishes the Care Network for Emergency in the Unified Health System (SUS), aiming at coordination and integration of all health equipment, expanding and qualifying the humanized and full access to patients of emergency situations in the health services, in a fast and timely manner. With this, the ECU are in the system improvement strategies, providing resolute and qualified care to patients in acute medical conditions, providing primary care in cases of surgery or trauma and when necessary, forwarded to specialized hospital services [5]. Among these services with greater complexity, there is the ICU, defined by the Collegiate Board Resolution (RDC) N° 07 of 24 February 2010, as critical areas for the admission of critically ill patients who require specialized and continuously professional attention, specific materials and technologies necessary for their diagnosis, monitoring and therapy [6].

It is noteworthy that lately, there is an overcrowding of these complex and specialized services due

to a number of factors such as: low resoluteness of primary health care, the deficit in the reference and against reference, the considerable increase in traumatic accidents and emergency and public demand for places with greater possibility of an agile, competent and decisive care [7, 8].

Thus, in these decisive scenarios, a large part of nursing professionals is inserted, requiring general skills such as critical thinking, proactivity to solve the possible complications, scientific improvement, technological management, scientific basis, and also demands relating to managing the unit [9]. Those skills should be inherent in the professional nurse and potentiated by the practical situations. This fact is recurrent in the nursing practices areas in the academic activities [10].

Therefore, the teaching-learning process of the Nursing Graduation courses in Brazil has felt the need to change, since the student must take the role of the transformer through a critical and reflective thinking, not only absorbing theoretical knowledge [11]. Thus, the nurse can develop the necessary skills: health care, decision-making, communication, leadership, administration and management and continuing education [12].

Also, healthcare companies are always looking for professionals with these qualifications to perform scientific and efficient actions. From this perspective, an approach to skills in all areas related to academic education is essential [13], with early stimuli during practice and supervised training activities, preparing graduates to enter the world of work.

Thus, the Nursing Course of the Federal University of Rio Grande do Norte (UFRN) provides practical activities from the fourth period, allowing students a contact with the numerous professional activities. However, in the sixth period during High Complexity course subject, students experience and assist patients in critical conditions. Therefore, the subjects' hours include practical activities supervised in the ICU, in the Emergency Room (ER) or the Red

Room of the ECU, complementing and helping to understand the theory acquired in the classroom.

In this context, this report proposes to share the Nursing students experiences in high technological density services in the Intensive Care Unit (ICU) and Emergency Care Unit (ECU), highlighting the importance of practical activities supervised in the learning process.

## Methods

This article is a descriptive study of experience report from nursing students in the sixth period of the mandatory curriculum subject called High Complexity at the Federal University of Rio Grande do Norte, Natal Campus, Rio Grande do Norte (RN), during supervised practice activities. These activities occurred in Unit Intensive of the Emergency Unit (ICU EU) of the Hospital Complex Monsenhor Walfredo Gurgel/Emergency Unit Clóvis Sarinho and Emergency Unit Esperança (EU Esperança), located in Natal/RN, in the period from May 2 to 19, 2016.

The information for the development of this report came from the experiences of nursing students, from the theoretical reference acquired in the classroom and from the scientific deepening through research in the Virtual Health Library (VHL) using the Latin American databases and Caribbean Health Sciences (LILACS), Scientific Electronic Library Online (SciELO) and Medical Literature Analysis and Retrieval System Online (MEDLINE).

For better understanding and organization of reasoning, the results were listed in three categories: 1) Work process, 2) Procedures performed and 3) Acquired skills and abilities. Aiming to facilitate the visualization, the presentation of the activities was a table, and the other categories were exposed in a discursive way.

In the context of both the ICU EU as ECU Esperança, the Systematization of Nursing Assistance (SAE) was used through the Nursing Process (NP), enabling students to guide the actions and the prac-

tice of clinical reasoning and critical thinking to solve problems.

## Results

After completion of the High Complexity practices, the results were listed as the work process, procedures performed by students and developed skills and abilities.

### Work process

The work process in the ECU Esperança has the absence of dialogue between a multidisciplinary team composed of a nurse, physical therapist, doctor, nutritionist and nursing technician, and with specific exceptions, this dialogue occurs when strictly necessary. Thus, the information about the patient was limited, mostly to consulting the records, containing data on hospitalization, complications, procedures, medications and diet, handwritten and, in some cases, unreadable.

Furthermore, there was little interaction among sector professionals and students, except for the physical therapist, who kept a cozy and conducive environment for the activities of the curricular component. It was noticed that the care provided by nurses to patients was through technicalities practice, forgetting social issues. Another issue observed was the systematic disorganization of the unit. It was also observed that the nursing professionals sector had no autonomy, being routinely subordinated to the professional medical decisions.

As for materials and supplies, there was rationing on its use and distribution, such as the unavailability of the type N95 masks, harming the students and professionals' procedures.

It was observed in the ICU EU that professionals act in an integrated way, that is, with a multidisciplinary care, in which the priority needs and interventions decisions are made together. In the context of the therapeutic plan, information sharing was observed on the cases, joint decision-making

**Table 1.** Activities of the ECU Esperança and ICU EU of the Hospital Monsenhor Walfredo Gurgel/Emergency Unit Clóvis Sarinho. Natal, Rio Grande do Norte, Brazil.

Unit	Procedure Performed
ECU	Application of the Systematization of Nursing Assistance (SAE).
	ICU EU
	Pressure sores dressings.
	Endotracheal tube fixation.
	Arterial blood gas analysis.
	Continuous infusion pump handling.
	Multiparameter monitor handling.
	Continuous cardiac monitoring.
	Installation and mechanical ventilator handling.
	Preparation and administration of medications.
	Venipuncture with a flexible peripheral intravenous catheter.
	Orogastric probing.
	Checking of blood glucose.
	Checking of the emergency car.
ICU EU	Application of the Systematization of Nursing Assistance (SAE) through the NP (Process Nursing).
	Assistance during hemodialysis.
	Hydric balance.
	Bladder catheterization delay.
	Blood cultures.
	Collection for urine culture through the indwelling urinary catheter.
	Airways suction of the patient with an endotracheal tube.
	Collection for lower airway secretion culture.
	Checking of blood glucose.
	Correction of hyperglycemia.
	Electrocardiogram.
	Evolution of time.
	Arterial blood gas analysis.
	Continuous infusion pump handling.
	Multiparameter monitor handling.
	Continuous cardiac monitoring.
	Implementation and mechanical ventilator handling.
Nebulization through the mechanical ventilator.	
Sector organization and the administration of oral medications.	
Nasogastric probing.	

Source: The author

about the adopted treatments or exams needed, and also a multi-registration in the records. The atmosphere is warm and pleasant to the development of the proposed activities to students, where there is not a professional hierarchy, and all of them have a burden of responsibility in caring for the patient, according to their skills, although the lack of inputs at this stage field was also present.

### Procedures performed

Table 1 shows the procedures performed in the two practice areas, featuring a complex and challenging scenario for the nursing students.

### Acquired skills and abilities

In addition to the technical skills acquired in the procedures listed above, it was possible to observe the evolution of hospitalized patients in both practice sites and thus sensitize the critical thinking of nursing phenomena and implement the clinical reasoning, diagnosis, and treatment. It was noticed, the importance of maintaining aseptic or sterile techniques to prevent common infections and complications in hospital settings, especially in a patient in critical health situation.

### Discussion

The experience in the practical field of the Emergency Care Unit allowed sensitizing against the critical and clinical thinking of students through pathophysiology of a detailed study of these diseases, as well as the choice of the care plan based on priority nursing diagnoses which better fulfill the needs of each patient. They are presented in a general critical condition, hospitalized in the Red Room, most of them unconscious.

In ECU Esperança, overcrowding is a common factor in the Brazilian health system. This is compounded by the absence of a Basic Health Unit (BHU) in the neighborhood, resulting in the transfer of patients to ECUs, being against the principles of

Emergency Care National Policy [5]. Also, most of the needs of these patients, for example, the renewal of prescriptions for the chronically ill patient do not require specialized care as offered by the ECU. Therefore, most of the service are affected by the lack of materials and excess patients. Among these patients, there are the critically ill who should be referred to the ICU through the regulation, but they are also crowded. [14]

Concerning the skills developed from the procedures performed, it could be inferred that the fields provided the improvement of techniques already available in the theory, from the fifth period of the nursing course of UFRN; however, most of the students had never experienced them before.

It is clear that the active participation of students in technical procedures, clinical/critical thinking development and exchange of knowledge and responsibilities from multi-professionalism for the training of nurses become essential to prepare them for implementing a consistent and resolute nursing service. Thus, the fields enabled the students to experience the nurse exclusive procedures which the units offered [15].

Despite the rationing of the Personal Protective Equipment (PPE), there was accessibility for students, as well as materials for nursing procedures. It is noteworthy that the Federal Government announced cuts of about 70 billion reais (Brazilian currency) in the City, Health and Education areas [16] with a national drastic fall in hospital supplies, reflecting directly in the internship fields mentioned.

In the case of ECU, there was also the unsuccessful attempt of the professional-professional and student-professional link establishment, failing in communication and multi-professional relationship items. This problem is the ideal for a biomedical assistance model, which preaches the hierarchy of knowledge, in which the medical professional makes all the decisions without consulting the other members of the team, and they do not exercise their power to participate actively in the treatment

of choice for the patient [17]. Therefore, it was possible to observe this experience, since the same problem is subjected in professional life.

In contrast to professional-professional and student-professional communication, it was established significantly in the ICU. It is important to classify the ICU EU as organized and with adequate professional for its operation, and despite the absence of certain materials for performing sterile procedures (sterile area for the passage of the urethral catheter, for example) it was possible to do it without contamination using other sterile materials that fulfilled the function [6].

The creation of this link with other professionals provided the constant participation of students in hospital routine, favoring the repeated performance of several procedures and improving them; as well as the discussion of cases of patients with nurses, doctors, nutritionists, physiotherapists and nursing technicians. In this sense, it is seen the importance of an integrated team when it comes to the functioning of the sector. It is noteworthy that the ICU EU is located in a referral hospital in medium, and high complexity of Rio Grande do Norte, with a big demand of patients, resulting in overcrowded sectors.

This approach shows the importance of a nurse in the Intensive Care Unit assuming a responsible level to provide and evaluate care and almost always decide on the prescribed therapy for the next day. It should also be mentioned the clinical improvement in two of the three patients who were chosen for the study during practical activities. Therefore, the importance of the NP for resolute care and consistent performance of nursing staff to keep the treatment prescribed to guide in the improvement of the condition and consequent discharge of patients [9]. Finally, it was observed that the implementation of the SAE is possible critically ill patients in the ICU and its use is essential for the running of the unit. [18]

## Conclusion

The experiences provided by practical activities in the subject of High Complexity enable an initial approach with most procedures that nurses must have since, in most cases, they had not been experienced in previous semesters. This approach enables the student safety, overcoming fears about the deal with the life of another person, calculation of technique and experience within a health service of high complexity, facilitating their future inclusion in this environment.

The implementation of the Systematization of Nursing Assistance is another point that the practice gives to students. Although due to the number of days in each sector and turnover of patients, there have been difficulties to complete Phases of the Nursing Process, especially in the ECU area, the application of the early stages was viable, possible to see how the implementation of this resource facilitates, guided and enhances the nursing care.

Thus, the clinical and critical reasoning arising from this practice in different fields and also offering different levels of care is unique in the learning offered to students and confirm this activity continue on the course.

## References

1. Luz KR, Vargas MAO, Barlem ELD, Schmitt PH, Ramos FRS, Meirelles BHS. Estratégias de enfrentamento por enfermeiros da oncologia na alta complexidade. *Rev Bras Enferm* [Internet]. 2016 Jan-Feb [cited 2016 Jun 5]; 69(1):67-71. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0034-71672016000100067](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672016000100067)
2. Dirce BS, Marli BS, Alacoque EL, Andreas B. O papel profissional do enfermeiro no Sistema Único de Saúde: da saúde comunitária à estratégia de saúde da família. *Ciênc. saúde coletiva* [Internet]. 2012 Jan [cited 2016 Jun 5]; 17(1):223-230. Available from: <http://www.scielo.br/pdf/csc/v17n1/a24v17n1.pdf>
3. Chaves LDP, Laus AM, Camelo SH. Ações gerenciais e assistenciais do enfermeiro em unidade de terapia intensiva. *Rev Eletr Enf* [Internet]. 2012 Jul-Sep [cited 2016 Jun 5]; 14(3):671-678. Available from: <http://www.fen.ufg.br/revista/v14/n3/v14n3a25.htm>
4. Conselho Nacional de Secretários de Saúde. Assistência de Média e Alta Complexidade no SUS. CONASS [Internet]. 2007 [cited 2016 Jun 5]; 9(1). Available from: [http://bvsmms.saude.gov.br/bvs/publicacoes/colec\\_progestores\\_livro9.pdf](http://bvsmms.saude.gov.br/bvs/publicacoes/colec_progestores_livro9.pdf)
5. Ministério da Saúde (Brasil). Portaria nº 1.600, de 7 de julho de 2011. Reformula a política nacional de atenção às urgências e institui uma rede de atenção às urgências nenhuma sistema único de saúde (SUS). *Diário Oficial da União* 2011 Jul 08 [cited 2016 Jun 6]:70. Available from: [http://bvsmms.saude.gov.br/bvs/saudeflegis/gm/2011/prt1600\\_07\\_07\\_2011.html](http://bvsmms.saude.gov.br/bvs/saudeflegis/gm/2011/prt1600_07_07_2011.html)
6. Agência Nacional de Vigilância Sanitária (Brasil). Resolução da Diretoria Colegiada (RDC) nº. 26, de 11 de maio de 2012. Altera a Resolução RDC nº. 07, de 24 de fevereiro de 2010. Dispõe sobre os requisitos mínimos para funcionamento de Unidades de Terapia Intensiva e dá outras providências. *Diário Oficial da União* 2012 Feb 11 [cited 2016 Jun 6]; Section 1:170. Available from: [http://bvsmms.saude.gov.br/bvs/saudeflegis/anvisa/2012/rdc0026\\_11\\_05\\_2012.html](http://bvsmms.saude.gov.br/bvs/saudeflegis/anvisa/2012/rdc0026_11_05_2012.html)
7. O'Dwyer GA. Gestão da atenção às urgências e o protagonismo federal. *Ciência & Saúde Coletiva* [Internet]. 2010 [cited 2016 Jun 6]; 15(5):2395-2404. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1413-81232010000500014](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232010000500014)
8. Souza BMB, Vasconcelos CC, Tenório DM, Lucena MGA, Holanda RLT. Potencialidades e fragilidades da rede de atenção às urgências e emergências na V regional de saúde, Garanhuns-PE. *J Manag Prim Health Care* [Internet]. 2011 [cited 2016 Jun 6]; 2(2):41-45. Available from: <http://www.jmphc.com.br/saude-publica/index.php/jmphc/article/view/108>
9. Camelo SHH. Competência profissional do enfermeiro para atuar em Unidades de Terapia Intensiva: uma revisão integrativa. *Rev. Latino-Am. Enfermagem* [Internet]. 2012 Jan-Feb [cited 2016 Jun 6]; 20(1):[09 telas]. Available from: [http://www.scielo.br/scielo.php?pid=S010411692012000100025&script=sci\\_arttext&tlng=pt](http://www.scielo.br/scielo.php?pid=S010411692012000100025&script=sci_arttext&tlng=pt)
10. Reibnitz KS; Prado NL. Inovação e Educação em Enfermagem. Florianópolis: Cidade Futura; 2006.
11. Silva RM, Silva ICM, Ravalía RA. Ensino de Enfermagem: Reflexões sobre o Estágio Curricular Supervisionado. *Revista Práxis* [Internet]. 2009 Jan [cited 2016 Jun 6]; 1(1):37-41. Available from: <http://web.unifoa.edu.br/praxis/numeros/01/37.pdf>
12. Conselho Nacional de Educação. Câmara de Educação Superior (Brasil). Resolução CNE/CES nº3, de 7 de novembro de 2001. Institui Diretrizes Curriculares Nacionais do Curso de Graduação em Enfermagem. *Diário Oficial da União* 2001 Nov 9 [cited 2016 Jun. 6]; Section 1:37. Available from: <http://portal.mec.gov.br/cne/arquivos/pdf/CES03.pdf>
13. Lucchese R, Barros S. A constituição de competências na formação e na prática do enfermeiro em saúde mental. *Rev Esc Enferm USP* [Internet]. 2009 [cited 2016 Jun 7]; 43(1):152-160. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0080-62342009000100020](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342009000100020)

14. Oliveira SN, Ramos BJ, Piazza M, Prado ML, Reibnitz S, Souza AC. Unidade de pronto atendimento – UPA 24h: Percepção da enfermagem [Internet]. *Texto Contexto Enferm*. 2015 Jan-Mar [cited 2016 Jun 7]; 24(1):238-244. Available from: [http://www.scielo.br/pdf/tce/v24n1/pt\\_0104-0707-tce-24-01-00238.pdf](http://www.scielo.br/pdf/tce/v24n1/pt_0104-0707-tce-24-01-00238.pdf)
15. Veiga BS, Henriques E, Barata F, Santos F, Santos IS, Martins MM, et al. Manual de normas de enfermagem: procedimentos técnicos [Internet]. 2ª Ed. Ministério da Saúde. 2011 [cited 2016 Jun 7]. Available from: [http://www.acss.min-saude.pt/Portals/0/MANUAL%20ENFERMAGEM%2015\\_07\\_2011.pdf](http://www.acss.min-saude.pt/Portals/0/MANUAL%20ENFERMAGEM%2015_07_2011.pdf)
16. Agência Brasil. Ajuste fiscal: Governo anuncia corte de 69,9 bilhões de reais do orçamento [Internet]. *Carta Capital: Confiança Ltda*. 2015 May 22 [cited 2016 Jun 8]. Available from: <http://www.cartacapital.com.br/economia/ajuste-fiscal-governo-anuncia-corte-de-69-9-bilhoes-de-reais-do-orcamento-6830.html>
17. Santos, EP. Contribuição da Estratégia Saúde da Família para a consolidação do modelo assistencial preconizado pelo Sistema Único de Saúde [dissertation]. Araçuaí: Universidade Federal de Minas Gerais; 2011 [cited 2016 Jun 9]. Available from: <https://www.nescon.medicina.ufmg.br/biblioteca/imagem/3349.pdf>
18. Santos J, et al. Sistematização da assistência de enfermagem na visão de enfermeiros. *Revista Cuidarte Enfermagem* [Internet]. 2015 Dez [cited 2016 Jun 9]; 9(2):142-147. Available from: <http://fundacaopadrealbino.org.br/facfipa/ner/pdf/Revista%20CuidArt%20-%20Jul%20-Dez%202015.pdf>

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