# Obstetric Nurses: contributions to the objectives of the Millennium Development Goals

Enfermagem obstétrica: contribuições às metas dos Objetivos de Desenvolvimento do Milênio Enfermeras obstetrices: contribuciones a los objetivos de los Objetivos de Desarrollo del Milenio

Revista Gaúcha de Enfermagem

Thamiza da Rosa dos Reis<sup>a</sup> Cláudia Zamberlan<sup>b</sup> Jacqueline Silveira de Quadros<sup>a</sup> Jessica Torres Grasel<sup>c</sup> Adriana Subeldia dos Santos Moro<sup>d</sup>

#### **ABSTRACT**

**Objective:** To characterize and analyze assistance to labor and delivery performed by residents in Obstetric Nursing.

**Method:** Quantitative and retrospective study of 189 normal births attended by residents in Obstetric Nursing in the period between July 2013 and June 2014 in a maternity hospital located in the countryside of Rio Grande do Sul. Data collection took place by gathering information from medical records and the analysis was performed using descriptive statistics.

**Results:** It was found the wide use of non-invasive and non-pharmacological pain relief and freedom of position during labor. It is noteworthy that 55.6% of women have not undergone any obstetric intervention.

**Conclusions:** It was possible to identify that the Nursing Residency Program allows the reduction of obstetrical interventions, reflecting directly in the improvement of maternal health.

**Keywords:** Obstetrics. Nurse midwives. Parturition. Humanizing delivery. Maternal and child health. Internship, nonmedical. Millennium Development Goals.

#### **RESUMO**

**Objetivo:** Caracterizar e analisar a assistência ao parto e ao nascimento realizada por Residentes em Enfermagem Obstétrica.

**Método:** Estudo quantitativo e retrospectivo de 189 partos normais assistidos por Residentes em Enfermagem Obstétrica, no período de julho de 2013 a junho de 2014, em uma maternidade localizada no interior do Rio Grande do Sul. A coleta dos dados deu-se através de levantamento de informações dos prontuários clínicos e, para a análise, utilizou-se a estatística descritiva.

**Resultados:** Constatou-se o amplo uso de métodos não invasivos e não farmacológicos de alívio da dor e a liberdade de posição durante o trabalho de parto. Destaca-se que 55,6% das mulheres não foram submetidas a nenhuma intervenção obstétrica.

**Conclusões:** Foi possível identificar que o Programa de Residência em Enfermagem possibilita a redução de intervenções obstétricas, refletindo diretamente na melhoria da saúde materna.

**Palavras-chave:** Obstetrícia. Enfermeiras obstétricas. Parto. Parto humanizado. Saúde materno-infantil. Internato não médico. Objetivos de Desenvolvimento do Milênio.

#### **RESUMEN**

**Objetivo:** Caracterizar y analizar el trabajo de cuidado y la entrega realizada por residentes en Obstétrica, e identificar el impacto de esta práctica en la salud de las mujeres y por lo tanto a las metas de los Objetivos de Desarrollo del Milenio.

**Método:** Estudio cuantitativo y retrospectivo de 189 partos normales a la que asistieron los residentes en Obstetricia, dentro de un año, en una maternidad ubicada dentro de Rio Grande do Sul. La recogida de datos se llevó a cabo mediante la recopilación de información de los registros clínicos y se realizó el análisis utilizando estadística descriptiva.

**Resultados:** Se encontró un amplio uso de alivio del dolor no invasivo y no farmacológico y la libertad de posición durante el parto. Es de destacar que el 55,6% de las mujeres no sufrieron ninguna intervención obstétrica.

**Conclusiones:** Fue posible identificar que el Programa de Residencia en Enfermería permite la reducción de las intervenciones obstétricas, lo que refleja directamente en la mejora de la salud materna.

**Palabras clave:** Obstetricia. Enfermeras obstétricas. Parto. Parto humanizado. Salud materno infantil. Internado no médico. Objetivos de Desarrollo del Milenio.

DOI: http://dx.doi.org/10.1590/1983-1447.2015.esp.57393

- c Hospital Universitário de Santa Maria (HUSM). Santa Maria, Rio Grande do Sul, Brasil.
- d Hospital Municipal de São Pedro do Sul. São Pedro do Sul, Rio Grande do Sul, Brasil.

<sup>&</sup>lt;sup>a</sup> Universidade Federal de Santa Maria (UFSM), Departamento de Enfermagem, Programa de Pós-Graduação em Enfermagem. Santa Maria, Rio Grande do Sul, Brasil.

<sup>&</sup>lt;sup>b</sup> Centro Universitário Franciscano, Curso de Graduação em Enfermagem. Santa Maria, Rio Grande do

#### **■ INTRODUCTION**

Since the 1990s, the international community has made significant efforts to institute actions in order to promote economic, social and human development. In 2000, the "Millennium Declaration" a document that summarizes agreements to overcome the inequities between countries and regions of the world <sup>(1)</sup> was established by the leaders of the Member States of the United Nations.

The event established eight "Millennium Development Goals" (MDGs), which incorporate 22 targets and 48 indicators to be achieved by the year 2015. Of these, three are directly related to health, one of them, "Improve maternal health", have two goals to be achieved: the reduction of maternal mortality by 75% from the level observed in 1990 and universal access to sexual and reproductive health (1-2).

In Brazil, it was possible to observe progress in combating maternal deaths. According to data published by the Ministry of Health <sup>(2)</sup>, women's death during pregnancy, childbirth or the postpartum period sharply has reduced. Of the 141 deaths per 100,000 live births in 1990, the rate in 2011 amounted to less than 64 deaths per 100,000 live births. This reduction is important not only for the number of lives saved during this period, but also because it indicates significant progress in ensuring the citizenship, sexual and reproductive rights of women <sup>(3)</sup>.

By the way, Brazil has made significant efforts for such advances. Over the past decades, it has proposed a series of guidelines, standards and protocols to ensure the improvement of the current obstetric care model and the stimulation of less interventionist practices <sup>(4)</sup>. However, these initiatives have proven to be insufficient. It is believed that the persistence of poor maternal and perinatal indicators are directly related to the inappropriate use of technologies or unnecessary interventions, a fact clearly illustrated by the significant current cesarean rate <sup>(5)</sup>.

From the realization that the problem of maternal and child mortality can only be addressed with the involvement of different social actors, an attempt has been made to intensify health professionals' training activities, with respect to prenatal care, childbirth and postpartum (6-7). Based on this understanding, and recommendations of the World Health Organization (WHO), the participation of the midwife during delivery was regulated and became widely encouraged in the country, based on care and non intervention (8).

The education of the midwife involves skills and competencies that enable the provision of integral care, respecting childbirth as a physiological process, having a positive impact on maternal and child health <sup>(7)</sup>. The investment in the training of these specialized professionals seeks to portray the successful experience of industrialized countries where non-medical professionals are the primary health care providers for healthy women during childbirth <sup>(6)</sup>.

Therefore, one can see that the performance of the obstetric nurse is strategic, and a key role in the training of health care services and assistance to women in the birth process, contributing to improving maternal health and consequently the achievement of the fifth MDG. Given this reality, this study aims to characterize and assistance to labor and delivery performed by Residents in Obstetric Nursing (REO), and to identify the contribution of this practice to the improvement of women's health and therefore to the goals of the Millennium Development Goals Millennium.

#### **METHOD**

Quantitative, descriptive and retrospective study, carried out through documentary survey. The research took place at a maternity hospital located in the countryside of Rio Grande do Sul State, which is geared to meet the usual obstetric risk situations and is the site of theoretical and practical activities and practices of the Residency Program in Obstetrics, which is linked to a philanthropic University of the municipality. Due to its configuration as a public institution, the assistance provided by this hospital is geared towards users of the Unified Health System (SUS).

The study population consisted of usual risk obstetric women, between the months of July and December of 2013, and from January to July 2014 and who had their labor and delivery assisted by REOs. In this study, only the data in the usual risk obstetric women is analyzed. Thus diagnoses of maternal diseases, gestational age out of the range of 37-41 weeks, multiple pregnancies, non cephalic presentation, and birth weights that were not appropriate for the gestational age were excluded. There were 17 losses, because the records did not contain complete information on the assistance of the labor and delivery process.

The data collection procedure took place in the period between August and December 2014 and consisted in gathering information described in medical records.

For the information registration, an instrument created by the authors, highlighting the identification data, socio demographic profile, clinical and obstetric conditions, obstetric intervention and neonatal conditions was used.

Researchers proceeded to the design of social and obstetric profile of women assisted in the study institution-field from the obtained records. Social profile, for the purpose of this research, is understood as origin, maternal age, marital status, occupation and education level of the population being studied, and obstetric profile comprises parity, gestational age, cervical, uterine dynamic expansion and status of amniotic membranes at admission. The main interventions performed during labor and child-birth, namely: amniotomy, intravenous infusion of oxytocin and episiotomy, were also investigated, considering their relation to the obstetric profile. Study variables: weight, sex and Apgar Newborn (RN) were included in the neonatal profile.

Upon completion of data collection, began the process of simple descriptive statistics, with absolute and relative frequencies through the *Statistical Package for Social Sciences Software* – SPSS version 17.0. Data were presented in tables and discussed according to pertinent aspects of literature.

The data presented are part of a study <sup>(9)</sup> developed and presented in 2015 as a partial requirement to obtain the title of obstetric nurse. The care explained in the Guidelines and Standards involving Human Subjects, adopted by Resolution CNS 466/12 was explained. It was submitted to the Research Ethics Committee of the Franciscan University of Santa Maria, after evaluation and approval of the Research Committee designated by the institution, obtaining approval in opinion No. 739,564 / 2014.

### **RESULTS**

189 deliveries, all characterized by normal deliveries, ranked as usual obstetric risk were assisted by obstetric nursing residents in the studied maternity in the outlined period. According to Table 1, it was observed that the predominant age group found among young women was between 15 and 24 years of age, and more than eight years of education. The self declared skin tone considered characteristic of the population studied was white, with the most declared marital status being single.

As for occupation, 42.8% (81) exercised remunerated activities and 57.1% (108), when asked, said they performed their duties in a domestic environment or were

**Table 1** – Distribution of women according to sociodemographic characteristics, Santa Maria – Rio Grande do Sul – Brazil, July. 2013 jul. 2014

Characteristics (n=189)	N	%
Age		
Between 15 and 17 minutes	20	10.6
Between 18 and 24 minutes	68	35.9
Between 25 and 29 minutes	45	23.8
More than 29 years old	56	29.6
Martial Status		
Single	146	77.2
Married	34	17.9
Divorced	4	2.1
Widower	5	2.6
Education		
No schooling	1	0.5
Elementary school (1st to 4th grade)	15	7.9
Elementary school (5th to 8th grade)	81	42.9
High school or incomplete higher education	86	45.5
Higher education	4	2.1
Skin color (self-reported)		
White	131	69.3
Black	20	10.6
Brown	38	20.1
Origin		
Santa Maria	132	69.8
Municipalities in the region	57	30.1

Source: Survey data (9)

students. Concerning the origin, most of the survey participants were from the municipality of Santa Maria, being represented by 69.8% of women.

By analyzing the history of the current pregnancy, 62.4% (118) of pregnant women began prenatal care in the first quarter and 75.7% (139) had six or more visits. Of the 189 pregnant women, 93.1% (176) received prenatal care in the Unified Health System (SUS).

As for the clinical and obstetric conditions, most women were nulliparous, with a gestational age (GA) at the beginning of labor of 40 weeks or more, as shown in Table 2. Among the 110 women with previous deliveries, only 17 (8.9%) women had undergone a cesarean-section before.

When obstetric conditions of women were observed during the admission examination in the maternity in question, the following findings were found: 42.9% (81) of the women were in the latent phase, meaning they were not in labor, most pregnant women was admitted to with a pervious cervix between four and seven centimeters and with intact amniotic membranes. It is noteworthy that 52.91% (100) of women surveyed had their risk classification and acceptance carried out by residents in obstetric nursing.

As for the practices used in assisting women giving birth, there was the widespread use of non-invasive and non-pharmacological pain relief and freedom of position during labor, 90.5% (171) of the cases, with a predominance of walking and spray baths. However, it was found that most of the labor and delivery occurred in semi seated or lithotomy positions (Table 3).

With regard to the presence of a companion of choice during the parturition process, most women had this right guaranteed. However, the fact that 16.4% of the records did not report the presence of a companion should be highlighted. This fact is repeated with regard to the provi-

**Table 2** – Distribution of women according to clinical and obstetric conditions at admission, Santa Maria – Rio Grande do Sul – Brazil, July. 2013 jul. 2014

Clinical and obstetric conditions (n = 189)	N	%
Parity		
Nulliparous	79	41.8
Primipara	49	25.9
Secundípara	33	17.5
Multiparous (three or more births)	28	14.8
IG early labor		
37 weeks to 37 weeks and 6 days	9	4.8
38 weeks to 38 weeks and 6 days	43	22.7
39 weeks to 39 weeks and 6 days	61	32.3
40 weeks to 40 weeks and 6 days	76	40.2
TP phase on admission		
Latent Stage (> 4 cm)	81	42.9
Active phase (4 to 7 cm)	99	52.3
Transition phase (4 to 10 cm)	9	4.8
State of amniotic membranes		
Integral	158	83.6
Routes	31	16.4

Source: Survey data (9)

sion of fluids and food by mouth, in 30.7% of the records, there is no information about the mother's feedings.

Referring to obstetric interventions, it was found that of 158 pregnant women who were hospitalized with intact amniotic membranes, 27.5% were submitted to artificial rupture, and 41.8% (79) received intravenous infusion of oxytocin during labor and delivery. Over 50% of women maintained perineal integrity or minor laceration, ie, first degree. Episiotomies were performed in 15.5% (29) and the frequency of vaginal examination was on average 3 to 6 times, as indicated in Table 4. It is noteworthy that 55.6% (105) of the women were not subjected to any obstetric intervention.

The vast majority of newborns showed good vitality at birth; 87.7% (741) had an Apgar larger than seven in the first minute of life and 96.7% (817) had a rate higher than seven in the fifth minute. 67.4% of infants had between 2,500g and 3500g at birth and 32.5% between 3500g and 4.500g. As for the sex of newborns, 437 (51.7%) were male and 408 (48.3%) were female.

**Table 3** – Distribution of obstetric practices used in labor, Santa Maria – Rio Grande do Sul – Brazil, July. 2013 jul. 2014

Obstetric practices (n = 189)	N	%
Non-invasive and non-pharmacological methods and freedom of position		
Ambulation	161	85.2
Spray bath	92	48.7
Swiss ball	81	42.7
Massage	19	10
Squat	49	25.9
Position in expulsion		
Lithotomic or semi seated	164	89.8
Squatting	14	7.4
Lateralized	9	4.8
Hands and knees	2	1
Presence of a companion		
Yes	150	79.4
No	7	3.7
Not informed	31	16.4
Feeding		
Yes	100	52.9
No	31	16.4
Not informed	58	30.7

Source: Survey data (9)

**Table 4** – Distribution of obstetric interventions performed during labor and delivery, Santa Maria – Rio Grande do Sul – Brazil, July. 2013 jul. 2014

Obstetric interventions (n = 189)	N	%
Conditions of the perineum		
Integral	44	23.3
Episiotomy	29	15.4
Laceration degree I	63	33.3
Laceration degree II	51	27.0
Laceration degree III or IV	2	1.0
Rupture of amniotic membranes		
Spontaneous	137	72.9
Artificial	52	27.5
Number of vaginal examinations		
1 to 3 vaginal touches	52	27.5
1 to 6 vaginal touches	96	50.8
6 to 9 vaginal touches	37	19.6
10 or more vaginal touches	4	2.1

Source: Survey data (9)

## DISCUSSION

Prior to discussion of the data, we realize the importance of showing that this Residency Program in Obstetric is a pioneer in the city in addition to being the only active on in the southern region. Thus, assistance to deliveries here characterized and analyzed was provided by resident nurses and at times took place in partnership with the hospital's medical staff, so some indications of obstetric interventions were made by the medical team and are documented in the clinical record.

The socio-demographic profile of the population under study showed young women, with at least eight years of education, single, that did not perform remunerated activites. The quantity of women from municipalities in the region in search of care in the maternity ward where the study was conducted can be justified by the fact that this is a reference hospital for risk deliveries of the respective Regional Health Division and can also be justified by the possible lack of care from health centers in the countryside.

When compared to the obstetric clinical profile, the proportion of assisted nulliparous women was similar to that found in the results of studies conducted in São Paulo (10-11) (45.7% and 46.3%), as was the proportion

of women who had six or more prenatal consultations (87.3%), as recommended by the Ministry of Health. The proportion of previous cesarean sections was about five times higher than that observed in these studies (1.8% and 1.2%).

The admission of a large quantity of women in the latent phase and / or not in active labor was found at the time of hospitalization. Admittedly, early admission increases the length of stay of the mother, submitting her to the hospital unnecessarily and enhancing the number unnecessary interventions (12). It is noteworthy that the inclusion of REOs in the admission assessment and risk rating of the maternity-study helped to significantly reduce cases of early admission. Still, many mothers were admitted early because of the difficulty to access the service, the decision of other professionals working in the institution and especially the lack of institutional admission and hospitalization protocols.

As for the practices used and stimulated by REOs in assisting women giving birth, as shown by the data, non-invasive and non-pharmacological methods were widely used, as well as freedom of position during labor. Among the pain-relieving practices, spay baths were the most widely used, however, the stage of labor at which this mthos was employed has not been evaluated.

Arguably, the use of non-pharmacological methods allow the replacement of anesthetics and analgesics during labor and delivery as much as possible, thereby causing fewer interventions (13). In this sense, a qualitative research examined the feelings and perceptions of mothers in child-birth and birth of their children and found that the application of care for pain relief and the proper relationship between the woman and the professional contributed to a more satisfying experience and facilitated the evolution of the birthing process (14).

With regard to freedom of position during labor, the amount of women who opted for walking stood out. However, during birth, despite the benefits of upright positions for the woman and the fetus, the lithotomy or semi seated position was prevalent, reaching over 88% of births, lower than what was found in a national study (5) (91.7%). When comparing the vertical position or side position to the lithotomic position important aspects are highlighted, such as: the reduction of intense soreness and fatigue of women, the reduction of the expulsion stage, besides the reduction of directed delivery rates, episiotomy and obstetric interventions (15).

There is no strict protocol on the positions adopted during labor and birth, since women have the freedom of choice, and may choose a position according to their preference, as long as they have received guidance (15). However, the variety of positions during labor is characterized as a challenge to the REO, not being a reality of the setting of this study, either because of resistance from the professionals involved, the lack of physical structure, or by estrangement and lack of guidance of women as to this possibility.

Data on prevalence of births with the presence of a companion go against current legislation and the benefits indicated by research. A systematic review by the Cochrane Library, which analyzed 21 randomized clinical trials showed that this practice contributes to an increase in spontaneous vaginal deliveries, as well as to reduce the need for intrapartum analgesia and a better perception of the birth experience (16). However, there is a failure to report this information in the medical files, demonstrating the staff's perception of the companion as a mere spectator of the childbirth scene, not recognizing this person as a facilitator of the process (17).

In relation to neonatal outcomes, it was observed that, most newborns had adequate weight for their gestational age. In addition, high Apgar scores showed good condition of neonatal vitality, which can therefore be related to the timely indication of the route of birth, and quality of the care provided by the REO.

Another important consideration relates to obstetric interventions. Amniotomy was practiced on less than one third of the study population (27.5%). Compared to other studies <sup>(5,10-11)</sup>, this practice represented about half of what was found in the results (40.7%, 53.4% and 62.6%). Among the benefits of amniotomy, its contribution to the reduction in the duration of labor and the use of synthetic oxytocin should be emphasized. On the other hand, there is a tendency to an increase in caesarean section rates <sup>(12)</sup>. There are still doubts as to its effects on women and newborns, however, in a labor of usual risk, there should be a clear reason to justify this procedure <sup>(10)</sup>.

It was observed that the administration of synthetic oxytocin during labor and delivery was the intervention with the highest prevalence. Its recommendation was greater than rates found in other studies (5,10-11) (38.2%, 31% and 23.5%). It is noteworthy that, in most cases, this oxytocin was prescribed by the medical team in the studied scenario. However, in addition to interfering in the natural childbirth course and movement of the mother, synthetic oxytocin is related to a most painful experience during labor and its indiscriminate use can cause damage to maternal and child health, culminating in an iatrogenic cesarean (10).

As to the perineal conditions, episiotomies were observed in 15.5% of women in this study. Comparatively, it is above the ideal rate recommended by the World Health Organization (10-30%), similar to a study in a birth center (10) (14.1%) and lower than the study findings in a normal peri-hospital birth center (11) (25.7%). It is noteworthy that such a quantity is quite disparate compared to the rates presented in Brazil, 56.1% of vaginal births in with usual obstetric risk (5). There were no registration in the records regarding the reasons of professionals to indicate this procedure. Another differential of the assistance provided by REO in the studied scenario is the percentage of women with intact perineum during childbirth, especially if including first-degree lacerations.

In recent years, the literature has shown that the routine use of episiotomy should not be encouraged. In a cross-sectional study of 303 women in postpartum, it was found that the perineal pain is highly associated with this surgical procedure and a more advanced maternal age (15). In turn, other studies indicate that the restricted use of episiotomies result in less perineal trauma, suture and healing complications and consequent reduction of maternal morbidity and mortality (10).

The rate of women who received no intervention during labor and delivery, ie, gave birth naturally, and had their physiological rhythm respected and, the assistance provided by the REO is evident as the main result of this study. When compared to results of an important research in the country <sup>(5)</sup>, this number was ten times higher. Legitimizing this fact, research shows that the rates of obstetric interventions are highly correlated with childbirth care professionals and is considerably reduced when the professionals involved are nurses <sup>(18-19)</sup>.

Care with less interventions is closely associated with greater satisfaction with the birth experience <sup>(20)</sup> and the participation of midwives <sup>(7-8)</sup>. The assistance provided by these professionals respects the parturition process as physiological, transmitting safety and comfort to the woman involved, thus rescuing their self-confidence and strengthening their ability to give birth<sup>(8)</sup>. So, obstetric nurses are trained and appropriate professionals to be responsible for assistance to normal <sup>delivery (7)</sup>.

Scientific evidence has pointed to the relationship between increased maternal and perinatal morbidity and mortality and the interventionist hegemonic model in both the public and private health care system <sup>(6)</sup>. Thus, it understands that the movement in favor of the reduction of unnecessary interventions in the labor and birth process may result in reducing maternal mortality in the

Brazilian scenario, enabling the achieval of MDG targets. It is noticed that the preventability of maternal deaths is possible, but demands actions and strategies and the valorization of labor and assistance by obstetric nurses.

From this perspective, it emphasizes the importance of the performance of the obstetric nurse in the assistance at delivery and usual birthl risk scenarios. In addition to a less interventionist care, inherent to their training, the obstetric nurse appears to be more enticed to promote the use of evidence-based practices and is more sensitized to the rescue of the woman's role in the parturition process. It is understood that to improve the health of mothers and children, a set of actions aimed at empowering women and reducing inequalities is necessary. However, it is believed that obstetric nursing can be a facilitator in qualifying obstetric care.

#### FINAL CONSIDERATIONS

Data analysis has shown great progress and achievements of obstetric nursing among residents of the service, since it adopts the so-called "active management" of labor in order to speed up the delivery process. As the main result is the proportion of women attended who were not subject to any obstetric intervention and the appropriate use of technology. More than half of the study population experienced its birth centered on physiology and their needs and choices.

The model of care discussed presented favorable maternal and neonatal outcomes, following WHO recommendations, representing a movement in search of a service model, insurance and that guarantees women the right to a pleaseant and humanized birth. Thus, it was possible to identify that the Residency Program in Nursing, as a strategy for professional qualification enables the reduction of unnecessary obstetric interventions, reflecting directly in the improvement of perinatal health and consequently in maternal morbidity and mortality rates, which is a Millennium Development Goal.

The fact that the study was conducted in a teaching hospital and the participants are users of the Unified Health System, which implies a different reality in socioeconomic and cultural terms, and the questionable degree of generalizability to the general population was considered a limitation. The fact that the results are related to births attended by nurses of the first class of Residents in Obstetric Nursing, which is a period of intense struggles and achievements of space to operate the proposed service model, should also be highlighted.

Among the possible contributions for assistance, there is the sharing of experiences like this that highlight the need to expand the training and performance of obstetric nurses, their performance space and the acceptance of their work by other professions and society. In regards to this research, attention is called to the importance of conducting research showing the importance of work in the field of obstetric nursing.

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#### ■ Author's address:

Thamiza da Rosa dos Reis Rua Henrique Dias, 160/401, Centro 97010-220 Santa Maria – RS E-mail: thamiza1@hotmailcom Received: 29.07.2015 Approved: 24.11.2015