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*Method of Patient Classification System in obstetric staff scheduling.
III. Demand for direct nursing in the delivery room among mothers
who deliver by Caesarean section*

Based on the obstetric literature, differences are generally observed between the demand for nursing time among mothers who give birth naturally (longer) and those who deliver by Caesarean section (shorter) (1,2). This was confirmed by the results presented in Part II of this study (3). Own studies also confirmed that the nursing time provided for mothers who delivered naturally was shorter than the time resulting from the demand for obstetric care. In consideration of the above, the study was undertaken in order to reveal whether the mothers who deliver by Caesarean section also receive nursing time shorter than that resulting from their actual demand for care. The following research problem was posed: Are there statistically significant differences between the time of obstetric care provided for mothers who deliver by Caesarean section and time with which they should be provided (model)?

MATERIAL AND METHODS

The study covered 86 women in labour who delivered by Caesarean section in the delivery room in a clinic in Lublin, and was conducted at the turn of 1999. The research method was an active observation, and 1,474 activities were measured in individual categories of care by means of time-schedule technique. The demand for care was determined based on the nursing scheme designed for each mother who delivered by Caesarean section. Model nursing time was also calculated (4, 5).

The differences between the provided and model nursing times were determined by means of statistical tests: t-Student test for equal variances, and C Cochran-Cox test when variances for the variables examined differed.

RESULTS

Due to the state of health, the women who delivered by Caesarean section were qualified into

Categories II and III of care, excluding Category I. In Category II of care the demand for direct nursing time provided by midwives for women who delivered by Caesarean section was $\bar{x} = 48.05$ min/parturient, SD = 4.94 (Tab. 1), the model value being $\bar{x} = 53.26$ min/parturient/daily, SD = 6.41. The analysis conducted by means of C Cochran-Cox test did not show any statistically significant differences between the provided and model nursing times in Category II of care among the women who delivered by Caesarean section ($p > 0.05$).

Table 1. Demand for direct nursing care (T_{pb}) expressed in minutes among women who delivered by Caesarean section qualified to Category II of care

No.	Number of individual nursing charts, diagnosis	Direct nursing time	
		provided	model
1	8. Gravida GI, PI, 40 weeks. Caesarean section - ophthalmologic indications	40.38	42.10
2	18. Gravida GII, PII, 40 weeks. Caesarean section - frequent decelerations in fetal heart rate	47.04	56.51
3	36. Parturient GIII, PIII, 40 weeks. Caesarean section - status post two sections, suspected separation of symphysis pubica, draining of amniotic fluid	52.22	64.49
4	58. Parturient GII, PI, 37 weeks. Hyperthyroidism	43.26	51.13
5	59. Gravida GI, PI, 39 weeks. Suspicion of numerous fetal defects	45.27	50.27
6	61. Gravida GI, PI, 37 weeks. Fetal gigantism	58.22	60.39
7	62. Gravida GII, PII, 38 weeks. Fetal gigantism	49.54	55.42
8	63. Gravida GIII, PIII, 40 weeks. Ophthalmologic indications	50.12	54.37
9	64. Parturient GI, PI, 40 weeks. Longitudinal lie, breech presentation of the fetus	46.27	48.31
10	65. Parturient GIII, PIII, 39 weeks. Status post two Caesarean sections	48.15	49.57
Total		480.47	532.56
Mean T_{pb} time (\bar{x}) and standard deviation (SD) in Category II of care/parturient/daily		$\bar{x} = 48.05$ SD = 4.94	$\bar{x} = 53.26$ SD = 6.41
C = 1.95 (-) $p > 0.05$			

Table 2 presents the demand for direct nursing time in Category III of care in the women who delivered by Caesarean section. In this group of women in labour the time of care provided was $\bar{x} = 87.58$, SD = 21.76, while the model time slightly differed from that provided and was $\bar{x} = 89.95$ min/parturient/daily, SD = 35.35. Similarly as in Category II of care, in Category III no statistically significant differences were observed between the provided and model nursing times.

Table 2. Demand for direct nursing time (T_{pb}) expressed in minutes among women who delivered by Caesarean section qualified to Category III of care

No.	Number of individual nursing charts, diagnosis	Direct nursing time	
		provided	model
1	9. Gravida GIII, PII, 37/38 weeks. Bad obstetric history. Lack of infant	98.42	98.42
2	16. Parturient GI, PI, 37 weeks. Status post heart surgery. Hyperthyroidism	128.14	128.14
3	23. Gravida GI, PI, 39/40 weeks. Caesarean section - high, straight station of head	79.33	102.09
4	33. Parturient GIII, PIII, 40 weeks. Caesarean section - decelerations in fetal heart rate	72.45	97.59
5	37. Gravida GI, PI, 40 weeks. Induction of labour. Decelerations in fetal heart rate	96.00	110.00
6	42. Gravida GI, PI, 30 weeks. Caesarean section - suspected rupture of the uterus	53.30	53.30
7	43. Gravida GII, PI, 38 weeks. Bad obstetric history	62.59	74.09
8	46. Parturient GII, PII, 40/41 weeks. Bronchial asthma	103.02	124.44
9	49. Parturient GII, PII, 39 weeks. Caesarean section - cholesterolosis	85.50	100.32
10	51. Parturient GI, PI, 37 weeks. Bad obstetric history	97.09	11.09
Total		875.84	889.48
Mean T_{pb} time (\bar{x}) and standard deviation (SD) in Category III of care/parturient/daily		$\bar{x} = 87.58$ SD = 21.76	$\bar{x} = 89.95$ SD = 35.35
C = 0.19 (-) p > 0.05			

DISCUSSION

In the women who delivered by Caesarean section the deficit of care was smaller; in Category II of care – by 5.32 minutes, in Category III – by 12.65 minutes less than that demanded. The differences between both variables in the women who delivered by Caesarean section were not statistically significant. It is probable that the lack of significance between the provided and model times was due to the danger of maternal or fetal harm, as well as a greater number of instrumental procedures applied during Caesarean section. In such circumstances there is a smaller margin of freedom in performing therapeutic or nursing activities and, simultaneously, in reducing their duration.

The determination of direct nursing time standards for women in labour in the delivery room constitutes a basis for the subsequent stage of the study, which will focus on the determination of time devoted to non-nursing activities. At the same time, the verification of the three components of the PCS method: criteria of obstetric care, direct nursing time standards and time devoted to non-nursing activities will enable us to proceed to the final stage of the study. The final stage will be the determination of the number of obstetric staff which should be provided in the delivery room for the good quality care of women in labour. This scope of research problems will be the subject of a separate report.

CONCLUSIONS

Among the women who delivered by Caesarean section qualified into Categories II or III of care, the differences between the provided and model nursing times were not statistically significant. Hence, both times – provided and model, may constitute a basis for the determination of direct nursing time standards for women who deliver by Caesarean section.

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SUMMARY

In own studies concerning the determination of the demand for the direct nursing time in the delivery room, the mothers examined were divided into two groups: those who delivered naturally and those who delivered by Caesarean section. The results of the study showed that no statistically significant differences were observed between the nursing time received from midwives by the women who delivered by Caesarean section and the model time. Therefore, the standards concerning the number of nursing staff for this group of women may be determined based on either provided or model times.

Metoda „Patient Classification System” w planowaniu obsad położniczych.

III. Zapotrzebowanie na pielęgnację bezpośrednią w sali porodowej
rodzących drogą cesarskiego cięcia

W badaniach własnych nad wyznaczeniem czasu zapotrzebowania na pielęgnację bezpośrednią w sali porodowej badane kobiety zostały podzielone na dwie grupy: rodzące siłami natury i drogą cięcia cesarskiego. Wyniki badań wskazują na to, że w odniesieniu do rodzących drogą cięcia cesarskiego różnic istotnych statystycznie między czasem, który otrzymują od położnych, a czasem modelowym nie stwierdzono. W związku z tym normy obsad położniczych dla tej grupy kobiet mogą być opracowane na podstawie czasów świadczonych bądź modelowych.

