

Costs of Postpartum Care: Examining Associations from the Ontario Mother and Infant Survey

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Une étude menée dans le cadre d'une enquête transversale réalisée auprès de 1250 mères de nourrissons « normaux » a été faite dans le but de répertorier les caractéristiques inhérentes aux mères et aux nourrissons ainsi que les coûts des services de santé et des services sociaux auxquels cette population a recours dans les quatre premières semaines suivant la sortie de l'hôpital, et ce en Ontario, au Canada. Les interviewers ont demandé à chaque mère de répertorier le nombre de fois qu'elle a fait appel à des services pour elle-même et pour son nourrisson. Ces chiffres ont été multipliés par le coût à l'unité pour chacun des services et les données ont été additionnées pour établir le coût total des services utilisés. Bien que le taux de réadmission fût peu élevé (1 % chez les mères, 4 % chez les nourrissons), les coûts liés aux soins hospitaliers et aux soins en salle d'urgence (une moyenne de 194 \$ par dyade mère / enfant) constituaient la plus grande part des frais liés

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aux soins de santé. En second venaient les coûts liés aux visites d'un médecin ou d'une sage-femme dont la plupart des mères ont bénéficié (une moyenne de 128 \$ par dyade). Les frais médicaux pour les mères dont le revenu était inférieur à 20 000 \$ étaient plus élevés que ceux des mères touchant des revenus plus élevés. Les coûts en soins infirmiers communautaires (une moyenne de 86 \$ par dyade) étaient plus élevés chez les mères qui avaient elles-mêmes identifié plus de cinq points nécessitant de leur part un apprentissage (p. ex. l'alimentation du nourrisson, les soins au bébé et son comportement, les changements qu'elles vivaient sur le plan émotif, les signes révélant des troubles de santé chez le bébé). Ils étaient aussi plus élevés chez celles qui percevaient leur propre santé comme étant déficiente, celles qui sentaient qu'elles ne bénéficiaient pas d'une aide et d'un soutien adéquat à la maison, celles qui éprouvaient de nombreux signes et symptômes de dépression et celles qui avaient été hospitalisées après l'accouchement pendant 48 heures ou moins. Les frais associés aux visites d'une travailleuse sociale étaient plus élevés pour les mères souffrant de dépression et les mères à faible revenu. Les coûts totaux pour les services de santé et les services sociaux étaient deux fois plus élevés pour les mères qui touchaient un revenu inférieur à 20 000 \$ (une moyenne de 788 \$ par opposition à 399 \$ par dyade) et pour les mères souffrant de dépression clinique (845 \$ par opposition à 413 \$). Notamment, les coûts associés aux soins infirmiers étaient supérieurs pour les mères affichant un taux de dépression élevé (135 \$ par opposition à 81 \$).

A cross-sectional survey of 1,250 mothers of "normal" newborn infants was conducted to assess mother and infant characteristics as well as the costs of health and social services used in the first 4 weeks after discharge from hospital in the province of Ontario, Canada. Each mother was asked to recall use of services for herself and her infant. This utilization was multiplied by the unit cost of each service and summed to arrive at the total cost of services used. Although re-admission rates were low (1% for mothers, 4% for infants), costs associated with hospital and emergency room care (\$194 on average per mother/infant dyad) accounted for the greatest proportion of total health-care costs. Physician or midwife visits, which were received by almost all mothers, were the next most costly service (\$128 on average per dyad). Mothers with incomes under \$20,000 had more medical costs than those with higher incomes. Costs of community nursing care (\$86 on average per dyad) were higher for mothers with more than 5 self-identified learning needs (e.g., infant feeding, infant care and behaviour, emotional changes in self, signs of illness in infant); perception of their own health as poor; perception of inadequate help and support at home; many signs and symptoms of depression; and postpartum hospital stay of 48 hours or less. Costs for social work visits were higher for mothers with depression and mothers with low incomes. Total health and social service costs were double for mothers with family incomes under \$20,000 (\$788 vs. \$399 on average per dyad) and for mothers with clinical depression (\$845 vs. \$413). Specifically, nursing care costs were greater for mothers with high depression scores (\$135 vs. \$81).

Introduction

Early hospital discharge following vaginal delivery has become standard practice in the province of Ontario, Canada. The Canadian Pediatric Society (CPS) and the Society of Obstetricians and Gynecologists of Canada (SOGC) have issued policy statements in support of a flexible length of stay with community follow-up (Fetus and Newborn Committee, 1996). However, the full impact of shortened

stay on health outcomes, service utilization, and post-discharge costs is unknown. Although shorter stays reduce costs associated with routine postpartum care provided in hospital, it is not known if length of stay influences the costs of community-based health and social services. Also of interest is whether specific mother and infant characteristics are related to utilization and hence costs of care in the early postpartum period.

Literature Review

A literature search of MEDLINE and Health Star for the years 1990–2000 inclusive, using the keywords *health care costs* and *postpartum*, yielded no studies from Canada measuring service use and costs for women and infants in the early postpartum period. Some studies were found from the United Kingdom and the United States comparing the effectiveness and costs of different community programs. However, few studies have documented the utilization of community-based health services for women and infants in the immediate postpartum period and the association between utilization and different characteristics of the mother or newborn.

Some postpartum and other studies with different populations have found an association between poverty and increased hospital costs (Glazier, Badley, Gilbert, & Rothman, 2000) and between social support and increased health-care costs (Broadhead, Gehlbach, DeGruy, & Kaplan, 1989). Only one study was found examining the relationship of mother and infant characteristics with costs of health and medical care (visits to clinics, health centres, and physicians) (Hakansson, Cars, Petersson, & Carlsson, 1996). In this Swedish study, the researchers examined important factors in determining infant use of health and medical care during the first 18 months. They found that mothers who were blue-collar workers (a possible indication of lower or middle income) had a greater number of visits.

Some studies from the United States and elsewhere have found no increase in hospital re-admissions after early discharge in low-risk mothers with adequate follow-up (Brumfield, 1998; Edmonson, Stoddard, & Owen, 1997). A British study found the provision of post-natal support by support workers (homemakers) to have no effect on quality of life, depression, social support, breastfeeding rates, or health-care costs at 6 weeks and 6 months after support worker visits (Morrell, Spiby, Stewart, Walters, & Morgan, 2000).

A randomized controlled trial in the United States examined the effect of an early-discharge home follow-up program for low-risk mothers on non-routine health-care expenditures at 6 weeks postpartum (Brown & Johnson, 1998). The group receiving enhanced care by visiting nurses ($n = 29$) had an estimated cost of US\$646, whereas the control group ($n = 29$) had a cost of US\$6,631, which included clinic use, emergency room visits, hospital re-admission, and physician visits. The findings suggest that nurse home visits reduce utilization of some health services, but it is unclear which other factors affect costs associated with nursing and medical care.

Methods

Setting

At the time of the present survey (1999), Ontario had a population of 11.52 million and approximately 130,908 births annually (Statistics Canada, 2001). Five sites were selected from across the province (Table 1) to provide a cross-section of mothers and newborn infants with diverse characteristics and varied access to health and social services.

Table 1 Site Characteristics		
Site	Characteristics	Number of Births Annually
Site 1	Large suburban teaching centre in central-eastern Ontario, metropolitan catchment area	3,900
Site 2	Small regional centre in central-eastern Ontario, urban and rural catchment area	1,500
Site 3	Large regional centre in central-western Ontario, urban and rural catchment area	4,500
Site 4	Large teaching hospital in central-eastern Ontario, metropolitan catchment area	2,700
Site 5	Small regional centre in central-northern Ontario, urban and rural catchment area	2,000

Study Design and Sample

The sample for this cross-sectional survey comprised the first 250 eligible, consenting mothers from each of the five sites, for a total of 1,250 subjects. Intake of subjects was started in November at the first site and thereafter staggered across sites. Data collection was completed by the following June. A woman was eligible if she had given birth vaginally to a single live infant, was being discharged from hospital at the same time as her infant, was assuming care of her infant at the time of discharge, and was competent to give consent to participate. Of the women screened, approximately 26% were ineligible. Of those who were eligible, 27% refused and 32% were missed due to time limitations on the part of the on-site research assistant at some sites. The study was conducted in seven languages (English, French, Spanish, Italian, Portuguese, Cantonese, and Farsi) to include women who were not fluent in English. The questionnaire was translated by a qualified translator and each subject was interviewed in her own language. This approach served to elicit important information about groups often thought to be at risk for poor health outcomes, which is lost in studies that include only English-speaking subjects.

Measures

The mothers completed a self-administered questionnaire prior to discharge and a structured telephone interview 4 weeks after discharge. The questionnaire addressed sociodemographics, use of prenatal services, medical problems since giving birth, chronic health problems, concerns at time of discharge, infant birth weight and gestation, infant feeding, infant health problems, and perceived adequacy of help and support available at home. It incorporated the Edinburgh Postnatal Depression Scale (EPDS) (Cox, Holden, & Sagovsky, 1987; Murray & Cox, 1990) as well as questions from both the Ontario Health Survey (Ministry of Health, 1992) and the Health and Social Service Utilization Questionnaire (HSUQ) (Browne, Gafni, Roberts, Goldsmith, & Jamieson, 1995). The telephone interview consisted of questions about length of hospital stay postpartum, information needs, maternal and infant health, social support, infant feeding, type and frequency of health and social services used post-discharge, re-hospitalization, and laboratory tests. Interviewers were health or social science students or professionals. They were given a script to follow and were individually trained by the research coordinator and the investigators in a standardized way that included practice and feedback sessions.

The health and social service utilization outcome variable was measured using an inventory developed by Browne, Arpin, Corey, Fitch, and Gafni (1990) modified for use with a postpartum population by the addition of service providers such as midwives, pediatricians, and obstetricians and questions about use of services for both mother and infant. The questions concerned the respondent's utilization of different categories of health and social services such as physicians, nurses, social workers, midwives, hospitals, and emergency rooms. Each mother was asked to indicate the number of visits and phone consultations separately for herself and her infant for each service used. Each category of visit was multiplied by the unit cost of the visit to yield a measure of cost for each health and social service as well as total cost for each mother, infant, and mother/infant dyad. Costs per visit were determined from appropriate sources such as the Ontario Health Insurance Plan fee schedule, clinic fees, hospital rates, and public health and other agency rates. Thus costs include a societal perspective as costs are accrued to the government and the person.

Analysis

Descriptive analysis was completed using means, standard deviations, and percentages. Correlations were carried out using continuous data where possible. Later continuous variables were dichotomized where clinically meaningful cutoffs were appropriate. For cost comparisons, the dichotomized variables were used. Stepwise regression analysis was performed to determine associations with the continuous variable, costs.

Results

Response Rates

Of the 1,250 participants, 875 (70%) completed the follow-up interview (3% refused, 20% could not be located, 4% were located too late, and 3% did not complete it for other reasons), although only 873 (99.8%) of these completed the HSUQ section for themselves and their infant. Fifty-seven mothers did not report their income category. There was no difference in age, parity, or length of stay for the subjects and those who refused or were missed.

Description of Participants

At baseline, 92% of the women indicated that they had a partner and 78% were married, 18% reported an income of less than \$20,000 per

annum, 16% spoke neither English nor French as their first language, and 75% had at least a high school education. The mean age of the women was 30 years. The infant mean birth weight was $3,503 \pm 468$ grams, mean gestation was 39.5 ± 1.4 weeks, and for 43% of the mothers it was their first live birth. At discharge, 89% of the mothers were breastfeeding and 15% indicated that they had little or no support or help at home. Eighty-five percent of mothers had a postpartum hospital stay of 48 hours or less. Only 1.6% of the infants had low birth weight (less than 2,500 grams) (Sword et al., in press).

At 4 weeks post-discharge, 15% of mothers had many learning needs related to their infant's and their own health and care (such as infant feeding and signs of illness and their own health and emotional changes); 16% had some/slight concerns about their infant's health, and 3.3% indicated that their own health was poor. The rate of clinical depression (defined as ≥ 12 on the EPDS) was 10%; 11 women (1.3%) indicated higher depression scores (> 19 on the EPDS).

Costs of Health and Social Care

The average costs of care for mother and infant in the first 4 weeks post-discharge were measured for all health and social services (Table 2). The greatest costs were for physician care and re-admission of infant to hospital.

The five sites showed a range in the mother and infant mean cost of health and social services excluding re-admissions (\$207–\$355) and including re-admissions (\$327–\$665) (Table 3). The variation may be related to use of pediatricians and reason for infant re-admission (e.g., one site routinely re-admitted for jaundice). However, differences among sites were not statistically significant. A total of 1% of mothers and 4% of infants were re-hospitalized. In summary, the eight maternal re-admissions were for infection (3), bleeding (2), congestive heart failure (1), D&C (1), and gallbladder (1). The 36 infant re-admissions were for infection (14), jaundice (12), constipation (2), vomiting (1), distended abdomen (1), and other (6). Although re-admission costs for some mothers and infants were extensive (up to \$19,032), the mean costs for the sample ranged between \$0 and \$72 on average per mother/infant dyad at the different sites. Further, there was wide variability (high standard deviations) in the total cost of utilization per mother/infant dyad when re-admission costs were included, because few mothers and infants were re-admitted and, for those who were re-admitted, the length of hospital stay varied.

Table 2 *Costs of Care for Mother and Infant*

Descriptive Statistics	Range (\$)	Mean (\$)	Std. Dev. (\$)
Mother (<i>n</i> = 875)			
Family physician	0–337.5	19.14	34.42
Family physician house call	0–77.6	0.40	5.07
Specialist	0–108.8	0.99	8.96
Midwife	0–219	11.26	48.40
Obstetrician/gynecologist	0–111	3.21	11.70
Emergency room	0–258.37	6.20	28.98
Walk-in clinic	0–78	0.95	6.02
Physiotherapist	0–488.88	0.98	18.23
Occupational therapist	0–83.94	0.19	4.01
Social worker	0–530.25	2.67	23.64
Nutritionist	0–505.85	2.43	25.72
Public health nurse visit	0–814.45	14.84	47.70
Public health nurse phone consultation	0–459.25	6.13	23.15
Other visiting nurse visit	0–498.74	16.89	39.54
Other visiting nurse phone consultation	0–91.85	3.65	12.26
Homemaker	0–564.6	0.90	20.55
Chiropractor	0–415.8	3.99	25.23
Psychologist	0–251.1	0.57	12.00
Psychiatrist	0–123.86	0.28	5.12
Other health-care provider	0–315	3.77	21.30
Medical supplies/aids/devices	0–350	9.00	32.47
Laboratory testing	0–100.55	2.23	9.32
Total utilization excluding hospital stay	0–1,760.56	110.70	144.00
Hospital stay	0–11,102	31.72	459.62
Total utilization including hospital stay	0–11,302.1	142.42	493.49

Costs of Postpartum Care

Descriptive Statistics	Range (\$)	Mean (\$)	Std. Dev. (\$)
Infant (n = 873)			
Family physician	0-337.5	69.80	45.14
Family physician house call	0-38.8	0.09	1.86
Midwife	0-219	11.79	49.46
Pediatrician	0-230.4	10.15	21.27
Specialist	0-108.8	1.00	8.97
Emergency room visit	0-775.1	13.17	54.28
Walk-in clinic	0-78	2.29	8.99
Physiotherapist	0-0	0.00	0.00
Occupational therapist	0-0	0.00	0.00
Social worker	0-212.1	0.85	10.74
Nutritionist	0-404.68	1.74	21.87
Public health nurse visit	0-428.65	13.31	36.69
Public health nurse phone consultation	0-183.7	4.95	15.71
Other nurse visit	0-498.74	23.11	48.31
Other nurse phone consultation	0-91.85	3.45	11.42
Homemaker	0-0	0.00	0.00
Other health professional visit	0-266	2.99	18.54
Medical supplies/aids/devices	0-300	3.27	20.14
Outpatient diagnostic testing	0-314.81	6.96	25.15
Total utilization excluding hospital stay	0-1,203.37	170.02	125.17
Hospital stay	0-19,032	142.61	1,042.41
Total health utilization	0-19,689	312.63	1,088.15
Both Mother and Infant			
Total utilization excluding hospital stay	0-2,362.8	280.79	228.43
Total utilization including hospital stay	0-2,0119.5	455.20	1,216.00

Table 3 Total Health and Social Service Costs for Mother and Infant												
	Site 1		Site 2		Site 3		Site 4		Site 5		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Health/social services* excluding hospital re-admission	\$298	(206)	\$207	(232)	\$285	(213)	\$355	(244)	\$286	(228)	\$281	(228)
Health/social services* including hospital re-admission	\$665	(2,171)	\$362	(866)	\$327	(533)	\$517	(882)	\$469	(1,091)	\$455	(1,216)
*p = NS												

Factors Associated with Costs of Care

Fourteen sociodemographic and clinical variables were selected a priori as potential correlates of health and social service costs: (1) language spoken at home (English or French vs. other); (2) family income (< \$20,000 vs. \$20,000+); (3) partnered or unpartnered; (4) age (< 22, 22–34, or > 34 years); (5) education (high school or less vs. > high school); (6) first live birth versus second or subsequent birth; (7) length of hospital stay; (8) number of maternal learning needs; (9) perceived adequacy of help at home; (10) postpartum depression; (11) self-reported health status; (12) infant birth weight (< 2,500 vs. 2,500+ grams); (13) feeding method (breast vs. bottle); and (14) infant health status as reported by mother.

Eight variables correlated with total health and social service utilization costs for mother and infant during the 4 weeks. Overall costs were lower if: (1) the mother spoke English or French ($r = .067$; $p = .049$); (2) the mother had a partner ($r = .157$; $p < .01$); (3) family income was \$20,000+ ($r = -.113$; $p < .01$); (4) the mother's health was not poor ($r = -.113$; $p < .01$); (5) the infant's health was good to excellent ($r = -.396$; $p < .01$); (6) the mother had adequate help and support at home ($r = -.266$; $p < .01$); (7) the mother had lower depression scores ($r = .174$; $p < .01$); and (8) the mother had fewer learning needs ($r = .120$; $p < .01$).

Nursing and Medical Costs

The total cost for community-based nursing care, including visits and phone consultations by public health nurses, clinic nurses, and community visiting nurses, averaged \$86 per mother/infant dyad. The total cost for medical care, including visits and phone consultations with family physicians, midwives, obstetricians, pediatricians, psychiatrists, and other specialists, averaged \$129 per dyad. Because the data were collected at 4 weeks post-discharge, in most cases utilization did not include the physician follow-up visit regularly scheduled for women at 6 weeks.

Although 43% of mothers and infants did not receive any nursing care during the 4 weeks, only 1.3% did not receive any medical or midwifery care. Nursing costs ranged from \$0 to \$1,096 per dyad, and medical and midwifery costs ranged from \$0 to \$717.

Stepwise multiple regression analysis found five factors to be significantly associated with higher nursing costs ($F = 20.58$; $p < .001$). In order of significance, these were: more than five self-identified learning needs, mother's perception of her own health as poor, mother's percep-

tion of inadequate help and support at home, high maternal depression scores, and postpartum hospital stay of 48 hours or less. In total, the variability of these factors accounted for 11% of the variability in costs for nurse contacts. Costs were as follows: \$144 for women with more than five learning needs, versus \$70 for those with fewer needs; \$189 for women who rated their own health as poor, versus \$83 for those who rated their health as very good to excellent; \$250 for nurse contacts for women with high depression scores (> 19 on EPDS), versus \$84 for those with low scores; \$128 for women indicating inadequate help and support at home, versus \$79 for those indicating adequate help and support; and \$90 for community nursing care for women who stayed in hospital 48 hours or less, versus \$66 for those who stayed longer.

Stepwise multiple regression analysis found poverty to be the only characteristic of mothers or infants significantly associated with higher medical costs ($F = 2.82$; $p = .005$). Medical (physician and midwife) costs were \$152 for mothers with a low family income ($< \$20,000$ annually), versus \$124 for those with a higher income. This variability in income level accounted for 1% of the variability in medical costs. Although this may seem insignificant — at \$28 more per child in a poor family over the 4 weeks — it is not insignificant if the trend towards greater utilization and higher costs continues.

Costs Related to Mothers with Depression

Costs were notably different for mothers with and without depression as determined by an EPDS score of ≥ 12 (Table 4). The total cost for health and social care was \$845 for mothers with depression and their infants, versus \$413 for those with lower scores ($p < .01$). The total cost was \$2,137 for 11 mothers with high depression scores (> 19 EPDS), versus \$434 for those with lower scores. Most of the \$2,137 was accounted for by care for the infant, including hospital re-admission (\$1,767), rather than for the mother (\$370).

For women with higher depression scores (≥ 12 EPDS), combined medical costs were not significantly higher statistically (\$133 vs. \$128); however, pediatrician costs were higher and community nursing costs much higher (\$135 vs. \$81) per mother/infant dyad on average ($p < .01$). For women with EPDS scores of > 19 , community nursing care was three times higher (\$250 vs. \$84) per dyad. For mothers with depression ($p < .01$), social work costs were greater (\$11 vs. \$2). Of the women with an EPDS score ≥ 12 , only one was seeing a psychologist and one a psychiatrist; the latter was receiving psychotropic medication for a previously diagnosed bipolar disorder.

Table 4 *Average Costs of Care for Mothers and Infants in First 4 Weeks Postpartum*

	Total (\$)	Mothers with Depression (<i>n</i> = 86) (\$)	Mothers without Depression (<i>n</i> = 787) (\$)	Mann Whitney (<i>p</i>)
Nurse	86.3	134.5	80.8	.006*
Medical	128.2	132.8	127.6	.86
Pediatrician	10.1	16.1	9.5	.001*
Social work (mother)	3.5	11.1	1.8	.006*
Hospital (mother)	31.7	36.9	31.2	.86
Hospital (infant)	142.5	451.8	108.9	.73
All costs	455.0	845.0	413.0	.02*
*Statistically significant				

Conclusions

Infant re-admission to hospital constituted the greatest proportion of health-care costs in the 4 weeks following postpartum discharge, even though only 4% of infants were re-admitted. However, given the fact that infant health problems could have been identified and treated prior to early discharge, the total number of hospital days, and hence costs, for infants with identified problems may not have increased (Sword et al., 2000). The fact that physician and midwife care accounted for a high proportion of costs is not surprising and may reflect, in part, adherence to guidelines for infant follow-up. The CPS and SOGC recommend that all infants be seen by a qualified health-care provider within 7 days of birth, and that infants discharged within 48 hours of birth be seen within 48 hours of discharge (Fetus and Newborn Committee, 1996). Further research is needed to explain the inverse relationship between income and physician/midwife use.

The relationships between nursing costs and learning needs, self-reported health status, perception of help and support at home, EPDS score, and length of hospital stay suggest that mothers with specific postpartum needs are making appropriate use of the nursing services available to them in their communities. These relationships might be made clearer if future studies address the reasons for nursing visits as well as the reasons for the higher overall service utilization and costs

for women with family incomes under \$20,000 and women with clinical depression. The association between depression and service use, although not necessarily casual, is particularly interesting. The greatest cost differential was that for care provided by community nurses and social workers ($p < .01$). However, of the women who scored 12+ on the EPDS, only 22.2 to 30.8% reported that they had experienced an emotional or mental health problem since discharge, none reported seeing a mental health specialist or taking antidepressant medications, and none increased their use of medical care, which suggests that this health problem went unrecognized by the medical profession (Watt, Sword, Krueger, & Sheehan, submitted). The increase in nursing and social work costs but not in medical costs might reflect the fact that medical visits are regularly scheduled for newborn infants whereas visits by nurses and social workers are based on client need. It appears, from the results of this study, that nurses and social workers have an important role to play in case finding, referral, and provision of services for mothers with postpartum depression.

Although these findings have implications for policy-makers and health practitioners, there are limitations to the study. Because they are based on a consecutive sample of consenting women who had given birth to a live, singleton infant being discharged with the mother, the findings cannot be generalized to a wider population. In addition, the inter-site variability suggests that postpartum needs of mothers and infants vary across communities in Ontario. An additional limitation may be the measurement of service utilization; mothers had to recall every health and social service used in the previous 4 weeks.

The literature rarely addresses the postpartum utilization of health and social services. The findings of the present study are consistent with the finding reported for the United States and the United Kingdom that length of stay appears unrelated to total increased health-care costs in the early postpartum period. Although the present study found length of stay to be related to greater use of nurse visits, this utilization seems to be offset by less utilization of a combination of other health-care services. In addition, Hakansson et al.'s (1996) finding of a relationship between lower income and health-care costs over an 18-month period supports the present finding of a relationship between poverty and increased health-care costs in the first 4 weeks postpartum.

This study was completed prior to implementation of the Hospital Stay and Postpartum Home Visiting component of the Healthy Babies, Healthy Children Program in Ontario. The goal of this program is to provide all women the option of a 60-hour postpartum stay, a phone

consultation with a public health nurse within 48 hours of discharge, and a home visit by a public health nurse. Although this initiative has the potential to address needs and enhance linkages to various community-based services, it is unclear what the effect might be on overall health and social service utilization.

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