J Obstet Gynecol Cancer Res. 2017 February; 2(1):e11209. doi: 10.5812/ogcr.11209.

Published online 2017 February 26. **Brief Report**

Determining the Amount of Subsidy Allocated to the Natural Childbirth Promotion Package in Health Transformation Plan and the Cesarean Section Rate in Kurdistan Province: A Brief Report

Shilan Amir Hosseini,[1] Bakhtiar Piroozi,[2,*] Mohammad Amerzade,[3] Hooman Ghasri,[4] Salah Aldin Farshadi,[5] Hossein Safari,[3] and Seyfollah Moradi[6]

[1]Treatment Deputy, Department of Health Economics, Kurdistan University of Medical Sciences, Sanandaj, Iran
[2]Social Determinant of Health Research Centre, Kurdistan University of Medical Sciences, Sanandaj, Iran
[3]Department of Health Services Management and Economics, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran
[4]Treatment Deputy of Kurdistan University of Medical Sciences, Sanandaj, Iran
[5]Treatment Deputy, Department of Health Economics, Kurdistan University of Medical Sciences, Sanandaj, Iran
[6]Support and Resources Deputy of Kurdistan University of Medical Sciences, Sanandaj, Iran

[*]*Corresponding author*: Bakhtiar Piroozi, PhD in Health Policy, Social Determinant of Health Research Centre, Kurdistan University of Medical Sciences, Sanandaj, Iran. Tel: +98-873323555, E-mail: bpiroozi@gmail.com

Received 2017 February 26; **Accepted** 2017 March 18.

Abstract

Background: Since April 22, 2014, the natural childbirth promotion package has been implemented in the form of the Health Transformation Plan (HTP) to decrease the cesarean section rate in Iran. This study aimed to determine the amount of subsidy allocated to the natural childbirth package and to examine its effects on the cesarean section rate in hospitals affiliated with Kurdistan University of Medical Sciences (KUMS), Kurdistan Province, Iran.

Methods: This is a descriptive study implemented by retrospective and longitudinal design. The population in this study to determine the budget amount allocated to "childbirth promotion package" and all mothers that had natural childbirth deliveries from May 5, 2014 (beginning of HTP) to September 2015 in hospitals affiliated with KUMS. Study populations to determine the C-section ratio included all mothers who had deliveries in hospitals affiliated with KUMS from December 2012 to May 4, 2014 (before HTP) and from May 5, 2014 to September 2015 (after HTP). Using a checklist, the required data was collected from the Statistics and Health Economics Department of Treatment Deputy of KUMS. Afterwards, the obtained data were described using the descriptive statistical indicators including frequency, percent, and mean via Microsoft Excel 2013 (Microsoft Corp., Redmond, WA, USA).

Results: Since the beginning of implementing the natural childbirth promotion package until September 21, 2015, a total of 23 566 mothers had natural childbirth deliveries in the hospitals affiliated with KUMS. These mothers benefited from a total amount of 23 939 046 090 IRR provided by the natural childbirth package. In addition, the cesarean ratio has decreased 7% after implementing HTP.

Conclusions: It seems that HTP caused for the cesarean ratio to decrease in hospitals affiliated to KUMS. Further studies are recommended to determine the causality between a decrease in cesarean rate and HTP.

Keywords: Cesarean Section, Health System Reforms, Health Expenditure

1. Introduction

According to the world health organization, the rate of cesarean sections should not exceed to 15 per 100 live births (1). However, the cesarean section rate is dramatically increasing around the world (2-4). Iran is among the countries with cesarean section rates higher than 15%. Over the past two decades, a rapid increase in the number of C-sections has occurred in the Islamic Republic of Iran. From 2000 to 2009, in Iran, the cesarean section rate had increased from 35% to 48% (5). In 2008, 373 372 unnecessary cesarean sections with the estimated cost of more than $108 million were performed in Iran (1).

In Iran, the high cesarean section rate and its growing trend in recent years required special measures taken to control and decrease this rate. In this regard, from May 4, 2014, the eleventh government has implemented the Health Transformation Plan (HTP) in all university hospitals around the country. Three phases of this plan have previously been implemented. The first and second phases of this plan include 7 implementation packages and 1 regulatory package (6). One of these packages is the natural childbirth promotion package. Based on this package, all hospitals affiliated to the ministry of health and medical education is required to decrease the C-section rate. To this end, to encourage mothers to have natural childbirth

Copyright © 2017, Journal of Obstetrics, Gynecology and Cancer Research. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (http://creativecommons.org/licenses/by-nc/4.0/) which permits copy and redistribute the material just in noncommercial usages, provided the original work is properly cited.

deliveries and to reduce costs imposed on them, all natural childbirth deliveries are free of charge and a mother's share (franchise) is paid through the subsidy allocated to this package. Furthermore, to increase physicians' incentives for performing natural childbirth deliveries, the tariff on a natural childbirth delivery was increased, such that before implementing the health transformation plan, the tariff on a natural childbirth delivery conducted by a physician was 15 k. However, in the period from May 4, 2014 to September 22, 2014, a total of 30 k was added to physicians' fees to encourage them to perform natural childbirth deliveries and this tariff reached a total of 45 k. Through implementing the third phase of this plan from September 22, 2014, the total tariff on natural childbirth was increased to 50 k (7, 8).

This study aimed to examine the amount of subsidy allocated to the natural childbirth promotion package and the number of mothers who benefited from it in 2014 - 2015 as well as C-section rate before and after implementing HTP in the Kurdistan Province.

2. Methods

This is a descriptive study implemented by retrospective and longitudinal design. The population in this study to determine the budget amount allocated to the "childbirth promotion package" was all mothers that had natural childbirth deliveries from May 5, 2014 (beginning of HTP) to September 2015 in hospitals affiliated with Kurdistan University of Medical Sciences (KUMS) (9 hospitals). Additionally, the study population to determine a C-section ratio included all mothers who had deliveries in hospitals affiliated to KUMS (9 hospitals) from December 2012 to May 4, 2014 (before HTP) and from May 5, 2014 to September 2015 (after HTP). Using a checklist, the required data were collected from the Statistics and Health Economics Department of Treatment Deputy of KUMS. Afterwards, the obtained data were described using the descriptive statistical indicators including frequency, percent, and mean via Microsoft Excel 2013 (Microsoft Corp., Redmond, WA, USA).

3. Results

According to the results obtained from the present study, since the beginning of implementing the natural childbirth promotion package in the form of the Health Transformation Plan (HTP) on May 4, 2014 till September 21, 2015, a total of 23 566 mothers had natural childbirth deliveries in the hospitals affiliated with Kurdistan University of Medical Sciences and benefited from the subsidy allocated to natural childbirth deliveries with a total amount of 23939046090 IRR (Table 1). Moreover, during the period under study, before and after the implementation of the natural childbirth promotion package, C-section rates were respectively 38.8% and 31.9% (Table 2).

4. Discussion

Given the results obtained from the current study, implementing the natural childbirth promotion package decreased the caesarean section rate by 7% compared to the same period of time before implementing the HTP. According to the statistics released by the Ministry of Health and Medical Education, the C-section rates in 2005, 2007, and 2009 were respectively 27.2%, 33%, and 35.1% in the Kurdistan Province. This indicated the growing trend of the C-section rate in the Kurdistan Province in the recent years (5). Since the beginning of implementing the natural childbirth promotion package on May 4, 2014 until September 21, 2015, a total of 23 566 mothers had free natural childbirth deliveries in the hospitals affiliated with KUMS and each mother benefited from a total amount of 101583 IRT provided by this package. A study carried out in South Korea by Kim et al. demonstrated that increasing the tariffs on natural childbirth deliveries significantly decreased the C-section rate in this country (9). Another study conducted by Gruber et al. in America, revealed that the method of paying obstetricians' and gynecologists' fees had a great impact on their professional behaviors (10).

Table 1. The Amount of Subsidy Allocated to the Natural Childbirth Promotion Package and the Number of Mothers Who Benefited From it in Kurdistan Province

Year	Month	Number of C-Sections	Number of Natural Childbirth Deliveries	Amount Contributed by Insurance Companies for Natural Childbirth (IRT)	Amount of Subsidy Allocated to the Natural Childbirth Promotion Package (IRR)
2014	Ordibehesht (Apr 20 - May 19)	305	673	256540528	438357150
	Khordad (May20 - Jun 20)	589	1315	610742501	1786743640
	Tir (Jun 21 - Jul 21)	605	1485	696344259	1761902420
	Mordad (Jul 22 - Aug 21)	549	1472	746366811	2373935610
	Shahrivar (Aug 22 - Sep 21)	566	1410	701744057	1854085700
	Mehr (Sep 22 - Oct 21)	628	1329	1290822206	1463248130
	Aban (Oct 22 - Nov 20)	602	1341	1347846651	1544414540
	Azar (Nov 21 - Dec 20)	650	1308	1551454018	1186530480
	Dey (Dec 20 - Jan 19)	638	1329	1654711944	1180309700
	Bahman (Jan 20 - Feb18)	701	1322	1497793829	1087088130
	Esfand (Feb 19 - Mar 20)	734	1345	1596567581	1226956390
2015	Farvardin (Mar 20 - Apr 19)	718	1446	1724582527	1253766760
	Ordibehesht (Apr 20 - May 19)	719	1589	1908631308	1338911300
	Khordad (May20 - Jun 20)	751	1550	181050836	1315932250
	Tir (Jun 21- Jul 21)	731	1583	1976272690	1397192010
	Mordad (Jul 22 - Aug 21)	808	1576	1921927146	1379987520
	Shahrivar (Aug 22 - Sep 21)	765	1493	1868294921	1349684360
Total	11059	23566	23161148813	23929046090	

Table 2. The C-Section Rate in the Hospitals Affiliated to Kurdistan University of Medical Sciences Before and After Implementing the Health Transformation Plan

Period of Time	Total Number of Deliveries	Number of C-Sections	Frequency of C-Sections
From 21 December 2012 till 3 May 2014	31869	12365	38.8
From 4 May 2014 till 21 September 2015	34625	11045	31.9

Acknowledgments

This article was derived from a research project approved by the Research Deputy of Kurdistan University of Medical Sciences under the number of 1395.3 and was conducted through applying financial supports provided by this university.

References

1. Gibbons LJM, Belizan JA, Lauer AP, Betran M, Merialdi F. Althabe, The global numbers and costs of additionally needed and unnecessary caesarean sections performedper year: overuse as a barrier to universal coverage. World health report; 2010. pp. 1–31.
2. Joesch JM, Gossman GL, Tanfer K. Primary cesarean deliveries prior to labor in the United States, 1979-2004. *Matern Child Health J.* 2008;**12**(3):323–31. doi: 10.1007/s10995-007-0255-7. [PubMed: 17647096].
3. Baldo MH. Caesarean section in countries of the Eastern Mediterranean Region. *East Mediterr Health J.* 2008;**14**(2):470–88. [PubMed: 18561740].
4. Stavrou EP, Ford JB, Shand AW, Morris JM, Roberts CL. Epidemiology and trends for Caesarean section births in New South Wales, Australia: a population-based study. *BMC Pregnancy Childbirth.* 2011;**11**:8. doi: 10.1186/1471-2393-11-8. [PubMed: 21251270].
5. Bahadori F, Hakimi S, Heidarzade M. The trend of caesarean delivery in the Islamic Republic of Iran. *Eastern Mediterranean Health J.* 2013;**19**(2):1.

6. Piroozi B, Moradi G, Nouri B, Mohamadi Bolbanabad A, Safari H. Catastrophic Health Expenditure After the Implementation of Health Sector Evolution Plan: A Case Study in the West of Iran. *Int J Health Policy Manag.* 2016;**5**(7):417–23. doi: 10.15171/ijhpm.2016.31. [PubMed: 27694669].
7. Moradi-Lakeh M, Vosoogh-Moghaddam A. Health Sector Evolution Plan in Iran; Equity and Sustainability Concerns. *Int J Health Policy Manag.* 2015;**4**(10):637–40. doi: 10.15171/ijhpm.2015.160. [PubMed: 26673172].
8. Piroozi B, Moradi G, Esmail Nasab N, Ghasri H, Farshadi S, Farhadifar F. Evaluating the effect of health sector evolution plan on cesarean rate and the average costs paid by mothers: A case study in Kurdistan province between 2013-2015. *J Hayat.* 2016;**22**(3):245–54.
9. Kim SJ, Han KT, Kim SJ, Park EC, Park HK. Impact of a diagnosis-related group payment system on cesarean section in Korea. *Health Policy.* 2016;**120**(6):596–603. doi: 10.1016/j.healthpol.2016.04.018. [PubMed: 27173768].
10. Gruber J, Kim J, Mayzlin D. Physician fees and procedure intensity: the case of cesarean delivery. *J Health Econ.* 1999;**18**(4):473–90. [PubMed: 10539618].