International Journal of Integrated Care
ISSN 1568-4156
Volume 15, 27 May 2015
Publisher: Uopen Journals
URL: http://www.ijic.org
Cite this as: Int J Integr Care 2015; Annual Conf Suppl; URN:NBN:NL:UI:10-1-117107

Poster Abstract

The impact of creating vertically integrated organizations on hospital inpatient use

Rui Manuel Santana, *Escola Nacional de Saúde Pública,Universidade Nova de Lisboa, Portugal*

Miguel Ferreira, *Nova School of Business and Economics, Portigal*

João Sarmento, *Escola Nacional de Saúde Pública, Universidade Nova de Lisboa, Portugal*

Ana Patricia Marques, *Escola Nacional de Saúde Pública, Universidade Nova de Lisboa, Portugal*

Rosa Matos, *The Portuguese Association for Integrated Care, Portugal*

Julian Perelman, *Escola Nacional de Saúde Pública, Universidade Nova de Lisboa, Portugal*

Correspondence to: ***Rui Manuel Santana,*** Escola Nacional de Saúde Pública, Universidade Nova de Lisboa, Portugal, *E-mail: ruisantana@ensp.unl.pt*

Abstract

Introduction: One of the most recent important policy reforms in the Portuguese healthcare sector was the creation of seven new vertically integrated organizations, known as Local Health Units (LHU). These organizations are responsible for primary and secondary levels of care, providing comprehensive healthcare services on a population based approach. Currently LHUs cover approximately 12% of the total population and have a global yearly budget of 650 million euros.

Theory/ Methods: Despite the lack of evidence about the empirical benefits of integrated care, it is recognized that more integrated organizations achieve improvements on healthcare outcomes. The perceived advantages of creating vertically integrated organizations are: a)the capacity to integrate the decision making process throughout the continuum of care; b)the possibility to encourage health promotion; c) the elimination of redundancies between levels of care, and d) the reduction of more costly interventions.

The study focuses on inpatient use due to their high relevance and cost. Therefore, the main objective is to evaluate the impact of creating vertical integrated health care units on inpatient use in Portugal. We selected three inpatient hospital indicators: volume of cases, case-mix index (CMI) and length of stay (LOS).

The data source was the national hospital discharge database from 2002 to 2013 (n=15.653.463).

The data was aggregated by Diagnosis Related Group or principal diagnosis, year and hospital/LHU (panel data). The admissions of LHUs' patients occurring outside the LHU were attributed to the respective hospital.
To control the differences between LHUs and non-LHUs time trend, the following difference in difference (DID) models were estimated:
〖LOS〗_gth=β_0+β_1 〖age〗_dht+β_2 〖sex〗_dht+β_3 〖Post〗_dht+β_4 〖ULS〗_dht+β_5 〖ULS〗_dht*〖Post〗_dht+e_dht
〖Volume〗_gth=β_0+β_1 〖age〗_ght+β_2 〖sex〗_ght+β_3 〖Post〗_ght+β_4 〖ULS〗_ght+β_5 〖ULS〗_ght*〖Post〗_ght+e_ght
〖Casemix〗_th=β_0+β_1 〖age〗_ht+β_2 〖sex〗_ht+β_3 〖Post〗_ht+β_4 〖ULS〗_ht+β_5 〖ULS〗_ht*〖Post〗_ht+e_ht
where
〖LOS〗_(g/dth): average length of stay of patients treated in DRG g/principal diagnosis d, hospital/LHU h in year t;
〖Volume〗_gth: total production in DRG g, hospital/LHU h in year t;
〖Casemix〗_th: average casemix in hospital/LHU h in year t;
〖age〗_gth: average patients' age;
〖sex〗_gth: average patients' sex;
〖Post〗_ght: Equals 1 in the year of creation of the LHU and henceforth;
〖ULS〗_ght: Equals 1 if LHU;

The DID was used to isolate the differences between the LHUs, before and after integration, and all the other non-LHU hospitals.

Results: Even though the results are not all statistical significant, it can be sustained that when comparing LHUs and non-LHUs, the hospital inpatient use in the last decade shows a slighter reduction trend in volume of cases and LOS on the LHU universe. This varies between the LHUs.

Discussion: The results seem to indicate an improvement on hospital inpatient use in the LHU universe. Several arguments can contribute to explain these results, increased access, better primary care or shifting treatment to ambulatory care. The results may also reflect undesired situations as inadequate inpatient practices, or lack of access. The explanation is therefore complex and multifactorial.

Lessons Learned: Despite there is more perception than evidence concerning integrated care results, in this case, there is evidence of a favorable change in the behavior of LHUs in inpatient use (measured by volume of cases, CMI and LOS) when compared with non-LHUs.

Limitations and suggestions for future research: The LHUs have different times of existence. The results could therefore be biased due to the different maturity of the integration process. In fact, previous studies indicate differences on the degree of integration of the LHUs (as perceived by their staff), specifically in the important clinical and information integration dimensions.

This study focused on inpatient use mainly due to ease of access to the information. To understand the big picture, future studies should analyze the time trend evolution of ambulatory care and primary care, or other important dimensions like quality of care or access to healthcare facilities.

Conclusion: The recent development of the LHU model in Portugal is an example of vertically integrated organizations. The main objective of the study was to evaluate the impact of creating vertical integrated health care units on hospital inpatient use. A panel data for the last decade was uses and a DID method operationalized the study. The LHUs reduced the hospital inpatient use after integration, when compared with non-LHU hospitals. Further investigation should be performed to understand the causes of these findings.

Keywords

integrated care; local health units; trend evolution; inpatient use

---

PowerPoint presentation

http://integratedcarefoundation.org/resource/icic15-presentations