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Doctors' experience of coordination across care levels and associated factors. A cross-sectional study in public healthcare networks of six Latin American countries

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ABSTRACT

Improving coordination between primary care (PC) and secondary care (SC) has become a policy priority in recent years for many Latin American public health systems looking to reinforce a healthcare model based on PC. However, despite being a longstanding concern, it has scarcely been analyzed in this region. This paper analyses the level of clinical coordination between PC and SC experienced by doctors and explores influencing factors in public healthcare networks of Argentina, Brazil, Chile, Colombia, Mexico and Uruguay. A cross-sectional study was carried out based on a survey of doctors working in the study networks (348 doctors per country). The COORDENA questionnaire was applied to measure their experiences of clinical management and information coordination, and their related factors. Descriptive analyses were conducted and a multivariate logistic regression model was generated to assess the relationship between general perception of care coordination and associated factors. With some differences between countries, doctors generally reported limited care coordination, mainly in the transfer of information and communication for the follow-up of patients and access to SC for referred patients, especially in the case of PC doctors and, to a lesser degree, inappropriate clinical referrals and disagreement over treatments, in the case of SC doctors. Factors associated with a better general perception of coordination were: being a SC doctor, considering that there is enough time for coordination within consultation hours, job and salary satisfaction, identifying the PC doctor as the coordinator of patient care across levels, knowing the doctors of the other care level and trusting in their clinical skills. These results provide evidence of problems in the implementation of a primary care-based model that require changes in aspects of employment, organization and interaction between doctors, all key factors for coordination.

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1. Introduction

The coordination of health care between care levels lies at the heart of the current strategy of the Pan-American Health Organization for improving primary care and the services integration policies adopted by numerous Latin American governments in recent years (PAHO, 2010). Among other aspects, they aim to strengthen the model based on primary care, which acts as coordinator in the care of the patient along the continuum of the health services in the network (PAHO, 2010). In this model, information transfer, adequate and timely access between care levels, and agreement on the clinical management of patients are key to providing quality care and preventing inefficiencies and discontinuity of care, especially for those patients with chronic conditions who tend to use a greater array of services (Mehrotra et al., 2011).

The improvement of care coordination between care levels, i.e. primary care (PC) and secondary care (SC), is a longstanding concern in Latin American health systems, which is evidenced by successive attempts to organize the referral system and make the health services function as a network (Giovanella et al., 2015). Existing evaluations, which are scarce, point to limited coordination in the health services networks due to the deficient transfer of clinical information between levels (Harris et al., 2007; Vargas et al., 2015); some highlight difficulties in access to SC for referred patients (Garcia-Subirats et al., 2014) and, to a lesser extent, disagreement over treatments or referrals (Pardo et al., 2008; Ramírez, 2009). Studies are needed on care coordination between levels that consider the different types and dimensions and explanatory factors, as these are almost inexistent for Latin America (Turci et al., 2015; Vargas et al., 2016).

This study is part of a wider research project (Vazquez et al., 2015), which aims to evaluate the effectiveness of a participatory shared care strategy in improving coordination across care levels in health services networks in six different healthcare systems of Latin America. The aim of this paper, that presents the comparative results of the baseline, is to determine the level of clinical coordination between PC and SC experienced by doctors and to explore influencing factors in public healthcare networks of Argentina, Brazil, Chile, Colombia, Mexico and Uruguay.

1.1. The conceptual framework

There has been an extraordinary increase in publications on care coordination in recent years, but the lack of consensus on definitions remains (Shultz and McDonald, 2014). Many of them are limited to particular patient populations, settings, transitions or types of coordination. This study adopts the broad definition of Longest and Young (2000): care coordination is the harmonious connection of the different services needed to provide care to a patient along the care continuum in order to achieve a common objective without conflicts. Although coordination of care may also involve social services and require the coordination of other activities such as administrative procedures, this paper focuses specifically on clinical care coordination. Two interrelated types of clinical coordination are distinguished (Aller et al., 2015; Vazquez et al., 2015): *clinical information coordination*, which refers to the use of patients' clinical information in order to harmonize activities between providers, and consists of two dimensions, transfer of clinical information and its use; and *clinical management coordination*, which refers to the provision of care in a sequential and complementary way by the different services and healthcare levels involved; it encompasses three dimensions, care coherence, follow-up and accessibility across levels of care.

The development of theoretical frameworks to guide the analysis of factors influencing coordination across care levels is limited (Ovretveit, 2011). From the empirical studies on factors that influence coordination, most of which use qualitative methods, two types can be distinguished: a) *organizational factors*, such as the existence of certain types of coordination mechanisms across care levels or having enough time to use them (Andvig et al., 2014; Fleury et al., 2012); and b) *factors related to professionals*, such as values and attitudes towards coordinating care and knowing the professionals of the other care level (Berendsen et al., 2006). *Contextual* or health system factors related to coordination across care levels have scarcely been explored (Vargas et al., 2016).

1.2. Public healthcare subsystems in the study countries

The study countries are classified as high income (Argentina, Chile and Uruguay) and upper middle income (Brazil, Colombia and Mexico), but have large socioeconomic and health inequalities (ChartsBin statistics collector team 2016) and, with the exception of Uruguay (1027$), low levels of public health expenditure per capita: 335$ in Argentina, 436$ in Brazil, 563$ in Chile, 428$ in Colombia, and 351$ in México (OECD, 2014).

Although the models vary, these countries have health systems that are segmented by population groups according to socioeconomic or employment status (Atun et al., 2015; Londoño and Frenk, 1997), with a public subsystem and a private one. The public sector is financed by social security contributions and/or taxes. It encompasses at least one subsystem dependent on the ministry of health, which is decentralized to different levels of government (departments/provinces and/or municipalities) and is generally aimed at the lower income population and/or those without social security. This study is focused on this public subsystem.

The proportion of covered population – estimated from the figures of enrollees in the public subsystem under study or in the other subsystems - varies depending on the country: in Chile (FONASA) and Brazil (SUS) it is high, with 73% and 75% respectively, in Mexico (Health Department/public health insurance) 58.4%, in Uruguay (ASSE) 36%, in Argentina (provincial and municipal health departments) 36%, and in Colombia 53.7%, taking into account that these services provide care for the uninsured population and those enrolled in the subsidized scheme (ANS, 2016; INDEC, 2010; INEGI, 2014; Ministerio de Salud y Protección Social. Colombia, 2015; Ministerio de Salud. Uruguay, 2016).

The public healthcare subsystems in the study countries have significant similarities. They have national policies or programs fostering integrated healthcare networks, with diverse degrees of ambition and specificities (Vazquez et al., 2015). Healthcare provision is organized in networks of providers, mainly public (except in Colombia), but also private (except in Mexico). In all six countries, the norms envisage health care organized by levels of complexity, with PC as the entry point and coordinator of patient care and SC care in a supporting role, requiring a referral from PC for access to the specialist (Giovanella et al., 2015).

2. Methods

2.1. Study design and study areas

A cross-sectional study was carried out based on a survey of doctors in Argentina, Brazil, Chile, Colombia, Mexico and Uruguay. The study area in each country was made up of two public health services networks, selected according to the municipalities or region in which participating universities were located (except for in Uruguay): Argentina, south/southern and north/north-western districts of Rosario; Brazil, Districts III and VII in Recife and the urban area of Caruaru; Chile, the southern and northern networks of Santiago, encompassing three districts; Colombia, south-western