Innovation and Quality Health Services: a Brazilian Experience

Eric Dorion (edorion@ucs.br)
University of Caxias do Sul, Francisco Getúlio Vargas, 1130 – Petrópolis
Caxias do Sul, 95070-560, Brazil

Cristine Hermann Nodari
University of Caxias do Sul, Francisco Getúlio Vargas, 1130 – Petrópolis
Caxias do Sul, 95070-560, Brazil

Pelayo Munhoz Olea
University of Caxias do Sul, Francisco Getúlio Vargas, 1130 – Petrópolis
Caxias do Sul, 95070-560, Brazil

Eliana Andrea Severo
University of Caxias do Sul, Francisco Getúlio Vargas, 1130 – Petrópolis
Caxias do Sul, 95070-560, Brazil

Julio Cesar Ferro de Guimaraes
University of Caxias do Sul, Francisco Getúlio Vargas, 1130 – Petrópolis
Caxias do Sul, 95070-560, Brazil

Abstract
This article explores the possibility of integration between the themes of healthcare service and innovation through the analysis of the variables of quality in Primary Care. It highlights the debate about the quality of services, the health practices and the innovations implemented to stimulates quality in services and health practices.

Keywords: Innovation, Primary Care, Quality Health Services

Introduction

The Brazilian Constitution of 1988 calls for the amplitude of the right to health in order to achieve the welfare and social good, by ensuring universal access to health services and actions, contextualized through the *municipalization* of services. Inserted in a *municipalization* context, those actions are organized in the form of integrated healthcare networks, presenting as a core manager to Primary Care (PC). Then the PC represents a form of organization of health services that responds to a specific health care structure with its own values, principles and elements that act as a regulator of an indiscriminate and marketing of health services, characterized as the "first gate" of the system health for the health actions (STARFIELD, 2002; COOPER, 2008).

Innovation is described by Tidd, et al. (2005) as the key process associated with a renewal within the organization, which revives what it has to offer and, how it creates and

distributes such offer. Thus, the organisations are forced to innovate to gain a differential, suggesting a dynamic organization in a complex network of relationships, knowledge production; as essential elements for the economic and social development of a region. Innovative organizations are the ones that offer new products and adopt or put in place new processes or services as a means to add value and reduce costs.

According to the Oslo Manual (2005), innovation can occur in any sector of the economy, including government services, such as health and education and is a synonym for change. Thus, this paper explores the possibility of integration between the dimensions of innovation and the variables of the Primary Care Assessment Tool that characterize the quality of service.

Theory

The concept of innovation

For Dosi (1982), the concept of innovation refers to the search, discovery, experimentation and adoption of new products, processes and new organizational forms. Hesselbein (2002) asserts that innovation is identified as a change that creates a new dimension of performance. This change may come from a new idea, which may be the result of a recombination of old ideas, in a scheme that challenges the present order, or else, a formula or approach that is perceived as new by the actors involved.

In the area of health services, it is observed that innovations are also influenced by the actors that constitute their source of funding from either types: products or services, case management (organizational - the mental process) and marketing (competitive position) (Bessant and Tidd, 2007). These categories are also corroborated by the Oslo Manual (2005).

According to Gallouj (1997), the classification of the method of the Oslo Manual brings results interpretation problems, by presenting restrictive settings to the industrial sector, and by turning itself to technological innovations. However, embracing the context performed on the dimensions of innovation and by representing the main guidelines for collecting and interpreting innovation data, this classification was selected for this study.

Primary Care

According to Starfield (2002), Primary Care is a differentiated conception of Health System. In Brazil, it can be considered that the health system is in tune with the PC, from the moment that an institution has identified its values and principles, through the guidance of the national health priorities, according to the Federal Constitution of Brazil in 1988. In other words, it is a Unified Health System (UHS), aimed to emphasize social equity, universality and comprehensiveness of health (Mendes, 2007).

As a result of the growing evidence that the PC concept is decisively contributing to improve health outcomes of populations, Starfield et al. (2001) developed and validated an instrument called Primary Care Assessment Tool (PCATool), which constitutes an assessment of the structure and processes of the services provided in health care. This questionnaire assesses how health services are geared towards the defining attributes of PC, in four essential and three derived attributes that represent the working process of the structure of health care.

Mendes (2007) states that the Basic Health Units (BHU) represent the consolidation local for the PC communication, because it is understood that it corresponds to the first step in the health service process therefore, the first contact with the health problems of the population. In Brazil, since the organization of PC is delegated to Municipal Management and the transfers of Federal funds are automatic, its main strategy of revitalization is the Family Health Strategy (FHS), which was introduced in 1994, denominated under the term Family Health Program (FHP), which has received significant financial incentives aimed at

expanding the population coverage and care reorganization.

Thus, from the theoretical framework, it was possible to highlight an approximation of the different dimensions of the variables that establish a list of studies about innovation and the score PCATool for PC in Caxias do Sul, as presented in Table 1.

Table 1 – Research variables

	Research Variables	Highlighted Concepts	Source Consulted
PCATOOL	Access	Unit accessibility. Access to care. Use the unit as a place of first contact.	STARFIELD (1994), STARFIELD; SHI; JIAHONG (2001), VUORI (1992), WORLD HEALTH ORGANIZATION (2005), MENDES (2007), MACINKO; ALMEIDA (2004), HEALTH EVIDENCE NETWORK (2004), EXTER; HERMANS; DOSLJAK, BUSSER (2004)
	Longitudinality	Definition of elective population. Knowledge of the patient and its social environment. Extent and strength of the relationship with patients.	
	Coordination	Mechanisms for continuity. Recognition of information and prior consultation and of referral.	
	Integrality	Spectrum of services available. Primary and secondary preventive activities. Recognition and management of health problems.	
	Family orientation	Knowledge of family members and health problems of the family.	
	Community orientação	Knowledge of the health needs of the community. Participation in community activities.	
	Cultural Competence	Special needs treatment associated with the cultural characteristics. Provision of special services to meet the cultural characteristics.	
INNOVATION	Product (Good or service)	Introduction of a new good or service or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, ease of use, or other functional characteristics.	MANUAL DE OSLO (2005), AHMED (2001), DAMANPOUR; SZABAT; EVAN (1989), HESSELBEIN (2002), MALERBA (2001), TIDD; BESSANT; PAVITT (2005)
	Process	Implementation of a new method of production or distribution or significantly improved. This includes significant changes in techniques and equipment.	
	Marketing	Implementation of a marketing method with significant changes in product design or packaging, product positioning in its promotion or pricing.	
	Organizational	Implementation of an organizational method in business practices of the institution, organizing the workplace and its external network.	

Method

In the previous phase of this article, the data used for analysis was constructed from a

case study, in two phases: qualitative and quantitative. The qualitative phase aimed to explore and compare the theory with practice, provided a greater familiarity with the problem. Based on Yin (2005), were used the following data collection instruments for the qualitative survey: literature search, registry files in the Municipal Health Secretariat of Caxias do Sul, semi-structured interviews with managers of BHU, observation and analysis of other documents such as meeting minutes and reports. Thus it was possible to identify a number of innovations in accordance with the classification of the Oslo Manual (2005). The data was treated with content analysis according to Bickman and Rog (2009).

In the quantitative phase, was used a closed-ended questions questionnaire, which allowed a rigorous analysis from which measurements are free from random errors. Robson (2011) points out that a quantitative research is a social research method that uses statistical techniques that typically involves the construction of questionnaire surveys. Based on the method theory, in PCATool, the scores for each attribute are constructed from the arithmetic mean of the responses and then standardized on a scale of 0 to 10. The mean score per attribute provides an overall score of the service orientation for PC. This score has been awarded the threshold of 6.6; where exceeding this value, it represents a higher score and, where being less than that amount, it is classified as a lower score (Starfield et al., 2001).

It is noteworthy that the data collection instrument, composed by semi-structured interviews and questionnaires, was firstly applied in a pre-trial pattern with specialists, and subsequently validated with the Municipal Health Service (MHS), in order to check for clarity information described, understanding and consistency of responses. Furthermore, the results regarding the classification of innovations also obtained validation with experts from the MHS of Caxias do Sul.

Thus, from a population of 41 BHU that comprise the whole Healthcare System of Caxias do Sul, it was selected a sample of 15 BHU, all of which with an active FHS program; and making possible the conduction of this study.

Therefore, to consolidate the attributes identified in the qualitative phase for the identification of the variables for this research; were realized in this second phase, statistical analyzes based on the linear correlation coefficient of Pearson (r), to measure the strength and the direction of the linear relationship between both variables, and the coefficient of determination (r^2) and linear regression, in order to identify the strength of the relationship between the variables selected for this study and the influence of one variable on another (Hair Jr. et al., 2006). The dependent variables refer to product innovation, process, organizational and marketing, and the independent variables refer to access, longitudinality, coordination, comprehensiveness, family counseling, community orientation and cultural competence. The tabulation and data processing of inferential statistics were performed from the computerized statistical package SPSS version 19. S.

Analysis and Discussion

Characteristics of the PC of Caxias do Sul

The city Caxias do Sul is the home of the headquarters of the administrative facilities of the 5th Regional Health Coordination (RHC), which is responsible for the activities in all the 48 municipalities of the State of Rio Grande do Sul, covering 28 hospitals that perform calls from UHS, for a total population of 1,513,884 inhabitants. It constitutes a reference center of in health care for the northeastern state of Rio Grande do Sul (Claus and Capra, 2002).

From the 41 BHU distributed in the municipality, the current network allows access to medium and high complexity, which previously was not available to UHS users, and carries an average of 15,000 visits / month. The client population in health services is registered in accordance with the guidelines of UHS through the use of a UHS card and must receive care

at the nearest BHU and FHS, according to the location of residence. In October 2009, the UHS database of the city of Caxias do Sul had 340,102 registered users.

Thus, the health network of Caxias do Sul, with its communication centre located and managed by BHU, constitutes an organization that corresponds to the reference and cross-reference flows governed by a demand originating from the local population, with specific reference centres such as: a) a management system that performs the care regulation and management through the Municipal Health Service; b) a support system that performs the additional services at the BHU, such as hospitals, pharmacy specialists, haemodialysis, and so on; c) a logistics system that performs a compilation of the population information through Information systems, Card user, Ambulance Central, and so on.

The population requiring health services is registered in accordance to the guidelines of Health System in Brazil, maintained by a health system card, and may have consultations in their closest BHU and according to the FHS, based on their address of residence.

Table 2 - Study variables through PCATool and Innovation

	Variables Analysis	BHU 1	BHU 2	BHU 3	BHU 4	BHU 5	BHU 6	BHU 7	BHU 8	BHU 9	BHU 10	BHU 11	BHU 12	BHU 13	BHU 14	BHU 15
PARTIAL SCORE OF THE *PCATOOL*	Access	2,33	1,89	2,33	2,44	3,11	2,78	2,11	2,44	3,67	3,11	2,11	2,33	3,00	3,56	2,56
	Longitudinality	2,38	2,62	2,38	2,62	3,00	2,85	2,46	3,38	3,38	3,23	2,46	3,00	3,23	4,00	2,54
	Coordination	2,86	2,62	2,54	2,93	3,54	2,93	2,79	3,35	3,10	2,62	2,60	3,03	3,22	3,15	2,94
	Integrality	3,32	2,71	3,18	3,32	3,63	3,31	2,98	3,70	3,33	2,71	3,16	3,53	3,25	3,19	3,25
	Family Orientation	3,43	2,21	2,64	2,86	2,93	3,07	3,07	3,79	3,21	2,21	2,79	3,71	3,07	3,50	3,07
	Communitary orientation	3,57	2,43	2,81	2,81	3,71	3,57	3,29	3,86	3,71	2,43	3,43	3,86	3,33	3,71	3,33
	Cultural Competence	2,57	2,14	2,14	2,57	3,43	3,43	3,71	3,71	3,57	2,14	3,71	3,29	3,14	3,00	3,14
QUANTITY OF INNOVATIONS	Product (good or service)	3	1	2	3	8	7	7	6	7	4	4	6	2	5	2
	Process	3	1	1	2	8	6	6	4	2	1	3	3	6	4	4
	Marketing	1	1	0	1	2	3	2	2	2	1	1	2	2	2	3
	Organizational	1	1	2	1	3	2	3	3	2	1	2	1	3	3	1

Statistical Analysis of Data Collection

Considering the analysis of the variable "number of innovations" and the variable "PCATool partial score" for the 15 BHU, it was possible to identify that from a level of significance of 5% (ρ-value <0.05), it was observed that the number of innovations have a strong positive relationship with the PCATool score, at r = 0.769 with a ρ-value = 0.0008. The coefficient of determination, which measures the mode of association between the variables presented in r^2= 0.5915, which indicates that for each unit of change of the variables contained in the PCATool score, it takes a change of 0.5915 (59.15%) in the number of innovations.

Table 3 - Simple Linear Regression Variables for Innovation and PCATool

Dependent variable	Product			Process			Marketing			Organization		
Independent variable	r	r^2	r^2 Adjusted	r	r^2	r^2 Adjusted	r	r^2	r^2 Adjusted	r	r^2	r^2 Adjusted
Access	0,4	0,2	0,1	0,1	0,3	-0,3	0,3	0,1	0,0	0,3	0,1	0,0
Longitudinality	0,4	0,1	0,0	0,1	0,1	-0,5	0,3	0,1	0,0	0,4	0,1	0,1
Coordination	0,5	0,3	0,2	0,6	0,4	0,4	0,7	0,5	0,5	0,5	0,3	0,2
Integrality	0,5	0,3	0,2	0,7	0,6	0,5	0,7	0,5	0,5	0,5	0,2	0,2
Family Orientation	0,4	0,1	0,1	0,3	0,1	0,6	0,4	0,2	0,1	0,3	0,1	0,0
Communitary Orientation	0,6	0,4	0,3	0,5	0,3	0,2	0,6	0,3	0,3	0,4	0,2	0,1
Cultural Competence	0,6	0,4	0,4	0,6	0,4	0,3	0,6	0,4	0,3	0,5	0,3	0,2

Table 3 summarizes the values of r, r^2 and adjusted r^2 of the intersection of the 11 variables. It can be noted from Table 3 that for the dependent variable "product innovation", the highest coefficient of determination performed is r^2 = 0.466, which refers to the independent variable cultural competence. It means that for each unit of change in cultural competence occurs one unit of change of 0.466 (46.60%) in product innovation.

For the dependent variable "process innovation", the highest percentage of variation found is explained by the independent variable integrality with r^2 = 0.608 (60.80%). For the dependent variable "innovation in marketing", the highest coefficient of determination performed is r^2 = 0.565, which indicates that for each unit of change in coordination is produced a unit of change of 0.565 (56.50%) of innovation in marketing. Finally, for the dependent variable "organization", the highest percentage of variation found is explained by the independent variable "cultural competence", with a r^2 = 0.329 (32.90%). For this evaluation, it is observed more homogeneous conditions of participation of the independent variables over the dependent variables.

From Table 3, the study highlights the inverse relationship of the dependent variable "innovation process" in relation to the independent variable scores and partial access "longitudinality (continuing care)", demonstrating that these independent variables have an inverse explanatory value on the dependent variable "process innovation".

It is also observed that for the analysis of the correlation coefficient squared adjusted (adjusted r^2), there is a confirmation of the analysis of the coefficient of determination (r^2), which indicates that the independent variable "cultural competence" has the greatest explanatory value in the dependent variable "product innovation" and is therefore relevant to their inclusion and participation in this analysis segregated. The same phenomenon can be observed for the independent variable "integrality" on the dependent variable "process innovation", for the independent variable "coordination" on the independent variable on the

dependent variable “innovation in marketing” and for the independent variable “cultural competence” on the dependent variable “organizational innovation”.

With the objective to understand how much the contribution of the independent variables has on the dependent variables, was sought to evaluate the slope of regression (B), which determines the variation in the dependent variable of a unit for each variation of the independent variable. Concomitantly, was established the significance of F, by testing the significance of the independent variable on the dependent variable, in order to demonstrate the behavior of the association and influence between them (Pestana and Gageiro, 2005). The data are shown in Table 4 with highlights on the significant results of correlation found previously.

Table 4 - Regression Coefficient and Significance of the variables “Innovation” and “PCATool”

Dependent variable	Product		Process		Marketing		Organization	
Independent variable	Coefficient B	Significance F	Coefficient B	Significance F	Coefficient B	Significance F	Coefficient B	Significance F
Access	0,230	0,900	0,099	0,481	0,199	0,151	0,185	0,222
Longitudinality	0,228	0,140	0,078	0,623	0,210	0,180	0,277	0,098
Coordination	0,516	0,310	0,615	0,006	0,702	0,001	0,566	0,030
Integrality	0,538	0,270	0,726	0,001	0,697	0,002	0,556	0,380
Family orientation	0,239	0,127	0,209	0,180	0,264	0,091	0,208	0,232
Communitary orientation	0,354	0,011	0,314	0,026	0,343	0,016	0,284	0,079
Cultural competence	0,312	0,005	0,293	0,009	0,299	0,009	0,286	0,025

With the dependent variable “product innovation”, it can be observed that when incremented a unit of the independent variable “cultural competence”, an increase of 0.312 units in “product innovation” occur (F = 0.005). With the dependent variable “process innovation”, it can be observed that when incremented a unit of the independent variable “integrity”, an increase of 0.726 units in “process innovation” occur (F = 0.001). With the dependent variable “innovation in marketing”, it can be observed that when incremented a unit of the independent variable “coordination”, an increase of 0.702 units in “innovation in marketing” occur (F = 0.001). With the dependent variable “organizational innovation”, it can be observed that when incremented a unit of the independent variable “cultural competence”, an increase of 0.286 units in “organizational innovation” occur (F = 0.025).

It is noteworthy that other relations and significant influences were evident, but to establish a joint analysis of simple linear regression, it was decided to approach the influence of greater significance between the crossings of the 11 variables.

Conclusion

The overall objective of this research was to identify an approximation of the elements that qualify a health service-oriented at PC through the use of the PCATool and the typology of innovations evidenced from several references. The study was conducted in the city of Caxias do Sul, as it constitutes itself as a benchmark of health services in the northeastern state of Rio Grande do Sul, featuring the special importance about the commitment and the efforts of the organisation in improving health services for the population since 1997.

Through a Pearson correlation analysis, the study of the 15 evaluated BHU

established that the higher the score of the PCATool in developing the quality of services provided to the population due to the essential attributes and derivatives, the largest number of innovations were found. This relation allowed to show that there is an evidence of association, in respect to the characteristics of each BHU; more specifically about the accessibility of services, continuing care for individuals, products and services offer to the population, the coordination at other levels of the health system, the FHS, the intervention of health services in the community and training team of BHU with the number of innovations highlighted.

Consequently, the analysis of the influence and specific relationship of the independent variable on the dependent variable led to a simple linear regression analysis; confirming the relationship of such variables: “cultural competence” and “product innovation”, “process innovation” and “integrality”, “coordination” and “innovation in marketing”, “cultural competence” and “organizational innovation”.

It was demonstrated that for “product innovations”, there is a significant influence of the derivate attribute “cultural competence”, of the PCATool. In other words, the increase of managerial training in the organization of the BHU and also the ability to offer special services to the enrolled population stimulate the increase of “product innovations”. Although there is a relationship with the essential attribute of “integrality”, which involves a variety of products and services available, it is with the “cultural competence” attribute where is found a significant influence for the introduction of “product innovations”.

Regarding the variable “process innovation”, it was established that significant influence occurs through an essential attribute of the variable “integrality”. In other words, an increase in the variety of services available for greater equality between the BHU that have the appropriate recognition pattern of the biological, psychological and social problems that cause diseases, responds strongly to the most common needs of the population for each BHU, and it demonstrates a strong organization that stimulates process innovations.

Noteworthy to highlight the inverse relationship of the variable “process innovation”, demonstrated by the analysis of the squared adjusted correlation coefficient, with the independent variable of “access to care” at the BHU and the “continued primary care” over the years. Thus, the stimulus of the variables “access and longitudinality” do not result in the increase of the variable “process innovation”. In other words, the development of initiatives such as the extension of hours of service to the population or the changes that enable agility in customer service, in view to accommodate all individuals, does not presuppose a larger increase in “process innovation”.

For the variable “marketing innovation”, it was observed that a significant influence on the essential attribute of the variable “coordination”, which means the integration capacity of the working team with the population, associated with a punctual system of information that leads the individuals to other steps of health care, presupposes an increase in innovations in marketing.

In regard to the variable “organizational innovation”, there was a significant influence on the derived attribute of the variable “cultural competence”. In other words, the increase in the provision for special services and the recognition of the needs of the population due to these special features, which involves a differentiated organizational arrangement for service delivery by the BHU assumes an increase in the variable “organizational innovation”.

Based on the theory, it aggregates the quality and the number of data available on innovation and PC, as a strategy within the public administration of health actions. Moreover, at the organizational level, the study contributes to stimulate the understanding of the opportunities for change that help to manage more efficiently the local health resources, the quality of services provided to the population. Those evidences allow corroborating the dynamic health care approach in the study of innovation, being fundamental to understand

health promotion policies, and consequently local development.

References

Ahmed, P.K. 2001. *Benchmarking Innovation Best Practice*. European Centre of Total Quality Management. University of Bradford, United Kingdom.

Bessant. J.; Tidd, J. 2007. *Innovation and entrepreneurship.* Chichester: West Sussex, England, John Wiley & Sons.

Bickman, L.; Rog, D. 2009. *The handbook of applied social research methods.* Los Angeles, CA: Sage Publications Inc.

Claus, S. M.; Capra, M. L. P. 2002. *Potencializando a Gestão para organizar o SUS a partir da Rede Básica.* 1. ed. Porto Alegre: Dacasa.

Cooper, R. G. 2008. Perspective: The Stage-Gate® Idea-to-Launch Process—Update, What's New, and NexGen Systems. *Journal of Product Innovation Management,* (**25**) 3: 213–232.

Damanpour, F.; Szabat, P.; Evan, C. J. 1989. The relationship between types of innovation and organizarional performance. *Journal of Management Studies,* (**26**) 6: 45-98.

Dosi, G. 1982. The nature of the innovative process. In: DOSI, Giovanni et al. *Technical change and economic theory.* London, Pinter.

Exter, A.; Hermans, H.; Dosljak, M.; Busse, R. 2004. *Health care systems in transition: Netherlands.* Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.

Gallouj, F. 1997. Towards a neo-schumpeterian theory of innovation in services? *Science and Public Policy,* (**24**)6: 405 -420.

Hair Jr.; et al. 2006. *Fundamentos de métodos de pesquisa em administração.* Porto Alegre, RS: Bookman.

Health Evidence Network. 2004. *What are the advantages and disadvantages of restructuring a health care system to be more focused on primary care services?* Copenhagen, World Health Organization.

Hesselbein, F. 2002. *Leading for Innovation.* San Francisco: Jossey-Bass.

Macinko, J. Almeida, C. 2004. Organization and delivery of primary health care services in Petropolis. Brazil. *International Journal of Health Planning and Management,* (**19**)4:303-17.

Malerba, F. 2001. Sectoral systems of innovation and production: concepts, analytical framework and empirical evidence. *Conference "The Future of Innovation Studies.* Eindhoven University of Technology, The Netherlands, 20-23 September.

Manual de Oslo. 2005. *The measurement of scientific and technological activities.*

Mendes, E. V.2007. *Redes de Atenção à Saúde.* Minas Gerais: Secretaria de Estado de Saúde de Minas Gerais.

Nodari, C.H.2010. Inovação Na Atenção Primária De Caxias Do Sul – RS *Dissertação* (Mestrado em Administração). Programa de Pós-Graduação em Administração, Universidade de Caxias do Sul, Caxias do Sul.

Pestana, M. H.; Gageiro, J. N. 2005. *Análise de dados para ciências sociais:* a complementaridade do SPSS. 4. ed. Lisboa: Sílabo.

Robson C. 2011. *Real World Research: a resource for users of social research methods in applied settings.* 3. ed. Chichester: West Sussex, England, John Wiley & Sons.

Starfield, B. 1994. Is primary care essential? *Lancet,* (**344**)2: 1129 -1133.

Starfield, B. 2002. *Atenção primária: equilíbrio entre necessidades de saúde, serviços e tecnologia.* Brasília, UNESCO/Ministério da Saúde.

Starfield, B.; Shi, L.; Jiahong, X. 2001. Validating the Adult Primary Care Assessment Tool. *Journal of Family Practice,* (**50**)6:161-175.

Tidd, J., Bessant, J., Pavitt, K. 2005. *Managing Innovation: Integrating Technological, Market and Organizational Change.* 3. ed. Chichester: West Sussex, England, John Wiley & Sons.

Vuori, H. 1992. Primary Care: Is There Enough Time for Prevention? *American Journal of Public Health,* (**93**)41: 635-641.

World Health Organization. 2005. *Towards a conceptual framework for analysis and action on the social determinants of health.* Discussion Paper, n. 5. Geneva: WHO, 2005.

Yin, R. K. 2005. *Estudo de Caso – planejamento e método.* 2. ed. Porto Alegre: Bookmann.