

# Disclosing the Health Value through Integrated Report: An Explorative Research

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## Abstract

This study aims to investigate if the integrated report, according to the IIRC (International Integrated Reporting Council) Framework, has the potential to disclose health information and to address citizens' expectations. An explorative case was conducted in an Italian public hospital follows the action research approach. Semi-structured interviews were asked by researchers to reach a deep understanding of the phenomenon under study. The results show that Integrated Reporting is able to disclose the value created: the health outcome. There is a need for Integrated Reporting Framework adjustments for health sector purposes: in relation to some capitals of the framework, to the concept of value created in its particular emphasis on health outcome for patients and to the need to find a more effective communication method. The absence of stakeholder engagement activities in the Integrated Reporting adoption process influences the attractiveness of the document. In fact, the Integrated Reporting user appears to be only the financing institution.

**Keywords:** non-financial disclosures, integrated report, health value, performance, action research

## 1. Introduction

Always more are the accountability pressure placing upon public organizations in terms of greater transparency about their internal activity, the performance and the "value" created for stakeholders (Farneti & Guthrie, 2009; Guthrie, Manes-Rossi, & Orelli, 2017; Pirozzi & Ferulano, 2016; Vagnoni & Oppi, 2015; Veltri & Nardo, 2013). In healthcare sector, stakeholders mainly refer to all citizens as users of healthcare services which need "agility in reporting" (Cohen & Karatzimas, 2015, p. 456) to address their information needs. But scholars emphasize as citizen do not have enough skills to understand technicalities and documents with a lot of multifaceted information: therefore, he often does not read this report (Biondi & Bracci, 2018; Choen & Karatzimas, 2015; Lai, Melloni, & Stacchezzini, 2017). In this sense, traditional financial reporting is not considered capable of fulfilling the accountability needs of the wider non-expert citizenry (Newberry, 2015). On the other hand, academics sustain that Integrated Reporting (IR) - according to the International Integrated Reporting Council (IIRC) framework (IRF), published in 2014 - has the potential to report on the accountability of public sector organizations (Adams, 2018, Brusca, Labrador, & Larran, 2018; Mauro, Cinquini, Simonini, & Tenucci, 2020; Montecalvo, Farneti, & de Villiers, 2018) and, then, to disclose the created value by combining and integrating the information contained in single reports (Adhariani & De Villiers, 2019; Eccles & Krzus, 2010).

The public sector is a suitable context for the adoption of IR because of the intensive use of human resources, the high involvement in social and environmental issues and the intangible nature of its objectives and products (Cohen & Karatzimas, 2015; Iacuzzi, Garlatti, Fedele, & Lombrano, 2020).

Considering the limits of current readability of non-financial report by citizens (as main stakeholders) but given its potential (Biondi & Bracci, 2018; Cohen & Karatzimas, 2015; Lai et al., 2017), the paper aims to present the efforts carried out by a public healthcare company in defining the information relevant to include in its integrated report.

Our researcher questions are: What is the IR adoption process in a healthcare company? How are the material elements that influence the value creation process of a healthcare company determined? Who is the IR's user in the company's perspective? Our research responds to calls for IR research in practice by academics, while delving into the less explored field of implementation process of this emerging report in public entities (Bananuka,

Tumwebaze, & Orobia, 2019; Cohen & Karatzimas, 2015; Dumay, Bernardi, Guthrie, & La Torre, 2016; Manes-Rossi, 2018; Manes-Rossi, Nicolò, & Argento, 2020; Niemann & Hoppe, 2018; Nistor, Stefanescu, Oprisor, & Crisan, 2019).

We provide an explorative research study of the IR adoption by a regional public hospital in Italy, during the period from November 2016 to April 2021. The qualitative research is developed following the action research approach (Bebbington, Higgins, & Frame, 2009; Coghlan & Coghlan, 2002; Westbrook, 1995).

The paper is structured as follows: the next section presents the literature review on IIRC framework applicability by public organizations. The methodology section describes the method chosen to answer the research questions. The central part of the paper illustrates the case study. Finally, the last sections conclude the paper with a discussion of the findings and presents its main contributions and limitations.

## 2. Understand the IR in Practice: A Need in Public Sector

In 2014, the International Integrated Reporting Council published the IR framework (IRF) to give a general guideline to companies wishing to adopt this new instrument. The framework states that IR can be applied to both the public sector and the private sector (International Integrated Reporting Council [IIRC], 2013). A 2014 IIRC survey of public and private sector organizations (published in Chartered Institute of Management Accountants [CIMA], 2015) found that the key benefits of IR are breakthroughs in value creation (CIMA, 2016; Montecalvo et al., 2018), improvements in what is measured, improved management information and decision making (Guthrie et al., 2017), a new approach to stakeholder relations (Farneti, Guthrie, & Canetto, 2019; Montecalvo et al., 2018), better-connected departments, and broadened perspectives. Several researches have shown that IR has a flexible approach and the ability to provide a holistic picture of business management. It seems to be the most appropriate tool to represent the performance and the company actions (García-Sánchez, Raimo, Marrone, & Vitolla, 2020), even in particular periods - such as that of the pandemic - where communicating the results of a public hospital is even more important. Some authors said that IR could represent an important development in the reports produced by public organisations (Farneti et al., 2019; Manes-Rossi, Aversano, & Tartaglia Polcini, 2019; Nistor et al., 2019) because the public entities must demonstrate to citizens the value they generate in the provisions of their services (Chittoo & Ramphul, 2008; CIMA, 2016; Montecalvo et al., 2018). In fact, according to the stakeholder theory approach, public-sector companies define the value creation process and therefore the use of the capital they have available according to the expectations of a greater diversity of stakeholders, who exert a greater influence on them (Manes-Rossi et al., 2019; Nicolò, Zanellato, Manes-Rossi, & Tiron-Tudor, 2020; Tomaselli, Garg, Gupta, Xuereb, & Buttigieg, 2020; Tirado-Valencia, Cordobés-Madueño, Ruiz-Lozano, & De Vicente-Lama, 2020). Specifically, for public companies the most influential stakeholders are citizens who should be the main recipients of the report. The same perception can be traced in the pillars of the legitimacy theory (Nicolò et al., 2020): to acquire legitimacy and respond to the requests for information from stakeholders requires to companies, in public sector, to report information in a coherent and concise (Biondi & Bracci, 2018). About this, Choen and Karatzimas affirm that the citizen asks: “a picture of value creation activities in a public sector entity in a concise, digestible and easily understandable way” (2015, p. 457). Otherwise, the consequence can be that they don't read too complex a report, as stated by previous research (Biondi & Bracci, 2018; Lai et al., 2017).

If there are the citizens' requests, studies demonstrated that public organizations have difficulties connecting non-financial reporting and the process of creating public value (Tirado-Valencia et al., 2020; Tommaselli et al., 2020). The central question can appear the selection of relevant information: in other word, how the organizations apply the principle of materiality? That means how relevant topics - those that have or could have an “effect” on the company's ability to create value (IIRC, 2015, p. 17) – are included in the report? According to the document “Materiality in <IR> Guidance for the preparation of integrated reports” (IIRC, 2015) the selection of material information requires an interaction process, a dialogue with stakeholder (in this case, with citizens) and the consideration of (in general) their impact on decision-making process, the company strategies, the performances (present and future). Even if these last impacts could be assessed by the companies (and thus the top management), the determination of what really matter for citizens requires stakeholder engagement activities. As highlighted by Torelli, Balluchi, and Furlotti (2020), without stakeholder engagement activities, the company “cannot speak with them (stakeholder) in a mutually satisfactory manner” (p.11). Recalling the IRF, the principle of materiality of the IRF requires that company's senior management would: “consider the organization's value drivers; consider matters identified during stakeholder analysis and engagement in order to understand stakeholder interests and concerns and to further consider the organization's dependencies and effects on the capitals; consider other factors external to the organization (...); consider other factors internal to the organization, including the organization's capacity to exert leverage on its relationships and the organization's competence/capacity to respond to changing conditions; consider the organization's performance in the current business reporting cycle; and ultimately,

consider whether the matters identified in the preceding five points affect or may affect the organization's strategy, its business model or the capitals, and thus affect the organization's ability to create value over time" (IIRC, 2013b, p.3). These elements should be considered in the IR adoption process in practice. About this, scholars have called for more empirical studies to increase the understanding of how this practice is carried out by companies, above all in public sector. Specifically, there is heightened interest in research on the adoption of the (still) vague concept of value creation fits into the public context (Iacuzzi et al., 2020; Manes-Rossi et al., 2020; Päril, Paemurru, Paemurru, & Kivisoo, 2020). In a wider sense, Lodhia, Jacobs, and Park (2012) are asking researchers to better understand how the value and interests of both internal and external stakeholders influence non-financial reporting in the public sector. Dumay, Bernardi, Guthrie, and Demartini, (2016) new researchers to bridge the gap "between academics researching IR and IR practice because the vast majority of IR articles do not research practice, specific organizations, or engage practitioners as fellow researchers and authors" (p. 175). Veltri and Silvestri (2015) show an interest for other case studies able to shed light "on the levers and the barriers that managers have to face when implementing an IR project in their organisations" (p. 443). Niemann and Hoppe (2018), in their review of research on sustainability reporting by local government, refer to a "call for more qualitative research" (p. 205) on IRF application. Recently, Nistor, Stefanescu, Oprisor, and Crisan (2019) said that it might also be useful applying and testing IR in other public organizations to see how they are willing to strengthen public accountability through greater transparency. At the end, Manes-Rossi, Nicolò, and Argento (2020) said that research on the healthcare sector is still scant and they invite the scholars a "research efforts to understanding these types of organizations' practices in relation to non-financial reporting formats" (p. 662).

### *2.1 The Key Elements of IR: What Matter in Healthcare Public Sector?*

According to IRF, an integrated report includes the following eight content elements: Organizational overview and external environment; Governance; Business model; Risks and opportunities; Strategy and resource allocation; Performance; Outlook and Basis of preparation and presentation (IIRC, 2013). At the core of the organization is its business model, which draws on various capitals as inputs and, through its business activities, converts them to outputs (products, services, by-products and waste). The organization's activities and its outputs lead to outcomes in terms of effects on the capitals. The capacity of the business model to adapt to changes (e.g., in the availability, quality and affordability of inputs) can affect the organization's longer-term viability" (IIRC, 2013, p. 13). Despite the centrality of this element, as discussed by Tweedie, Nielsen, and Martinov-Bennie (2017), the "IR's business model concept remains largely unexplored" (p. 3) from the academic perspective. The determination of a healthcare organization's business model must consider some peculiarities of these kinds of organizations. First of all, a key concept is the meaning of the term "outcome" for those who work in healthcare organizations and those who are affected by healthcare organization activities and services. In fact, there is increased attention placed on the role healthcare teams and organizations play in improving the quality of care provided to the patients (Suter, Hyman, & Oelke, 2007); with measured and reported outcomes this role can be shown. However, outcome is identified differently, depending on the context. The IRF definition (we refer to "the consequence for the capital as a result of activities and outputs" IIRC, 2013, p. 14) is one thing, whereas outcome in the healthcare sector is associated with the concept of "health outcome", which is the driver to create value for patients (Porter & Teisberg, 2006).

In Porter's words, outcomes should include the health circumstances most relevant to patients. They should cover both near-term and longer-term health, addressing a period long enough to encompass the "ultimate results of care" (Porter, 2010, p. 2479). Health outcomes "encompass the whole cycle of care" (Porter, Larsson, & Lee, 2016, p. 504) and concern "patients' results" (Kim, Farmer, & Porter, 2013, p. 1061). It is probably close to one of the possible external outcomes named in the IRF, which is "customer satisfaction" where the "customer" is the patient, and his/her satisfaction is the improvement of his/her health status. But outcome measurement for healthcare is quite distant from what is described as the "consequences for capitals" or "effects on the capitals", as stated by IIRC.

Another peculiarity is the concept of IRF input as "capitals (resources and relationships) that the organization draws upon for its business activities" (IIRC, 2013, p. 33); this fits well with the concept of Handler, Issel, & Turnock (2001) regarding the "structural capacity of the public health system" which is "the cumulative resources and relationships necessary to carry out the important processes of public health and includes the following elements: information resources, organizational resources, physical resources, human resources, and fiscal resources." (2001, p. 1237). The last elements of the IRF business model are the outputs which are "an organization's products and services, and any by-products and waste" (IIRC, 2013, p. 33). In healthcare organizations the outputs are the health services delivered to patients and derived from health activities. The healthcare organizations deliver "services that comprise intangible processes, not concrete products (even if they

may utilize such concrete elements in their delivery)” (Osborne, Radnor, & Strokosch, p. 641). Finally, in identifying the business model, we must consider the external factors that influence the functioning of health organizations. They operate in a complex system where - as discussed by Handler, Issel, & Turnock (2001) - the “phenomena such as the social, political, and economic forces operating in the overall society” work together with “the extent of demand and need for public health services within the population” and “forces external to the public health system that exert pressure on it to function in particular ways” (p. 1236).

Considering the peculiarities of the IR key elements in healthcare organization, it emerges the need to how value creation can be disclosed to citizens.

### 3. Method

This study pursues the following overall research questions: What is the IR adoption process in a healthcare company? How are the material elements that influence the value creation process of a healthcare company determined? Who is the IR’s user in the company’s perspective?

The present paper answers these research questions through an explorative research study (Bryman, 1989). The paper focuses on understanding the dynamics present within a single setting (Eisenhardt, 1989) in order to enrich previous research on healthcare accountability and to open new research avenues. The qualitative research is developed following the action research approach (Bebbington et al., 2009; Coghlan & Coghlan, 2002; Westbrook, 1995). The approach is that of a collaborative relationship in order to be able to satisfy the needs of the “customer” and in the meantime generate new knowledge (Coghlan & Coghlan, 2002).

The research was developed in close collaboration between the researchers and the managers of the company chosen by the IR. According to this approach, in fact, the researchers become participant of the research and not an independent observer (Olesen & Myers, 1999; Westbrook, 1995). The action research approach, requires a cyclical four-step process: planning, taking action, evaluating that action, leading to further planning and so on; it promotes skills of inquiry, reflection, problem solving, and action (Giuliani, 2009).

#### 3.1 The research Site

The organization studied is identified as one of the regional public hospital located in the Marche Region (Italy). The case chosen provides, to patients, services with high complexity specializations (some exclusives on regional territory) and it is seat of II level emergency department for the entire Marche Region. In 2020, more than 3,800 employees (physicians, nurses, technical, and administrative personnel) contributed to the healthcare needs of patients with about 48,000 admissions to the hospital and 5 million outpatient services. The public hospital (PH) model refers to an integrated public organization where academic, clinical, and research activities are performed (Vagnoni & Oppi, 2015; Spanò, Ferri, & Tomo, 2022). As Cavicchi, Oppi, and Vagnoni (2019, p. 353) have already noted, a university hospital, as a public organization, garners interest in the IR research discourse due to its complex organization “where specialized care, research, and teaching activities are performed”.

#### 3.2 Research Design

The researchers guided the process of adapting the IR to the PH reality and provided suggestions on how the key elements of IR could be interpreted or adapted to compose the report. In light of this, the case findings will be discussed according to the three phases of the project:

- Step 1: introduction of IR project;
- Step 2: design and implementation of PH Integrated Report;
- Step 3: preparation of PH Integrated Report.

#### 3.3 Data Collection and Analysis

During the research period from 2016 to 2021, a variety of data sources were utilized, including observations and comments of practitioners in situ, as well as the collection and examination of documentation and reports (Atkinson & Shaffir, 1998; Scapens, 2004; Yin, 2003). Specifically, the reports examined are for example: annual report, performance report and plan, training plan, staff satisfaction assessment. At the same time, the internal reports on output activities (both of clinical and research nature) and the internal information system record represented the data sources. For each IR key elements, a set of quantitative and qualitative information was identified, during several focus groups with the Director General (DG) and the head controller (HC): the top management members who followed the entire process of IR adoptions. The focus groups were programmed by researchers at the beginning of each reporting year in order to select relevant information to consider in IR process and to hone the typologies, the information calculation/collection methods over the four years. The information was selected because of their suitability for the phenomenon under investigation (Eisenhardt & Graebner, 2007). Based on the

identified information a gathering process was developed each year using sheets and/or pre-compiled format to collect data (both quantitative and qualitative). All the data collected in each individual implementation phase of the IR process was analyzed. In addition, during the period from 2016 to 2021 the researchers took note of the DG's and HC's choices made in the implementation process in order to capture how single IR implementation phase was carried out by the PH, but, also, to understand the thinking and behavior followed by the company in the person of the DG and the HC in adopting the materiality process for the construction of the report (IIRC, 2015, p. 13; IIRC, 2013b, p.3). During the design and implementation phase of the report these phases were followed and will be retraced.

In early months of 2021, semi-structured interviews were asked by researchers to DG and to HC (Kreiner & Mouritsen, 2005; Qu & Dumay, 2011), to reach a deep understanding of the phenomenon under study (Carrington & Catusus, 2007) which had been reached several years after the start of the project. The interviews aimed to investigate why the company decided to implement the integrated report and the opinion and use of this document by the management as well as the difficulties faced in developing each phase and in collecting information. This technique allows the interviewer to probe for more information and solicit clarification of answers. Furthermore, although a list of questions to be submitted to the respondent is prepared in advance, the interview takes place in a colloquial way that offers participants the opportunity to explore the issues they believe are important" (Wengraf, 2001, p. 103). The interviews of the implementation of the IR in the public hospital were conducted face-to-face in February 2021 and lasted about 1 hour each. Once the interviews were transcribed, it was checked by the respondent in order to ensure the accuracy of the data collected.

The findings section presents the process phases of IR adoptions considering the PH experience acquired over the years. In order to give a systematic representation of the IR adoption process carried out by PH, the refined process carried out on the last reporting year (and the last version of the IR report) is presented. A more detailed comments on the topics investigated with the interviews is proposed at the end of the findings section.

## 4. Results

### 4.1 Step 1: Introduction of IR Project

An initial workshop, in 2016, was held by the researchers to introduce IR and to foster an initial discussion with the other members of the project team. The initial presentation provided the general definitions as given in the IRF, along with some examples that were tailored to the PH context, also considering the available information on PH activities, processes, and governance. Each year, following the DG's decision to approach IR, several focus groups were organized, formed by the researchers, the DG himself, and the Head Controller of the PH. This last figure served as the privileged spokeswoman of the researchers in the meetings that followed. The focus group sessions were based on a semi-structured agenda proposed by the researchers. In each focus group the relevant information to collect and the collection methods were defined only involving the DG and the HC: the engagement of other subjects or organizations in the selection of material information was not taken into account by top management in this initial phase.

### 4.2 Step 2: Design and Implementation of PH Integrated Report

The HC and DG start to consider the "factors external to the organization" (IIRC, 2013b, p.3) that we can defined the peculiar characteristics of the external environment in which the company operates. The crucial "conditions" for understanding the circumstances under which the PH operates were traced in: the measures adopted by the legislative bodies and by the regulatory authorities (both national and regional), the information related to the epidemiological characteristics of the population and some aspects of regional socio-economic context (e.g. practicability, accessibility, poverty, and well-being. After that we "consider other factors internal to the organization, including the organization's capacity to exert leverage on its relationships and the organization's competence/capacity to respond to changing conditions" (IIRC, 2013b, p.3). It emerges that the PH collaboration with the other two organizations within the Regional Health System (in responding to the citizens' need for healthcare assistance) represents a stimulus for the PH to balance cooperative efforts and competitive forces generated by sharing economic resources.

About the "organization's value drivers" (IIRC, 2013b, p.3) the company decided to reflect on different element that compose business model. Starting with inputs, the first one is Financial Capital. Interpreting, in the narrowest sense, the concept of "providers of financial capital" for an Italian public healthcare unit, they are recognized in two main clusters: the Region (in the sense of Regional Authority) and the patients. For the purposes of the present paper, it is useful to simply recall that each Region obtains funds from the National Healthcare System (NHS) in relation to its economic and healthcare objectives and to the demographic and epidemiological characteristics of the regional population (Marasca, Montanini, D'Andrea, & Cerioni, 2018; Legislative Decrees No 502/1992; No.

229/1999 and subsequent updates). The NHS is financed largely through general taxation imposed upon citizens (Toth, 2016). In addition, a minor proportion of the financing also derives from the so-called "tickets" or co-pay fees charged to patients (Toth, 2016). In this scenario, it is plain to see how there can be confusion, as pointed out by Van Peurseem (1999) in his study aimed to offer a theory for facilitating and legitimizing an accountability-base discourse and disclosure in the public health sector. He stated: "Accountability has become a source of confusion in an organization which receives its funding from one source, its mandate from another, and its 'customers' from yet another segment of society" (Van Peurseem, 1999, p. 431). In the PH context, in fact, the real funders are the citizens as tax-payers, the mandate is from the Regional Authority and the "customers" are the patients which may or may not be the citizens themselves.

The second one is Natural capital, in this capital the PH included the natural resources (energy, water) that uses to provide its services every day.

The third is the Productive Capital. For this input there were no obstacles to the identification, the company included the equipment and technologies that allow the PH to provide its services.

The first difficulties emerged relative to the meaning of Intellectual Capital and to the key relationships to consider in the Social and Relationship capital of the PH. In line with the precepts of the IRF (IIRC, 2013; p. 12), the intellectual capital included the organizational capital that was recognized by PH top management in all procedures codified in formal documents (e.g. quality certifications), in the information system which supports management, and in the protocols used for the interactions between the clinicians, academics, and external experts in developing R&D projects. In reflecting on "quality certifications", the HC identified them as "all accreditation processes carried out by single hospital units, with prior adoption of specific healthcare guidelines (e.g. standards such as JACIE - Joint Accreditation Committee of ISCT and EBMT)". The HC's approach was in line with Porter's quality concept that includes "adherence to evidence-based guidelines" and that "focuses overwhelmingly on care processes" (Porter, 2010, p. 2478). The PH did not have any intellectual property - as listed in the IRF- but the HC suggested recognizing it in the scientific outputs of the activities that involved the explication of the knowledge associated with clinical practice as well as with academic research and documented in publications and empirical studies. These activities, de facto, involved the explication the knowledge associated with clinical practice as well as academic research (Vagnoni & Oppi, 2015).

Within the intellectual capital of a PH, the scientific research carried out by hospital and university staff who have worked "in an integrated way" within the organization makes up a significant portion. However, within the PH there was neither a complete nor an integrated database of all the scientific activities carried out; nor were the impact factor indicators that testified to the value of the scientific research defined. It was therefore necessary to be able to rebuild a complete database of scientific activities on which to calculate performance indicators of the overall activity carried out. This aspect is in line with the study by Vagnoni and Oppi (2015), which recognized the strategic role of knowledge in the definition of the strategy of a teaching hospital. In particular, the authors affirm "the important role of academics in developing the PH mission, the action taken and implemented underlines the hospital-university relation as a key process to be considered to enhance value creation" (p. 354). Finally, also the description of innovative hardware and software technologies built thanks to knowledge sharing projects, between PH members and a private company, enriched the dimensions of the intellectual capital indicators. As for other forms of intangible capital, the debate concerning social and relationship capital consisted in a reflection on which key relationships the PH had developed and/or was striving to build and protect.

As for the relationship capital and therefore the key stakeholders of the company, taking inspiration from the text of the IRF (IIRC, 2013, p. 12), the HC decided to focus on three groups of key stakeholders: patients, the other healthcare units in the NHS that collaborated in responding to citizens' healthcare needs, and the third-sector organizations which helped both with economic resources and with the workforce of volunteers. Specifically, the relationship with patients was to reflect the ability of the PH organization to meet the patient needs (considering their age, their geographical origin), the patients' satisfaction levels as well as the PH behaviors in managing the clinical risk (according also to national and regional norms) and in providing services for improving the humanization of the care path. But about the point of "stakeholder analysis and engagement" (IIRC, 2013b) the company's choice was not to involve these subjects but to base the choices of the material elements on its historical perception. The relationship with the other healthcare units was to include information about the day-to-day exchanges in responding to public interest requests and actions undertaken in compliance with the regional/national measures to cover citizens' health needs. Finally, the relationship with the volunteers was to emphasize the economic and human resources provided by third sector organization for the benefit of the patients and familiars.

The last capital included in the input is Human Capital. This included expertise and experience invested in employees' PH that allow the company to implement the strategies and to provide quality and efficient services and care. Data and information related to composition, the training, the remuneration system of the workers was identified as crucial to complete this input.

Another focus that deserves attention relates to the key elements of the PH business model. The activities are: emergency activities, hospitalization activities and outpatient activities (according to Legislative Decrees No. 502/1992; No. 229/1999 and subsequent updates). In addition to the primary activities, the management and coordination activities have been included: information about programming policies, management of supplying, human resources management, management control, maintenance (outsourcing) and pharmaceutical expenditure management were defined for these activities. The outputs related to the activities are specifically measured in terms of quantity of services provided (and related indicators focused on the complexity of the treatments) to patients or to other stakeholders. In relation to "organization's performance" (IIRC, 2013b), a lot of information was found in other mandatory documents that the company had been issuing for some time: performance plan and performance report.

The clear definition of outcomes generated initial difficulties and determined the need to make other adjustments to the IRF. In fact, the major difficulties encountered were related to the concept of outcome as a "consequence" for the capital, as a result of activities and outputs (as requested by IR, see IIRC, 2013, p. 14). Even if the HC had recognized that, for example, the increase in research activities could increase personnel skills and, at the same time, could enhance the capability to use medical equipment or could determine the need to invest in new technologies, identifying a correct measure of this interdependency would have generated difficulties. To overcome these difficulties, and to identify indicators to measure the health outcomes, the members of the IR team decided to use the indicators calculated by the Regional Health Systems Performance Evaluation System of the Laboratorio MeS - Istituto di Management Scuola Superiore Sant'Anna ([www.performance.sssup.it/netval/](http://www.performance.sssup.it/netval/)). These indicators aim to measure, describe, and compare, through a benchmarking process, the different dimensions of health system performance. The dimensions analysed focused on the state of health of the population, the ability to pursue regional strategies, health assessment, assessment of user and employee experience, and finally, assessment of economic and financial dynamics and operational efficiency.

At the end of this phase, the IR teams (composed by DG, HC and the researchers) generated several sheets to collect information and data for each of IR key elements. During this phase the team participants developed an iterative process to determining what kind of information to collect and the collection methods. No interaction is carried out with other internal or external stakeholder to do this.

The Figure 1 represents briefly the result of choices made by the PH in performing the value creation process.

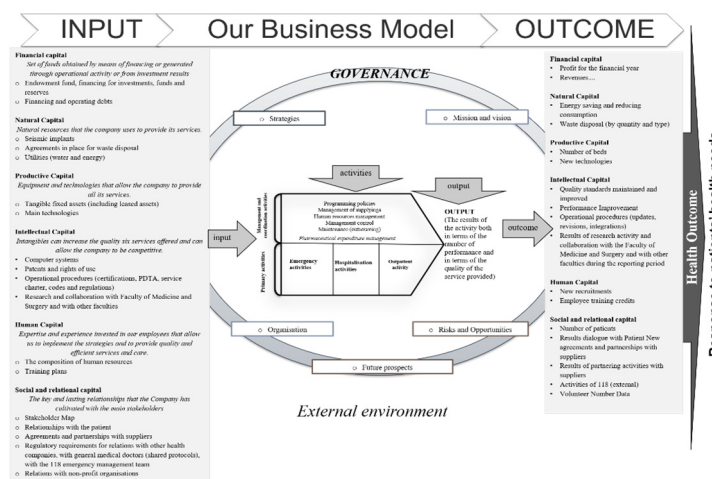


Figure 1. Value creation process

### 4.3 Step 3: Preparation of PH Integrated Report

The collection data and information was carried out by the PH controller, who disseminated the various sheets (or pre-compiled forms) to each PH internal office. The main data sources were records just collected for the preparation of others reports, produced annually by the PH (for example annual report and performance report).

Close to the end of the project, with the database complete, the challenge that presented itself was finding a way to present the information to the external stakeholders. In fact, another important step of the preparation of IR by the HC and DG was finding the easiest way to convey the necessary information to the external stakeholders (mainly the citizens and the Region) balancing conciseness, reliability, and completeness of the final document (IIRC, 2013; IIRC, 2021). A document of about 90 pages was prepared with several tables containing non-financial and financial data for each IR key elements. Few spaces have been left to the narratives: a prevalence of numbers characterized the IR report.

The HC and PH top managers decided to present the final document. Each year, the Integrated report was presented to the community during a specific event and right afterwards, it was published on the PH website. Several categories of stakeholder were invited to the public initiative, but very few citizens attended the event; among the nearly seventy participants, the majority were PH employees (clinicians, nurses and so on) and representatives of the Region.

#### 4.4 The Top Management's Opinions

The first topic investigated is the motivation to adopt IR. About this, the HC remarked that:

“We decided to adopt the IR because it is a complete document although it obviously needs the addition of much more information that can give an overall picture of what we do in a healthcare company that uses public resources”.

Moreover, the HC declared that the integrated reporting aims to “...inform citizens with a complete picture of what we do and IR can do that”. In fact, the trigger motivation declared by DG's PH was [to] “make transparent and communicate the outcomes of using the resources of the six areas represented by the six capitals included in the IR”. And, also “It is absolutely a more modern document that gives the possibility of exploring intangible dimensions and it is suitable for being the system for measuring strategic objectives.”

At the aim to understand to which the IR report is directed; it is interesting reported the DG's words on the key stakeholders for the hospital reality who had requested non-financial information. He pointed out that, while underlining the appreciation of the report by all stakeholders, the PH's DG said: “We have had requests of this kind especially from citizens' associations directly linked to the hospital. An interest was also expressed by the National Federation of Healthcare Companies (which made it the subject of a specific laboratory that started, and which was inspired by the experience of our company) and by scientific societies (with the aim of being able to read pitted data according to a more evident logic as regards the quantitative level of performance). There has also been a strong interest in the type of document adopted by the company and therefore the Integrated Report, as a document capable of highlighting intangible components that are the least explored but paradoxically, very important ones that distinguish a healthcare organization.”

He also declared that the IR “should inform patients and the regions (representing the main funder) of what we do”.

When researchers asked to top management members which aspect generated difficulties in the implementation phases, the emphasis was placed on the concept of health outcome. About, the HC strongly affirmed:

“It is not possible to quantify the consequences for the capitals as a result of our activities and output because they are often intangible and non-measurable; the correlation between each initiative and its effect on the capitals is not scientifically provable.”

In addition, the HC pointed out:

“Interpreting 'outcome' as 'health outcomes' and not as 'effects on capitals' is at least opportune for two fundamental reasons: firstly, improvements on the quality, accessibility and appropriateness in healthcare services guide all our actions and, thus, each of our investments. Through the measurement of the former we indirectly assess the latter. Secondly, recognizing the outcome in a different way (with respect to the health outcome concept) generates confusion compared to what is commonly shared in the public health landscape.”

Finally, regarding the importance of dissemination and therefore the publication of the report, the HC and DG agree regarding the success of the dissemination of the report thanks to its publication on the company website which is very popular with users. Nevertheless, they also highlighted the need to use new communication channels. The PH's DG commented: “Publishing on the website is the traditional way and it always works because we have thousands of views but today it is no longer enough. The time has come to evaluate and ensure that this tool can be experienced on social networks. In order for this to happen, the report must be disseminated in a more captivating way from the point of view of readability and therefore, it must be translated into ‘snapshots’ that touch on most aspects of interest to those looking for information and insights on our company.”



When discussing the voluntary aspect of the IR, the HC offered the researchers her interesting point of view, summarized as follows:

“At this moment it is not a compulsory document, but, if it does become mandatory, it should be supplementary or substitutive of documents already required by the law. ... given the amount of compulsory information required from administrators and practitioners in the healthcare sector, obtaining further information that is "not obligatory" will be increasingly difficult... At the same time, in the healthcare world, reporting what you do is a "moral" duty that is perceived more today than in the past. In making it compulsory, moreover, the difficulties will concern the homogeneous availability, within the national territory, of non-accounting and unstructured information”.

## 5. Discussion and Conclusion

Case analysis allowed us to answer the research questions. About the first research questions: What is the IR adoption process in a healthcare company? How are the material elements that influence the value creation process of a healthcare company determined?

The PH, following the principle of materiality (IIRC, 2013b), has identified the elements that influence its value creation process. This step was done with an in-depth study of the company with researchers but without direct involvement of the stakeholders (IIRC, 2013b, p.3). The choice of the company is motivated by the awareness of what these subjects need as information in terms of responding to health needs and therefore on internal perception.

The elements that emerge are: context, capitals and outcome.

About the context, the public nature of the PH as an organization working in the Italian context determined the need to take into consideration the influence that the country's legal system (Frías-Aceituno, Rodríguez-Ariza, & García-Sánchez, 2013) and the regulatory authorities (both national and regional) exert, both in addressing the strategies (economic and health-oriented) and in determining the key activities. So, the “political climate as well as legislation” of the context in which it operates influences the adoption on this accountability tool. About this aspect, we can sustain that our results confirm what emerged in the researchers' debate: there has been the need for adjustments and testing of the IRF for public entities (Bananuka et al., 2019; Bartolini & Picciaia, 2013; Cheng, Green, Conradie, Konishi, & Romi, 2014; Cohen & Karatzimas, 2015; Nistor et al., 2019; Oprisor et al., 2016). Oprisor, Tiron-Tudor, and Nistor (2016) specifically states: “For implementation in the public sector, we need to question and break down this model in order to analyze whether it is appropriate for the public sector in its current form (with accurate testing for each piece) or it requires certain adjustments” (p. 754).

About the capital we have observed that some adjustments to the IFR are needed during the adoption of IR.

Some adaptations derived from the difficulties encountered in measuring (and thus quantifying) the consequences for the capitals because of PH activities and outputs (see the words of HC). As recognized by Flowers (2015) this last aspect is the main stumbling block of the IRF application (Flowers, 2015).

The PH resulted still far from finding measures able to capture the “combination, interrelatedness, and dependencies between the factors that affect the organization's ability to create value over time” (IIRC, 2013, p. 34). In fact, as demonstrated by case study findings and the interviews, as regards interdependencies between capitals (IIRC, 2013, p. 17), the very nature of the health delivery system can make it difficult to provide an “exhaustive account” of all these interdependencies. As recognized by some scholars, in fact, the healthcare organization activities are, if required by the patient's medical condition, carried out “in an integrated way” (Porter, 2010, p. 2248), with “multiple vertical and horizontal interconnections” and require “interdependent work of highly specialized employees that directly engage with patients” (Vainieri, Ferrè, Giacomelli, & Nuti, 2017, p. 3). The “trade-offs between capitals” (IIRC, 2013, p. 17) and measurement are another criticized element of the IRF. Dumay et al. (2017) described these topics as merely “unclear. while Flowers (2015) argued that “all trade-offs are problematic in view of the difficulty of measuring the different capitals in consistent and comparable ways” (Flowers, 2015, p. 8). This concept has already been presented by Humphrey, O'Dwyer, and Unerman (2017; p. 15) when the authors recognized that “performance could not be measured consistently across capitals without causing confusion for readers”. This critical issue surely depends on the fact that, as in all healthcare organizations, in the PH the activities are carried out jointly, in an integrated way, with multiple interconnections (Porter, 2010; Vainieri et al., 2017) between health units, and the consequences of health activities are often intangible (Osborne et al., 2016; see also comments of the PH's HC). But, at the same time, this can depend on the unclearness of measurement of all trade-offs between capitals in the IRF (see Dumay et al. 2017). Due to these underlying difficulties, the IR of the PH risks obscuring relevant information to stakeholders (Atkins & Maroun, 2015). In addition, the public value resulting from “interconnected factors” (Bartolini & Picciaia, 2013, p. 198) is poorly represented. Therefore, our study leaves the researchers with one open question: how can the interdependency

between healthcare organizations capitals be measured?

About last research question: Who is the IR's user in the company's perspective?

In the PH perspective (see DG's opinion) the IR is direct mainly to citizens (or their associations in general), who can or cannot be patients. But despite this, the company made the mistake of not involving citizens in defining the material elements of the report, affected by its few attractiveness towards them. In fact, the document does not respect the principle of "concise communication" request by IIRC (2021). The document appears principally address to the main funders (to Region in the case study): in this institution (as main stakeholder) operate subjects able to understand technicalities and records presented in the IR report. The prevalence of numbers and information collected starting from the other annual reports and relations as well as the perception of IR ad "an additional document" to others are factors that reveal a formal adoption of the IR process but a substantial absence of the integrated think culture in the company.

The study contributes to the literature by confirming or expanding the findings of previous research. Our contribution responds to calls for IRF research in practice by academics (Bananuka et al., 2019; Niemann & Hoppe, 2018; Nistor et al., 2019): through the action research approach we act "by intervening in applying IR inside organizations" (as required by Dumay et al., 2016, p. 176). In IR field, we respond also to scholars that have called for more empirical studies about the difficulties met by managers in implementing the IR tool in their organizations (Veltri & Silvestri, 2015; p. 443).

The complex, and often not possible, measurement of interdependencies between capitals is one example of the common aspect of IRF implementation in both private and public organizations. The need to customize the accountability tool of IR to the specific realities is another focus point previously develop by scholars. The public value, expressed in health outcome, should guide the attempt to build a framework useful for any organizations operating in the hospital setting and, in general, in the healthcare sector. Moreover, our work enriches previous research on the general topics of accountability by public organizations (Osborne, 2017). At the end our findings explain how public sector entities communicate public value for the benefit of the community like request to Manes-Rossi (2018) and how health organizations approach these types of non-financial reporting (Manes-Rossi et al., 2020). But the results show the lack of attractiveness of the PH integrated report for citizens - as demonstrated by their absence at the public presentation- and confirm the results of other authors on the non-readability of IR from citizens (Choen & Karatzimas, 2015; Lai et al., 2017). Maybe, the choice of not involving stakeholders (in particular citizens) in the IR preparation could be the reason of this phenomenon. Substantially, the main IR's user is the region to which the PH demonstrates the resources spent: the IR is in addition to other compulsory or internal reports.

About research implication we believe that our study can be an example for companies in the healthcare sector that have not yet approached the IR tool. This research could help them identify the key elements to be included in this report and supported in addressing some choices due to the context in which this type of company operates.

The paper presents a limitation because contingency factors influence some of the conclusions and insights, which may not be transferable to other levels of analysis. However, extending the analysis conducted to other settings can offer future research opportunities to find different perspective of adoption of IR (in term of deviations/adjustments) in other public sectors.

#### **Authors contributions**

Prof. Stefano Marasca was responsible for study design and he wrote paragraphs 1. Introduction and 3. Method. Dr. Eva Cerioni and Dr. Alessia D'Andrea were responsible for data collection. Dr. Alessia D'Andrea wrote paragraphs 2. "Understand the IR in Practice: A Need in Public Sector", and 5. Discussion and Conclusion. Dr. Eva Cerioni wrote paragraph 4. Results. Prof. Stefano Marasca revised it. All authors read and approved the final manuscript.

#### **Competing interests**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

#### **Informed consent**

Obtained.

#### **Ethics approval**

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal and publisher adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

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#### **Data availability statement**

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

#### **Data sharing statement**

No additional data are available.

#### **Open access**

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