



The Contingency of the Lifeworld in a World of Standards. Repertoires of Resignification in (Evidence-Based) Healthcare Organization

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In this article I discuss the irremediable tension between the universalistic dimension of contemporary medicine, represented by the paradigm of evidence-based medicine (EBM), and local daily practices in specific healthcare organizations. This tension constantly challenges the unitary, universalistic vision to which modern medicine and science aspire. The EBM paradigm, which is currently the most prevalent in every medical-nursing discipline, aims to standardize care procedures through the process of constant scientific literature review and the production of operational guidelines based on what epistemic communities define as the most reliable and effective results: the so-called gold standards. In everyday clinical, therapeutic, and care activities, these procedures are intertwined with the multiplicity of elements that make up the lifeworld. “Universalistic” premises are never merely “applied” to “local” interactive contexts but are always creatively “implicated” in them. Using data collected during a year of ethnographic research in an intensive care unit in Northern Italy, I discuss how the abstract indications of EBM and the formal dimension of health organizations are incorporated, through socially located interactive repertoires, in actual care trajectories. Following the Science and Technology Study perspective in a practice-based analysis of daily work, I show how interactions between human actors, technological artifacts and organizational apparatus in daily practices constitute *repertoires of resignification* through which local universality emerges, resolving the tension between medicine’s universalistic aspirations and the unpredictable, situated nature of the lifeworld. I consider two repertoires: the interpretative (examining the production and dissemination of knowledge) and the relational (focusing on informal interactions between different professional groups and communities of practice). The article shows how care practices cannot disregard the specific organizational conditions in which they unfold and suggests that research should develop reflective analysis skills on what Annemarie Mol calls the *logic of care*, thus ceasing to treat the local dimension as a disturbing element in formal systems but, on the contrary, taking note of its impact and unavoidability in actual practice.

Keywords: standardization, contingency, EBM, situated practice, intensive care

INTRODUCTION: CONTINGENCY AND UNIVERSALISM IN MODERN CULTURE

Simmel (1997), one of the fathers of sociology and one of the most acute thinkers in grasping the metamorphosis of social reality, argued that the variety of human behaviors and expressions of social life could be reduced in every epoch to a fundamental, historically circumscribed antinomy. In the pre-Socratic world, this founding tension is seen between the philosophy of Heraclitus—who conceived an unstable world in continuous evolution—and Eleatic thought, which was more interested in grasping the indivisible essence hidden behind the multifaceted phenomenal appearance of life. With the advent of Christianity, the categories of worldly and otherworldly (or sacred and profane) distinguished the opposite poles around which life and social organization developed in the Middle Ages. The appearance of Galileo Galilei, the Enlightenment, and the French Revolution brought a shift toward a struggle between the ideal of progress and the Ancien Régime, or science and tradition, marking a cultural divide that would have a profound effect on the following centuries.

A similar fundamental dichotomy is also reflected in the modernity of the late 19th century, in which the positivist vision, faithful to the 18th-century Enlightenment and rationalist tradition, searched constantly for the ordering principles of an objective and universal nature. It stood in contrast to (German) historicism, which was sensitive to the subjectivity, contingency, and unrepeatability of history (Weber, 1922). The tension lay between the repeated search for rational forms of biological and social life—which can be understood, codified, and reproduced—and what Simmel (1997, 75) described as “the febrile rhythm of life itself, its waxing and waning, its constant renewal, its continual divisions and reunifications.” Late modernity also sought to contain the inexhaustible variability of life through the tools of instrumental rationality, systematically separating the necessary means from the ends pursued, the rationality of the process from the value of the goals, and the performative function from the symbolic meaning. This process became particularly evident after World War II, with the global spread of what Magatti (2012) calls *techno-nihilist capitalism*. This is the current social configuration, in which an economic and political system aimed at the accumulation of wealth is supported by a technical macrosystem that provides the tools for the realization of its purposes and by the reversibility and fluidity of symbolic meanings. Ritzer (2013) identifies the ideal type of this social form in the organizational model of the McDonald’s restaurant chain and isolates its main components—efficiency, calculability, predictability, and control—as the basis of what he calls “the McDonaldization of society.” Taking up Weber’s reflections on bureaucratic systems and the spread of instrumental rationality as the prevailing form of social action in modernity, Ritzer argues that every aspect of social life is now governed by rules, norms, techniques and formalities that are part of “the abstract regularity of the execution of authority” (Gerth and Wright Mills, 1958, 224).

At the opposite end of this ideal axis is the breakthrough of singularity and the unpredictable in the lives of individuals and in social life (Taleb, 2007). It is the apotheosis of the exception, the unexpected, and the contingent that populate the *lebenswelt* (lifeworld), in the full phenomenological sense of the term, as a historically situated vital world—a unique and changing place of everyday experience (Schütz and Luckmann, 1989). From this perspective, the ordinary unfolding of social phenomena and human behaviors is the result of historically determined conditions and of the particular intertwining of human actors, symbolic artifacts, configurations, intentionality, and unconscious impulses that intervene at any given time in specific and situated contexts. This social world is impossible to contain in rational predictive structures, because the variables in action are too numerous, complex, and changeable (Taleb, 2007). Social action is possible thanks to the primary and secondary socialization processes that accompany human experience in the different stages of life; through the categories developed by experiential knowledge, rooted in daily practice in the specific local area’ and, lastly, by means of the meaning people confer on their own actions and those of others (Berger and Luckmann, 1966; Schütz and Luckmann, 1989). Sociologists such as Beck (1986, 1998) and Bauman (2001) have analyzed this polarization in depth to lay bare its contradictions and show its effects on people, organizations, and the planetary ecosystem. Beck (1986), in particular, states that, in the current societal configuration, the subject (whether individual or social) has to reconcile these two extremes through biographical solutions to systemic contradictions to make sense of everyday life.

HOMOLOGATION, COORDINATION, AND AGENCY IN ORGANIZATIONS

Contemporary organizations are constantly striving to respond to two conflicting ordering principles: adherence to sociotechnical systems that ensure formal coordination and general efficiency (mainly through the development of standardized devices and procedures (Bowker and Star, 1999; Timmermans and Epstein, 2010); and the enhancement of human resources, experiential knowledge, and collaborative interaction, which allow daily problem solving and the construction of shared organizational and professional meaning and actions (Weick, 1995; Wenger, 1998).

The process of standardization reposes the essential premises of positivist thinking—namely objectivity, measurability, and reproducibility (Nekrašas, 2016)—in a contemporary form, seeking the homologation of space and time through adherence to shared regulatory systems (Bowker and Star, 1999). Standardization presupposes rational tools and knowledge, which is expressed through abstract rules and regulations intended to be universally valid and recognizable and require compliance to obtain the right to belong to the institutions and agencies that regulate the circulation of standards (e.g., the International Organization for Standardization—commonly known as ISO). From this

perspective, the social world is immersed in a relatively stable environment, where the particular is dissolved in the general and the local in the universal, from which each individual and concrete social reality derives its rules of operation (Timmermans and Epstein, 2010). This narrative assumes that the behaviors of specific and concrete social organizations, as well as those of people, comply with the dictates of the international agencies and institutions responsible for the approval and verification of the necessary requirements.

This rationalistic view of the social world presupposes a reductionist perspective on the epistemological and psychosocial level. The ineffable complexity of reality tends to be (more or less consciously) circumscribed and limited to make reality compatible with the most common interpretative schemes and monitoring tools, labeling any phenomena that goes against this system as bias or disturbance (Taleb, 2007). Social interaction also tends to be limited to the purely cognitive and rational components of agency, envisaging ahistorical and a-relational subjects operating in situations and imperturbable in terms of a personal life story, relational context, acquired habits, language, or the more emotional aspects of human interaction (Nekrašas, 2016). The practice-based approach, which is now widely accredited in organizational studies, argues, on the contrary, that there is a reflexive circularity between the knowledge that guides action and the behavioral component of the activity in the situation (Nicolini et al., 2003). Professional agency (such as knowledge) is no longer limited to the single individual but develops through a constant process of production and reproduction of situated practices in which organizational routines, systems of meaning, and sociomaterial infrastructures are embodied. According to this perspective, human activity in any situation is not guided by instances of absolute rationality but implies different levels of interaction with other actors, starting from a minimum level of mutual recognition of intentions and realized through communication methods that are never fully conscious. These forms of recognition, and the specific anchors to which they are linked, are essential in the daily process of implementing work practices, as they are not mere factualities, performed by people in a mechanical and repetitive way, but rather contain an element of normativity that concerns the symbolic dimension of the organization, the cultures shared by the community, and the distribution of power (Rouse, 2001).

In this article, I will illustrate how the standardization process is enacted in organizational life in medicine, one of the sectors in which it plays a fundamental role in coordinating individual and collective action. With the growth of evidence-based medicine (EBM) starting in the 1990s, operational protocols, international guidelines, and standardized equipment to support decision-making have become the daily working tools of doctors, nurses, technicians, and administrators (Berg, 1997). I will focus on daily practice in an intensive care unit (ICU), one of the medical departments with the highest technological density and the closest interaction between formal protocols, technological devices, and professional actors. I show how the irreducible tension between the universalistic dimension of medicine (promoted by the EBM paradigm) and the situated daily practice of the ward creates specific repertoires of resignification of formal

artifacts and technological tools, producing the “amphibious” dimension that Timmermans and Berg (1997) referred to as *local universality*.

STANDARDS AND SITUATED PRACTICES IN MEDICINE

To understand the spread of standards in medicine, we must start from EBM, which is the main officially accredited source of theoretical and operational references in contemporary medicine. The term EBM was coined by a team of epidemiologists from McMaster University in Hamilton (Canada) and refers to a series of procedures which were intended to eliminate the individual subjective component—and thus arbitrary decision-making—from medical practice (Evidence-Based Medicine Working Group, 1992). EBM places what is described by the international scientific community as “the best and most recent evidence in making decisions about the care of individual patients” (Sackett et al., 1996, 71) at the center of medical matters. From the first formulation of what was explicitly intended by its creators as a new “paradigm for medical practice” (Evidence-Based Medicine Working Group, 1992; Evidence-Based Medicine Working Group, 2002), EBM has seen a rapid and growing diffusion in almost all areas of medicine, with application in all areas of healthcare. A cursory search in the PubMed database shows that over 70,000 scientific articles have been published in the last 5 years alone, covering both clinical (EBM or evidence-based practice) and nursing (evidence-based nursing) and including all medical specializations and different branches of application for medical knowledge, from cardiology to mental health. The success of this approach surpassed the boundaries of the medical profession, and in the following years, similar tools spread in different fields, including management (Rousseau, 2006), education (Slavin, 2002), and social policies (Sanderson, 2002).

Remaining with the field of medicine, the basic assumptions of the EBM approach can be summarized in three points: (a) integrating medical practice with scientific research based on systematic data collection; (b) determining the limits of pathophysiology, on which medical practice is traditionally based; and (c) acquiring statistical methodologies and tools to evaluate and compare research (Timmermans and Angell, 2001). The spread of EBM was helped by the strong impulse it gave to the process of rationalization that medicine has seen since the 1980s, in an attempt to situate medical practice within the boundaries of scientific knowledge and definitively accredit the “long art” within the realm of the positive sciences (Timmermans and Berg, 2010).

The standardization process promoted by EBM also answered the managerial need to identify a new form of accountability capable of managing the entire clinical process by making it transparent, while encouraging a market orientation that combined economic goals with traditional clinical and care purposes (Timmermans and Berg, 2010; Webster, 2019). In professional communities, the spread of the new paradigm was welcomed with enthusiasm for the operational potential

it offered. However, it also sparked broad debate about the erosion of professional autonomy it entailed, in addition to the aforementioned overlapping of organizational objectives (Lambert, 2006). The main criticism concerns the exclusion of professional expertise in favor of strategies in which the decision is deduced from international classification systems, among which the most famous are the so-called gold standards, derived from large randomized control trials, then processed and disseminated by international agencies, such as Cochrane, or by scientific communities.

Psychosocial studies in medicine and science and technology studies (STS) have highlighted how the EBM paradigm is characterized by a rhetoric of the formalization of practices that is strongly reductionist and does not correspond to the daily life of medical professionals or to the practical implementation of treatments (Timmermans and Berg, 2010). From this perspective, the study of care practice is not limited to the relationships between the human protagonists (doctors, nurses, patients, etc.) but extends to medical records, laboratories, microscopes, departments, and other elements and practices in which agency is immersed: “objects are enacted, in practice” (Mol, 2002, 41). Thus, in medical and nursing practice, there is no faithful reproduction at the local level of provisions or indications formulated at the international level. There is a process of interpretation in which different systems of meaning and different professional cultures come into play (Lusardi and Tomelleri, 2018). Engeström (2018, 55) affirms that “the transitions from raw material to meaningful pattern to outcome in the construction of the object are not straightforward and algorithmic in any simple sense.” According to Mol (2008), in the EBM paradigm, decision-making is represented as an individual, timeless, and merely argumentative process, while, in daily life, deciding is a practical task, like diagnosing, injecting, explaining, listening, and so on. It also involves the continuous interaction of bodies, objects, technologies, organizations, symbols, and representations.

Timmermans and Berg (1997) introduced the concept of *local universality* to describe the problematic tension between the standardizing thrust of EBM and the uniqueness of local care contexts. Local universality is achieved through a process of adaptation and partial transcription that protocols, guidelines, and other decision-making support tools undergo in the transition to organizational and professional practice. In light of these studies and reflections, it emerges that the evidence EBM aims to produce is acontextual and independent from many of the aspects involved in the daily practice of professionals and in care processes, including organizational resources, degree of patient compliance, and interactions between different professional groups and communities of practice. Introducing technologies and artifacts (e.g., software or operational protocols) into an existing practice is a process of continuous negotiation of meanings, in which all of the elements involved, from human actors to technical objects, are resignified. The particular and unique local features that the EBM paradigm aims to eliminate interact with the evidence-based artifacts, modifying their original meanings: the hospital and district health service organization, the characteristics of the ward, personal and

professional life experiences, and the stories of patients and their families all contribute to produce that local universality that evidence-based artifacts generate in the local realization stage (Lusardi, 2015).

METHOD

This article is based on ethnographic data collected during field research conducted in an ICU in Northern Italy. This study—which analyzes the working practices and symbolic representations of the staff on the ward, seen as privileged witnesses of the transformations affecting contemporary medicine—was made from a perspective of *idiographic generalization* (Gobo, 2008). Following this perspective, the social regularities found in a specific context can be translated by inference to other social contexts with similar characteristics.

The operative unit consisted of 15 beds (of which four were reserved for postoperative patients from cardiosurgery) and an isolation box for patients suffering from infectious diseases and is hosted in the main public hospital in the city. Every year about 1,000 patients were admitted to support their vital functions (nutrition and hydration, blood circulation, and breathing). Most continued with treatment in other departments or were discharged to other health facilities or to their home. According to internal data, about 10% of patients died in the ICU. A total of 33 physicians and over 100 nursing staff and social and health workers operated in the facility. Resuscitation and intensive care services were available for both hospital’s internal clients (including through specialist consultations in other medical departments) and external access from the Emergency Department (e.g., in cases of accidents and traumatic events). The structure consisted of several physical spaces, including two large rooms that house the intensive care beds, each equipped with the artificial respirators, infusion pumps, and digital tools for monitoring vital functions; the emergency room, set up to quickly stabilize vital functions even in the most serious cases; and the medical room, where medical staff kept clinical documentation, holds team meetings, discuss clinical cases, or simply rest. In the main room there was a central console. This position was manned by nursing staff with direct access to the main vital functions of the hospitalized patients, both through direct observation and the large monitor across which the clinical data of all patients flow.

During the fieldwork, I paid particular attention to daily routines and to the different symbolic and pragmatic elements used in practice on the ward. Qualitative research methods, such as participant observation, ethnographic interviews, and semi-structured interviews, were chosen to obtain a thick description (Geertz, 1973) of the social world in question and, more specifically, of professional practice. As a unit of analysis in the study, the working practices of the healthcare professionals were identified as forms of *situated activity*, in which there is mutual interplay between the dimension of doing and that of knowing, which make up an action. The research takes into account the more pragmatic component of the analyzed context—namely, the empirically observable behavior of the people and the activities of the department—as well

as the symbolic framework within which such behaviors are implemented, noting what Silverman (2005) called “moral tales,” or the competent way in which people represent themselves and their actions. The adoption of the ethnographic method involved observing activities in the different phases of the working day (which in the ICU also includes the night shift and holidays) and their documentation in the field notes. The field notes also contain several reconstructions of deregistered informal or friendly conversations (Flick, 2006) between the researcher and the staff. The observational field notes often include emotional notes, in which I expressed the anxieties and fears as well as the joys experienced in the ward, and theoretical notes recording aspects that appeared interesting or insights that seemed worthy of further study. ATLAS.ti (Muhr and Friese, 2004) was very useful, allowing an apparently chaotic set of notes to be organized into an organic document. For more information about coding and analysis see Lusardi (2015).

The 12-month ethnographic observation also featured 15 semi-structured interviews (conducted with the nursing staff) and 15 ethnographic interviews (with the medical staff). The dataset includes participation in 30 medical staff team meetings (20 audio-recorded, deregistered, and transcribed; 10 reconstructed in the ethnographic notes) and the observation of 60 daily talks with the relatives of hospitalized patients (audio-recorded, deregistered, and transcribed). A grounded methodology was used for the data analysis process (Glaser and Strauss, 1967) to allow the emergence of analytical categories from the empirical field. I intended to de-naturalize the observational and discursive data (interviews, interviews, and team meetings), interrupting the natural flow of events, actions, and narratives to reach a different signification through the identification of interpretative codes. In reporting, de-identification and confidentiality were ensured by using fictitious names, and other potential identifiers were also altered.

FINDINGS

By adopting a practice-based gaze, I show how interactions between the human actors, technological artifacts, and organizational apparatus in daily practices constitute repertoires of resignification through which standardized protocols, formal regulations, and technological devices are enacted into ward practice. This process involves attributing meanings, functions, and usage methods linked to the specific organizational context established over time, consolidated with routines, and inscribed in the experiential knowledge of healthcare personnel. The resignification repertoires are the phenomenological outcome of this activation process, through which local universality emerges, resolving the tension between the universalistic aspirations of contemporary medicine and the unpredictable, contingent, and situated nature of the lifeworld. I discuss two repertoires: the interpretative, which considers how knowledge is produced and shared in a context of high technology density and how information is disambiguated and organized among multiple

data sources accessible in real time; and the relational, which concerns the informal interactions between different professional groups and communities of practice and how these interactions comply with formal operating procedures.

The Interpretative Repertoire

The practices of interpretation invest the sensemaking process (Weick, 1995) through which instrumental data are actively implicated in the sociotechnical ecology of the ward. Technologies provide data for diagnosis and treatment which professionals mediate with information from other heterogeneous sources: objective examination or observation of the pathology’s bodily manifestations, and information relating to the interactive and relational dimension. In daily practice, the different types of information coexist and require situated negotiation processes of interpretation in context, as emerges from the following conversation between physicians.

Bruno asked Marino, the ICU manager, to check the condition of a patient with artificial respiration and to change the mechanical ventilator settings as required because, according to her, the man showed signs of respiratory fatigue:

Bruno: Can’t you hear anything?

Marino: I can’t feel anything [he has his stethoscope on the patient’s chest]. What volumes did he have now?

Bruno: 550.

Marino: OK, leave it like this.

Bruno: Um, but he’s there..., he’s shrugging his shoulders.

Marino: I know, but he has a lung at the end, there’s nothing to be done. But with this, the saturation is good and the volumes are low.

[...]

Bruno: He’s shrugging.

Marino: Well...

Clinical practice consists of a plurality of information that contributes to defining the patient’s treatment and must be hierarchized according to negotiable priorities to become effective in the treatment process: instrumental data (the respiratory volumes, detected by the ventilator display, and blood oxygen saturation, indicated on the monitor at the top of each bed); visual observation (shrugging the shoulders is generally a sign of respiratory fatigue); and detecting pathological sounds (respiratory noises could mean lung problems). Anspach (1993) proposed a taxonomy of the information—that she calls cues—useful for the diagnostic process in ICU: technological cues, indicating information obtained with instrumental technologies; perceptive cues, indicating information collected through sensory perception, including palpation, percussion, and observation; and interactive cues, indicating information arising from communicative interactions between staff and patients.

In the aforementioned episode, Marino’s evaluation takes into account above all the technological cues (respiratory volume and blood saturation), which seem to indicate normal breathing and adequate blood oxygenation according to the optimal values encoded in the scientific literature. The perceptive cues, the bodily signs of fatigue detected through direct observation (the

movement of raising the shoulders while breathing), are less relevant for him. Bruno, on the other hand, appears more attentive to these signs, which in her opinion indicate the patient's suffering despite instrumental data in line with the standard range. The interactive cues are neglected by both physicians because the patient's was unconscious, as often happens in ICU. Nevertheless, the patient's body—devoid of consciousness and the possibility of communication—can still provide substantial information to guide the judgment of medical staff, as observed by Goodwin (2014). The patient is part of a hybrid information system, composed of biological and technological elements. Medical practice transforms them into a sort of cybernetic organism whose boundaries are well-defined by the technological infrastructure but, at the same time, highly fluid due to the interpretation they require. The outcome of this interpretation depends on the interaction between the expected universality of the technology (whose functioning is bound to codify conditions), the bio-psycho-social uniqueness of the patient, and the personal and professional histories of the practitioners in the specific organizational setting. This interaction cannot be entirely subordinated to the techno-normative meaning assigned by EBM to technological devices and protocols, and this becomes particularly evident when the instrumental data are not consistent with the clinical picture hypothesized by the doctors. In the following ethnographic note, covering the morning visits, the head physician is skeptical about the blood pressure value detected by the monitor and his doubts trigger a collective process of interpretation:

The head physician and Marino go to bed 3, in which lay a boy who has been in a car accident and had cardiovascular surgery. He is now sedated, ventilated, and monitored. The head physician claims that he must have awakened by now and points out that the patient's hands look rather swollen and bruised, and one has a "bluish" color. He listens to the pulse and does not detect any problems, but repeats that the patient must be extubated [removal of the cannula previously introduced into the trachea to allow artificial respiration], kept in analgesia for the pain, and transferred to another department. They then check the medical records and note that the hypotensive drugs are having no effect, because the monitor indicates blood pressure values around 190. The physician then points out that the monitor pressure is generally higher and asks to measure it manually. A nurse takes the sphygmomanometer next to the bed and after detecting the pressure confirms that it is lower, around 150. The head physician comments, "When the pressure is high, you have to choose the lowest, when it's low, the highest. You have to be smart..." Marino laughs. This avoids overloading the patient with unnecessary drugs, comments the head physician as Marino approaches the respirator.

In the ICU, there are two ways to measure blood pressure: manually, with the classic sphygmomanometer, or automatically, through a catheter inserted into the femoral artery. Although the biological parameter is the same, the different detection techniques involve different values. Detection through the arterial catheter records the internal blood pressure, which always returns a higher value than the pressure recorded at

the elbow. Professional interpretation is required to establish which value to rely on, because the automation does not require just a linear translation of the manual procedure using digital equipment. On the contrary, the digital transformation implies a new measurement system and a different meaning for the data and biological signs (Hartland, 1996). Compared with manual detection, the automated procedure requires two additional and essential steps: before measurement, the biological information is isolated and converted into a format compatible with the electronic equipment; and after measurement, the data need to be presented in a form that can be integrated into the department's sociotechnical apparatus. The different procedures can therefore produce different results in the search for meaning and can vary from situation to situation.

The diagnostic process was traditionally the domain of the medical profession, which was the only professional category entitled to contribute to the development of health and disease classification systems and clinical decision-making (Jutel, 2015). With the spread of biomedical technologies and the advent of EBM, the recognition of disease conditions mobilizes knowledge and techniques related to domains other than the purely medical: electromechanical engineering, computer science, biostatistics, molecular biology, and more. The more complex the equipment and devices used in clinics become, the more domains of knowledge there are where the departmental medical staff do not have direct expertise and must therefore delegate partial control to other highly specialized domains. Paradoxically, the same technology and protocols that through EBM intended to eliminate the randomness of human subjectivity from medical professionalism actually nurture communicative interactions and opportunities for confrontation and conflict in clinical practice.

The Relational Repertoire

In the eyes of an outside observer entering the ward for the first time, the interactions that take place in the ICU appear totally incomprehensible: the frantic movement of doctors and nurses around the premises, the succession of patients in the emergency room, the comings and goings of consultants with their tools, alarms going off, and the phones and fax machines that keep ringing—all of these contribute to an impression of hectic activity that is essentially indecipherable. The medical staff themselves sometimes share this impression: they used the metaphor of the "ship of fools" painting to describe the ward on particularly busy mornings.

Such an indecipherable frenzy is only apparent, epidermal; it can be deciphered, even if the codes for interpreting it and actively participating are based on essentially informal assumptions, unwritten in any protocol or guideline. This informal component of the daily practices interacts continuously with the formal organization of work, giving shape to the concrete care practices. The relational repertoire consists precisely of those practices and communication interactions invisible in EBM documents and formal representations, which nevertheless enable the ordinary working of wards in the complex articulation of the larger hospital structure. The emblematic case is the relationship of the ICU with the Department of Cardiosurgery, because the ICU hosts 4 beds for cardiac surgery

patients in the postoperative phase. This functional proximity, in which two professional groups intervene simultaneously on the same patient, often generated friction and tension, especially due to divergent clinical perspectives and misunderstandings over organizational hierarchy. Ferrari, one of the doctors who usually deals with patients discharged from the operating room, describes the difficulties with colleagues from Cardiosurgery:

[Among the ICU medical staff] there are those who are rigid, in the sense that they say, “this [the ICU] is my home, and they [the surgeons] are a little rude.” In this sense, they don’t ring the bell, they come in often and at will, they do as they like. But if you experience this like “Ah, you do it now then next time you’ll see...,” you don’t come out of it. Of course. I also told them to get the hell out, I also told them “Come out [of the ICU room], please, don’t meddle in things here.” I have no problem saying that, even in the elevator I said “Look, don’t do it again.” But you see that, all in all, it’s... You need some respect in everyday life. In short, you mustn’t look for confrontation with those people, because at the end you come off badly. And also because then you have to be there [in the ICU room] with them.

The communicative practice implied in Ferrari’s words recalls what anthropological studies have called an ethnocentric cultural model. According to anthropological tradition, *ethnocentrism* consists in the belief that one’s own patterns of behavior are always assumed as normal, natural, good, or important, and those of foreigners, because they live differently, are defined as wild, inhuman, disgusting, or irrational (Harris, 1987). Ethnocentrism expresses a specific way of interaction between a community perceived as its own (us) and all social groups and individuals who are not part of it (others). Organizational tensions, professional conflicts, disciplinary disputes, and informal interactions are part of that *boundary work* in which epistemic communities and professional groups manage the symbolic and social borders of scientific objects to achieve authority and control (Gieryn, 1983, 1999). Body, technologies, and medical records in this cultural frame “serve as tools to demonstrate professional skills and power, to increase one’s reputation, and to renegotiate identity” (Burri, 2008, 35), not only for clinical and therapeutic purposes.

In the ICU, the ethnocentric model leads to two main relational positions: the *closed* type, in which the native system of thought and behavior is opposed to a foreign system, focused on values, behaviors, and knowledge considered less significant than its own; and the *open* type, in which the awareness of functional proximity and the common general goal (the continuity of care) lead to less intransigency and more collaboration with foreigners. In daily practice, the closed position, shared by many doctors in ICU, often leads to conflict. In the following medical briefing, Greco reports the discussions he had with one surgeon about an 80-year-old patient, in a coma, with a severe brain hemorrhage:

Greco: [...] at 9, Fiore [the cardiac surgeon] arrives [in the ICU], without saying anything, goes straight to the patient, puts up [on the diaphanous] the CT scan, looks at it, begins to examine it. I went there and said “Sorry, did someone call

you?” [He answers] “No, no, but you know, I talked to my chief and he told me to come and see.” I say, “If you want to look, look, but before you write on the medical record, warn me, because here, you know, the rules are that the medical record is mine, the patient’s in intensive care so it’s my responsibility and you’re a consultant. Then I’ll call you when I need to. “Ah yes,” he tells me, and in the meantime he goes on, he looks, he keeps doing stuff. Then he comes... [points to Rossi in the meeting and bursts out laughing]

[Other doctors laugh too]

Greco: In short, Fiore starts to say, “But you know about this patient, you could make an external ventricular derivation [a temporary catheter for monitoring and relieving intracranial pressure and evaluating oxygenation in brain tissues].”

Rossi: As if to say, he wanted another CT scan.

Greco: Yes. He wanted another CT scan right away and a possible derivation, didn’t he? I started saying, “If she survives, in the afternoon we’ll do the CT scan”, and he [Rossi] said...

Rossi: I abruptly pointed out that we didn’t have time to waste. [Doctors laugh]

Greco: Then Fiore said, “OK, I get it.” He turns around and leaves.

Marino: With his tail between his legs and a little pissed off.

[Doctors laugh]

This discussion condenses both of the reasons for conflict between ICU doctors and heart surgeons: the overlapping of clinical and medical-legal responsibilities in patient management and therefore the definition of the hierarchy adhering to formal practice; and the divergence about the appropriateness of the treatment that heart surgeons would like to perform on the patient, seen by the ICU doctors as excessive and useless for the patient’s general condition. Such antagonism can be traced in the two professional cultures: surgeons tends to adopt a more normative style that subsumes the patient’s values and experience of illness in the doctor’s decisions, with the sole objective of avoiding the patient’s death at any cost; intensivists, conversely, seems to develop a more patient-centered approach, putting body suffering and pain first, and aiming at leading the treatment level to desirable but realistic benefits (Cassell, 2005). There are thus two cultural models, two professional communities that share the same general expertise, the same organizational spaces, the same operational resources, and of course the same patients, but which are constantly in conflict.

The tension between the two professional groups was tangible, especially among some doctors: it often happened that the heart surgery doctor would enter the ward, check which doctor was on duty in the ICU and immediately turn to leave, without even approaching the patients; or, more rarely, would enter to see the patient and leave without saying a word to the ICU doctor. It was also common for the heart surgeons to ask ICU nurses to act as intermediaries in communication with the ICU doctors.

10:45 a.m. Santoro [surgeon], enters the room and goes directly to the patient who had an aortocoronary bypass the day before. The ICU nurse approaches the bedside, while the doctor begins to browse the pages of the medical record. There is no ICU doctor nearby. Santoro also checks the pacemaker

at the edge of the bed, interacts with the device keyboard and returns to check the folder. He asks the nurse which doctor is on duty at that moment, and the nurse replies “Dr. Conti.” Then Santoro asks the nurse to tell Conti that maybe he should increase the dopamine because the pressure values are too low. The nurse leaves the room and goes to look for Conti, who is probably in the doctor’s office, while the surgeon keeps looking at the file. The nurse comes back 2 min later and says that Conti will pass by soon to check on the situation. Santoro thanks her and leaves the room.

The definition of a shared therapeutic pathway necessarily requires a continuous exchange of information and agreements on the therapeutic decisions to be made. Hyperspecialist training courses that feed self-referential professional cultures, the functional organization of hospitals that fragments practices into measurable micro-units of work, and medical-legal fears seem to encourage this kind of conflict and disincentivize cooperation within hospitals (Liberati et al., 2016). In the ICU, this was difficult due to the open conflict generated by the ethnocentric tension between native (intensivist) and foreign (cardiologists) doctors, but this did not compromise the health of the hospitalized patients, also thanks to the communicative mediation provided by the nurses.

The nursing staff, which works mainly on cardiology patients, is aware of their communicative function, as stated by two nurses with many years’ experience in the ICU:

Verdi: The cardiac surgeons are too fussy as long as they’re here. As long as they’re here, they seem to pay attention to any detail and the intensivist feels controlled. But they’re a little touchy, you know. Then we have to go.

Angeletti: That’s wrong because you can easily say what’s better to do, by talking about the patient together.

Verdi: And when surgeons tell you to give the patient another kind of diuretic instead of Lasix or an enhancer, or something else, the intensivist usually replies, “later,” “maybe,” “we’ll see.” If you look, they talk to us and we form the train. We’re between the anvil and the hammer. When the intensivist asks you “Who told you?” and you say the surgeon, sometimes he doesn’t even answer you. It’s like being a family mediator in a divorce case.

The medical record also contributes to the relational coordination between professional groups: in the absence of explicit communication or a joint definition of the treatment plan, the information reported in this document lets the surgeon understand the type of treatment prescribed by the intensivist and the evolution of the case. This device, born as a tool for clinical accountability and tracking professional responsibility, can in daily practice also become a fundamental communication interface in a system of fragmented knowledge (Bruni et al., 2007, 86), where “possession of the pieces of knowledge necessary for a shared practice is a collective problem regardless of the ability to put them together.” While this function is well-documented for remote healthcare, in the ICU this tool, alongside the nursing staff’s mediation, ensures the circulation of information between

two adjacent professional communities, with frequent direct contact but an inability to put the information together due to ethnocentric conflict.

There was a gap between the formal dimension composed of operational protocols and coded procedures, which accompanies the patient’s admission and discharge, and the concrete delivery of the trajectory of care through departmental practices. This gap was filled from time to time through the relational repertoires, and this was also visible in the activation of off-ward organizational resources. In the hospital intranet, all formal documentation (protocols and forms) was available upon request for diagnostic examinations. Nevertheless, in departmental practice the actual request for a diagnostic examination very often took place over the phone, via direct contact between the ICU doctor who introduced the case and explained the need for the examination, and the doctor from the department who would perform the examination, which also ensured a timeline. Only after the phone contact would the formal request be sent.

In the next ethnographic note taken during the daily medical briefing, Greco reports a case that emphasizes the gap between bureaucratic procedure and effective practice for requesting a diagnostic examination.

I said to Mariani [the cardiac surgeon who was monitoring the woman], “Did you ask for an echocardiogram?” “Of course,” she says, “I already asked on Sunday [today is Wednesday], but they didn’t come.” “How did you ask?” continues Greco. “I sent the paper with the request there... it’s impossible to work in this hospital, impossible!” So I picked up the phone... “You see,” I say, “you just phone Cardiology, if you phone Cardiology the echocardiogram will get done.” So I phoned Mari [a doctor in the Department of Cardiology]. Mari kindly says, “send the request down immediately and tell them to send the patient down immediately so we can see her.” And I didn’t have to do anything else.

The patient’s situation needed a special examination to clarify the diagnosis and thus proceed with defining the therapy, but the formal procedure for requesting the echocardiogram had not produced results after 3 days. It should also be taken into account that the request was made on the weekend, when the main services are ensured but all hospital activity slows down due to the partial overlap between clinical and organizational time.

In an ideal organization, each procedure is performed exactly on time and in the manner prescribed. Real organizations, on the other hand, see a sort of approximation of the ideal that is influenced by the contingency of daily life (Suchman, 2000). The procedure is well-known to all but without that phone call, the patient would have had to wait for the echocardiogram, even if the formal request was sent days before. Once again, it is the experiential knowledge of the professionals, who have developed an embodied knowledge of their own organization, that allows the formal procedure to be effective through actions that involve communicative and relational dimensions of organizational life.

DISCUSSION

The findings of this study indicate the tensions that exist within the hospital's organizational environment and that arise between the formal, rigid, and reductionist EBM approach and the less predictable and dynamic characteristics of daily life for health professionals in the ICU. These tensions are embodied in both the intra- and interprofessional communications that occur on a day-to-day basis in the ICU, as practitioners (ICU physicians, cardiologists, and nurses) work together to achieve their own professional group's ideals about the best outcomes for patients (e.g., patient-centered care). EBM's goal to improve health outcomes is undoubtedly worthy but, looking at daily practice, such outcomes almost never depend on individual and linear processes as they are understood by EBM tools. Greenhalgh et al. (2014) point out that "inflexible rules and technology-driven prompts may produce care that is management-driven rather than patient-centered." The diffusion of the managerial perspective in healthcare practice is pushing a sociological mutation of medical professions toward a *new professionalism*—that is, a professional vision and practice in which technical and disciplinary contents combine with managerial knowledge and skills, governance responsibility, and economic accountability (Evetts, 2011). Strict adherence to algorithmic rules that automate managerial and professional decision-making leads to sacrificing the actual and concrete needs of the specific patient and disregarding the tacit and experiential skills of health professionals. In situated practice, much more complex dynamics come into play, in which a broader range of social actors intervene, accompanied by different disciplinary perspectives and different professional and personal interests, along with a plurality of artifacts located in heterogeneous and interconnected contexts of use. This dynamic complexity cannot be made less unpredictable through the technocratic exercise of applied rationality, because collective and symbolic properties of organizational agency are involved (Weick, 1995). The environment of an organization, as Weick points out, does not exist independently from the organization itself, the people and artifacts that comprise it, the network of relationships that populate it and the consolidated habits and the system of meanings built and reproduced through time and space. This degree of reality (which those more interested in large numbers would call "details") disappears in double-blind randomized controlled trials: every hospital becomes identical to any other, wherever it is in the world; every professional is equivalent in competence and expertise to each of their colleagues; and each patient enrolled in the study is considered homogeneous to everyone else in the same category, regardless of their history, family and relational resources, and, last but not least, their biological uniqueness. The EBM paradigm, which has proven useful in advancing medical knowledge, becomes problematic when it is uncritically understood as a faithful description of reality and reality is expected to conform to it (Hanemaayer, 2019). From the heuristic tool as which it was developed, EBM has become an entire worldview—a reductionist and mechanistic ontology that can widen the irreducible distance between the universal abstract and the lifeworld if imposed as a hegemonic ideology on the complexity and fragility of organizational life.

It can also lead to a dangerous overlap between health and economic goals, as Greenhalgh et al. (2014) point out.

Empirical observation shows how EBM tools and technologies are enacted in practice (Mol, 2008). Referring to a medical-like context for the constant tension between an abstract ideal (the norm of law) and professional practice, Weick (1995, 30–31, *italic added*) writes: "When people *enact* laws, they take undefined space, time and action and draw lines, establish categories and coin labels that create new features of the environment that did not exist before." Similarly, in medicine, as the use of automatic blood pressure recording in ICU shows, introducing new technological tools and new operational modes generates an unprecedented context of action, something which did not exist before. Wenger (2003, 79) uses the term *alignment* to refer to the "mutual process of coordinating perspective, interpretations and action" in the same direction and toward a common goal. The discussion of the interpretative repertoire shows how clinical decision-making activates shared spaces of negotiation the outcome of which is mutual alignment on the practice plan. Suchman (2000) also states that alignment not only involves human actors but also concerns artifacts and technologies, whose role and contribution to practice is not given a priori but is also the product of collective storytelling composed of analysis, calculations, and social and material interactions. Alignment is never definitively accomplished but is always constrained to the specific subjects, devices, and artifacts involved in the concrete action. Universalistic premises are thus never merely applied to local interactive contexts but always creatively implicated in them, according to a logical movement that is neither deductive nor, conversely, merely inductive, but—to adopt Charles S. Peirce's definition—"abductive". It is capable, in short, of producing the everyday oxymoron that Timmermans and Berg (1997) call *local universality*, in which the general and the particular, the abstract and the actual, coexist in a creative, paradoxical, and often unpredictable way.

In this article, I sought to show how this theoretical concept is still effective in grasping the sociomaterial articulation of the health organization. Empirical study brings out the resignification practices through which the highly codified and formalized organizational infrastructure and the contingency of everyday life find stable trajectories. The two repertoires discussed here tell of this process, through which instrumental data, operational protocols, and guidelines are aligned and enacted in practice. The interpretative repertoire is a fundamental component of departmental life and, in particular, of the interaction between professionals and technologies; clinical activities and diagnostic and therapeutic technologies generate an enormous amount of information, which needs to be integrated into the patient's trajectory. This is possible through a process of translation and negotiation, which makes such data understandable and usable in care practice. The focus on interpretation practices helps reduce the effect of the so-called "mere tools argument" (Timmermans, 2000), according to which operational logic and the way technological equipment and instruments are used are the exclusive competence of engineers, designers, and technicians. Looking at daily life, medical practices are the result of uninterrupted interaction between human actors and material elements with high technological

content. If we intend to analyze how departmental practices are actually realized, we cannot ignore the link between the human and the material component, and must avoid reducing the second to a simple appendix to the first. The interpretative repertoire highlights how including technologies in a diagnostic–therapeutic trajectory can change the purpose of treatment, imposing technological objectives (e.g., pursuing a certain value detected instrumentally or producing documentation on the patient’s path through instrumental reports) on clinical goals. Information and data from different sources (instrumental data, visual and auditory observation) are also selected and organized in specific hierarchies that determine, depending on the objective, their importance relative to the others, virtually equivalent.

In this article I have also sought to show how medicine in its practical application not only comprises tissues, organs, and equipment, as well as diagnostic and healing drugs and tools that act on inert bodies, manipulated by emotionally neutral beings who are also able to naturally coordinate themselves. Adopting the ethnographic perspective, care practices emerge rather as an uninterrupted process of negotiation between the different elements that comprise care work. It develops over time and space through different connections and nodes, taking the form of *knotworking* (Engeström, 2018), which means series of interdependent relationships that create contexts of mutual proximity in which grow collaborative practices that transcend formal organization and professional practice. This appears clearly in the interaction between the professional communities of the ICU doctors and cardiologists, which is characterized by a conflict caused by ingrained ethnocentric visions. These communicative and organizational conflicts, which potentially compromise the effectiveness of clinical treatment in the postsurgical phase, are often resolved through the mediation of nursing staff, thereby building a relational bridge between the two professional groups and enabling decision-making processes to continue. The medical record is also a relevant knot in the network, allowing the circulation of clinical information and replacing communicative exchanges between physicians. This “rapidly pulsating, distributed, and partially improvised orchestration of a collaborative performance” (Engeström, 2018, 86) depends both on intersubjective understanding and distributed control, and it does not fit the codified and universalistic managerial tools because of its changing and unstable form in daily practice. Ethnographic observation captures these dimensions that remain invisible to formal documentation and provides a theoretical-methodological tool to analyze its phenomenology for scientific and managerial purposes (Liberati et al., 2015). It is the only lens that can grasp the effective development of trajectories of care, organizational routines, and working practices that usually result as creative local answers to constraints and limitations that are globally established.

CONCLUDING REMARKS

Standardization is the global process that aims to make the world more homogeneous, efficient, and effective through formal rules, codified tools of control, and regulation of organizational and social life (Timmermans and Epstein, 2010). As discussed

in this article on the case of EBM, the daily practice of an organization is not reducible to the formal and technological devices used to govern and coordinate it. Two aspects break from practice and “disturb” the ideal use of protocols and guidelines in medicine (as in any other organization): the contingency of life and the irreducible social and symbolic components of human agency. The first forces standards to face a changing and (in many ways) unpredictable reality, the variability of which far exceeds even the most complex computational algorithm. The second concerns the human faculty of giving meaning to action, a property that is not in the subjects or objects themselves but emerges from shared processes of signification (Weick, 1995). *Local universality* is the emerging and creative response in daily organizational life to such perturbations of the abstract ideal of standards. Recognizing the condition of local universality is an important challenge for contemporary medicine. The acceptance of the local dimension in health practices leads to what Mol (2008) calls the *logic of care*, a model of reasoning in which the concrete unfolding of care and cure events replaces the objective and anonymizing abstraction of medical-scientific research and health management. Governance policies and managerial approaches can no longer ignore the specific organizational conditions that care processes are deployed in, and the same medical-scientific research should develop reflexive analysis skills on the logic of care and the local dimension of organizational life. This would involve ceasing to consider these aspects as elements of disturbance but, on the contrary, taking note of their incidence and inevitability in trajectories of care. Spaces and places are needed to develop and experiment with local knowledge, to embed social skills in the organizational culture so they can be shared management tools, grasping that daily complexity that constitutes care and cure work (Ripamonti and Scaratti, 2012).

In this study, I took EBM as emblematic of the global phenomenon of standardization that can take different forms and dynamics in diverse organizational and sociocultural contexts (Ritzer, 2013). I tried to show how the standardization process is carried out in daily organizational practice through two important resignification repertoires, but more remains to be investigated. Further scientific studies might regard the epistemological and sociological analysis of the spread of the EBM paradigm from the medical field to other disciplinary and professional domains. Given the success that this reasoning and decision-making model is experiencing outside the confines of medicine, it would be interesting to understand what forms it takes in different epistemic communities and professional groups. The theoretical concept of local universality should also be empirically studied in social contexts other than the health organizations where it was developed. Nowadays every service or production sector is facing the phenomenon of standardization, from air transport to universities. It is important to assess the gap between the universal ideal and the actual functioning and real problems of daily practice in these sectors, too. Finally, another area of investigation arises from the extraordinary (and dramatic) impact that the COVID-19 pandemic is having on global processes and local practices. Its sudden (albeit not unpredictable) appearance in early 2020 and its subsequent dramatic spread across the globe are stressing

healthcare organizations and professionals, especially in ICUs, which are the extreme measure of resistance to the aggression of the virus. It is also stressing actual standards and codified rules that often seem ineffective to control a phenomenon whose behavior patterns we do not know. The approach presented and discussed in this study can be useful for identifying the lines of change going on and for managing situated practices to guide this change toward greater organizational and professional resilience.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

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ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Ethics Committee of the Hospital where the study took place (approval no. FCC174/II). The agreement required that I ensured the anonymity of the organization, professionals, patients, and caregivers. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of Interest: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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