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Dilemmas, Tetralemmas, Reimagining the Electronic Health Record

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With the transition from paper-based to computer-based records, nursing practice shifts to computerized documentation of care in the electronic health record (EHR). Viewed not only as an electronic document, but as an instrument of modern economic and technological ideology that serves organizational goals of cost-efficiency, the EHR can be perceived as creating a dilemma for a patient-centered nursing practice. Viewing the EHR as relying solely on the use of standardized languages begets a number of questions and furthers the dilemma for nurses. Through a discussion that draws on the Indian tradition of the tetralemma, authors transcend the EHR/nursing dilemma. **Key words:** *categorization*, *dichotomy*, *dilemma*, *electronic health record*, *standardized nursing languages*, *technology*, *tetralemma*

IN FEBRUARY 2009, the University of Victoria in British Columbia, Canada, organized an international conference addressing Information Technology and Communications in Health. The take-home message of this conference was that the electronic health record (EHR) is a high-priority agenda item with the healthcare authorities in the United Kingdom, the United States, and Canada among other countries. Another strong message was that the standardized languages present the only option for moving forward with the EHR. In fact, Mike Bainbridge, a keynote speaker from the National Health Service, United Kingdom, called to "stop the standardization wars because they are boring."

However, an observation that we as attendees made was that despite the enthusiastic tone of the keynote speakers advertising the world of the standardized EHR, many healthcare providers were much more reluctant to follow this call. From physicians in private practice[1–3] to nurses in hospital wards[4,5] to nurses in academia,[6] the healthcare providers pointed to their concerns with the use of the EHR in general and the standardized languages in particular. Another observation related to the somewhat misleading use of the notions of patient safety and quality of patient care that were the buzzwords, accompanying the topic of clinical implementation of the EHR. Sadly, the underlying meaning of these notions of patient safety and quality of care appeared to be the questions of accountability and organizational quality assurance as opposed to the question of how the EHR directly benefits the health of individuals and families. Furthermore, the role of the EHR in providing standardized and aggregated data for resource management and allocation on organizational and systemic levels with a goal of cost-efficiency featured as a pervasive context of many discussions. In contrast, development of patient portals, which are Internet-based applications that allow direct patients' access to "their" EHRs, was discussed in only *one* of more than 100 presentations.[7]

Following the transition of the healthcare system from paper-based to computer-based

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records, nursing practice shifts to include the computerized documentation of care in the EHR. In nursing, although the *critical* discussions of the EHR are just starting to make their way into nursing journals, the topic of technology and its relationship to nursing practice has been a long-lasting interest for many nursing scholars. For example, Betts[8] uses the word technology in a broad sense and addresses a "technology/caring" dilemma familiar to the nursing audience. Specifically, Betts argues that the economic and *technological* ideology that drives modern progress imposes a *techno*-rational basis of nursing practice. This, according to Betts, undermines the holistic values and goals of nursing, and presents a "bleak picture of [nursing's] long-term prospects."[8(p186)] Trying to make sense of this picture where technological advances such as the EHR may present the "techno-rationality/caring" and "the standardized EHR/individual patient" dilemmas for nurses, we turn to an Eastern philosophical notion of the tetralemma.[9]

Thus, the purpose of this article is 2-fold: to problematize the unquestioned acceptance of the EHR as a way of documenting patient care and then to transcend a problematic nature of the "technology/caring" or "the standardized EHR/individualized patient care" dilemmas. Problematizing the topic of the EHR begins with conceptualizing the EHR not only as an electronic document but as an instrument of modern economic and technological ideology that serves goals of organizational systems rather than goals of a patient-centered nursing practice. Next, we consider a prevailing view of the EHR as relying solely on the use of standardized languages. Our argument reinvokes the discussion of standardized nursing languages, categories/labeling, and the problems these create for nurses and patients. Drawing on an Indian philosophical tradition of the tetralemma, we attempt to transcend the conflicting epistemologies of nursing and technology. The framework of the tetralemma challenges the conventional (Western) inclination to dichotomize knowledge into categories of *this* or *that*, dualistic categories from which we are then forced to choose. The tetralemma disrupts the dualism by not only increasing the number of possibilities but also through holding in tension the coexistence of seemingly incompatible choices. Finally, we call for nurses themselves to participate in the dialogue about the EHR to ensure a full representation of nursing practice through nursing informatics.

CONCEPTUALIZING THE EHR

The EHR is an electronic database that contains the aggregated health data of healthcare users.[10] At the level of individual healthcare facilities, patient information, which traditionally has been documented in paper charts, has increasingly been recorded as computer files and stored in the form of electronic medical records. Designated health history information from the electronic medical records of each patient becomes part of a network, or the EHR, shared between many healthcare facilities. The EHR allows those healthcare providers authorized by the patient to obtain healthcare information related to the patient's past episodes of healthcare.[10] It is planned that in the United States the EHR will eventually allow healthcare providers nationwide access to their patients' information.[10] Healthcare organizations utilize relevant organization-level data contained in the EHR to manage financial and human resources.[11–14] In addition, aggregated deidentified data from the EHR will be available for use by researchers and policy makers.[10,12]

As healthcare systems in a number of countries transition from paper-based to computer-based records, nursing practice shifts to include the computerized documentation of care in the EHR. It is claimed that through the EHR, nurses who provide direct patient care can have convenient access to a patient's health history[10] linked to computerized standard care plans,[15] "best evidence" databases,[16] and facility policies. A relatively new nursing specialty, called nursing

informatics, is at the forefront of the computerization of nursing documentation. In addition to capturing the attention of nurse administrators and informatics nurses, the introduction of the EHR in the healthcare system generated significant discussion among other groups of nurses. Obviously, questions concerning the types of nursing data that will be included in the EHR and the terminologies used to convey these data are important for nursing.[10,11,17]

It is emphasized that in the EHR, data needs to be recorded and stored in a standardized form.[13,18] The use of existing nursing terminologies may be a "way to ensure standardization so patient care data can be stored in an unambiguous way."[13(p2)] Thus, nurses in the United States and internationally who have been involved in the development and refinement of various standardized nursing languages and classifications are currently active participants in discussions on the topic of the EHR. The standardized nursing languages that are most frequently mentioned as suitable for coding nursing-specific data in the EHR include the North American Nursing Diagnosis Association (NANDA) taxonomy of nursing diagnoses, Nursing Intervention Classification, and Nursing Outcome Classification.[13,14,19] Some nurses propose that the inclusion of standardized nursing languages in the EHR offers the following benefits for nursing: increasing the visibility of the nursing profession so as to influence reimbursement and policy decisions,[10–13,17] enhancing communication between nurses and members of the multidisciplinary healthcare team,[11–13] and most prominently, facilitating the achievement of the organizational, systemic, and governmental goals of cost-efficiency in the delivery of healthcare.[12–14,19]

TECHNOLOGICAL IDEOLOGY AND NURSING

In an article exploring what nurses "need to know,"[8(p174)] Betts argues that modern progress, being a technological and economic Western ideology, is not an innocent process of growth and betterment. Two Australian authors, Barnes and Rudge,[20] explain how healthcare management in the form of electronically based information technology (eg, casemix) acts "to align health care providers, and nurses in particular, to the aims and objectives of a neoliberal mode of government"[(p306)] in Australia. Similarly, Mechanic[21] discusses managed care in the United States. All these authors, to various extents, unpack and challenge the erroneous assumption of "the *principally neutral* foundation of technology,"[8(p182)] where technology means "inputs (machines, bureaucratic procedures, management strategies) organized to achieve specified outcomes."[21(p459)]

Although Barnes and Rudge,[20] Betts,[8] and Mechanic[21] do not directly talk about the EHR, it is possible to interconnect their texts as highly relevant to the present discussion. Mechanic elucidates the link: "managed care seeks to bring organized processes to bear in making cost-effective treatment decisions using sophisticated information systems, real time communication among providers and managers, evidence-based medicine, and scientifically based practice guidelines."[21(p465)] Thus, the EHR as one of the multiple elements of healthcare information systems can be considered part and parcel of managed care, which, in turn, is an instrument of the progressive economic ideology.

Betts asserts that progress in the postindustrial period can be understood as a techno-economic ideology based on principles of objectivity, efficiency, standardization, and measurement, which "cohere into an oppressive dogma of materialism and reductionist thought."[8(p179)] In contrast, commitment in nursing is generally conceived of as holistic practice and attention to caring nurse-patient relationships, which ideally are nondualistic and nonreductionist.[8] Thus, according to Betts, technological ideology and nursing are based on "dissimilar [and conflicting] epistemologies."[8(p183)]

In the context of the free market economy, the "merging of health with

mathematics" occurred, which requires that the practices of clinicians be aligned with the "economic/managerial goals of efficiency and effectiveness."[20(p310)] In such a situation, the concern is that economic ideology in healthcare, which privileges "a purely techno-rational basis of practice,"[8(p182)] poses a threat to the "holistic ethical position of nursing."[8(p183)] Nurse researchers who explored some of the contextual factors influencing contemporary nursing practice share the concern expressed by Betts. For instance, MacKinnon and McIntyre[22] and Rankin[23] observed how requirements for nurses to attend to institutional priorities driven by the managerial discourses of efficiency and accountability divert nurses' time and attention from nursing the patients and "towards nursing the chart [or the EHR], the unit, and the institution."[22(p69)] This comes perhaps as no surprise considering that, despite claims to the contrary, "management efforts thus far have been directed more to controlling expenditures than to enhancing quality [of patient care]."[21(p465)] To summarize, we suggest that the argument formulated by Betts and supported by other authors about the dissimilar goals of technological ideology and nursing informs our understanding of the EHR and compels us to question its uncritical acceptance.

Notably, many articles that address the role of the EHR in nursing maintain a cheerful tone and do not problematize the use of the EHR, for example, in the way that the authors[8,20,21] cited above did, although the latter authors were not referring to the EHR explicitly. Interestingly, what Betts[8] and Barnes and Rudge[20] perceive as problematic, namely, nurses' uncritical compliance with and participation in the discourses and practices of progressive techno-economic ideology, some authors seem to encourage: "the nurse's ability to . . . contribute to all aspects of rigorous economic evidence is an essential competency for responsible practice."[14(p101)] Betts' argument about a conflict between the techno-economic ideology of healthcare and nursing's caring mandate, extrapolated to the discussion of the EHR, suggests that cost-driven rationales and organizational priorities divert nurses' attention away from caring for patients toward perfecting electronic documentation in the form of the EHR.

PROBLEMATIZING THE STANDARDIZED EHR

It seems important to consider a multifaceted issue that relates to the claim that patient information should be documented in the EHR in a language that is not only unambiguous but necessarily *standardized* in the form of codes and categories.[13] It is even claimed that those nursing notes in the EHR that are not coded in the form of standardized languages are too expensive, cannot be retrieved, aggregated, or analyzed, and become "a data cemetery."[24(p12)]

Concerns are perhaps better expressed as questions: Does the above mean that a "patient's subjective data," or a person's perspectives, needs, and wants expressed in her or his own words, will not be included in the record? What about nurses' observations or comments that fall outside the preestablished categories of the EHR? Do these questions suggest that a patient's paper chart will be maintained along with the EHR "just" for the "secondary" purpose of reflecting the patient's or the family's view and to provide a medium for nurses to share their observations so that the continuity of care is sustained? In expressing a view that clearly elevates the epistemological value of narrative over standardized language, Krysl suggests, "It is not a failure of data that the narrow range of fact it delivers is so limited. It is a failure of our culture that data is considered more important than story, because it is story and only story that conveys truth."[25(p31)]

While it is understandable that cost-rationing and policy-making rely on standardized, depersonalized, and aggregated data compiled in the EHR, what remains obscure is how patients, in their immediate healthcare experience, can benefit from having

their health records written in the form of codes and standard terminologies, and how this documentation practice may affect nurse-patient interactions. If technology limits what can be accounted for, what nurses are able to see/name, then the technology begins to shape *what counts* as nursing knowledge. This objectified shaping of practice undermines a central experience of nursing: the subjective experience of care.

LIMITATIONS OF STANDARDIZED LANGUAGES

An example of nursing diagnosis

Exploring the issues related to the use of *standardized* nursing terminologies to document patient information in the EHR, we turn our attention to some of the problems and critiques that have historically accompanied the process of development and application of these standardized languages. Specifically, the NANDA taxonomy of nursing diagnoses presents an interesting case for reflection. Many nurses in North America and internationally are familiar with this taxonomy, and the topic of NANDA is widely presented in the literature. However, the purpose of the current discussion is to focus specifically on the debates that surround the use of this standardized language of nursing diagnosis in nursing practice and its effects on nurse-patient interactions and on the patients themselves. Although the specific example of the NANDA taxonomy is chosen for this discussion, the application of any standardized language to classify human beings and human phenomena may result in tensions similar to those observed in the use of nursing diagnosis.

First, many situations in nursing practice require that nurses exercise their clinical judgment, for example, to decide on a course of action when a patient's condition changes. The process of diagnosing is a familiar example of the nurse's or physician's participation in clinical judgment. When using the NANDA taxonomy, nurses diagnose their patients' actual or potential health problems and formulate the results of their judgment, using standardized statements that describe the patients' biophysiological, behavioral, emotional, and cognitive responses to illness and health situations.[26] While it has been suggested by Gordon and other proponents of nursing diagnosis that nurses should arrive at the diagnostic statement through a mutual process of nurse-patient collaboration that ensures that the patient's personal perceptions, values, and plans are considered,[27] Mitchell argued that "the idea of 'm utuality in establishing diagnosis' is a myth since the nurse's value as expert will overrule the patient's when incongruencies exist."[28(p100)]

Considering the above in relation to the topic of the EHR, raises the question of whose perspective will the standardized statements of the EHR capture—the nurse's? the patient's? a collaborative perspective, hopefully?—and in the case of conflicting views, how will a nurse document the patient's preferences if the EHR's language is limited to a specific set of terms? Similar to some nurses' contempt for the language of nursing diagnosis that privileges standardized statements over the patient's personal narrative,[17,29] many nurses may express frustration with a view that considers the narration of the patient's personal perspectives in the EHR an expensive "data cemetery."[24(p12)] It is worth mentioning here that a review of the nursing diagnosis literature written over the last 2 decades reveals that the idea of collaborative nurse-patient diagnosis, which highlighted the function of nursing diagnosis for *patient* care, has gradually disappeared from journal discussions of nursing diagnosis. It has been replaced by an ever-growing emphasis on the role of nursing diagnosis in securing reimbursement for *nurses'* work and assisting *managerial* goals of cost-efficiency, 2 themes that similarly underpin the current discussion of the EHR.

Second, the process of diagnosing, as well as the process of recording the patient's complex and often ambiguous data in the form of standard codes, presupposes that a nurse would classify the patient, that is, reduce a

person to her or his "component parts" of body systems, cognition, behavior, emotions, spirit, and so on and then label each part with a preestablished statement. This practice has been criticized by Crowe and others as producing negative consequences for nurses and patients.[30] On the one hand, when a person's health conditions are identified with the standard diagnostic statements, there is the danger that these standard labels may preclude a nurse from acknowledging the uniqueness of each individual.[30] An assigned diagnostic label, similarly to any other preconceived view, may interfere with the nurse's ability to come into the nurse-patient encounter with openness to listen and to discover who that individual is.[30] Consequently, not only is the patient's personal meaning excluded,[30] but the nurse can also fail to notice signs and symptoms that fall outside of the specific already diagnosed condition. In a study that surveyed hospital nurses' opinions about standardized care plans in the EHR, the majority of nurses believed that patients' individual problems and needs can be missed when standardized care plans are used.[15]

On the other hand, the practice of categorizing and labeling patients is reductionist and "originates ... from the 'detached stance' of the nurse as objective scientist."[31(p342)] As such, this practice objectifies persons to the extent that they can be seen by healthcare providers not as human beings but as sets of problems and symptoms.[31] Both the reification of persons as objects and the judgment of their actions, thoughts, and emotions create persons' suffering.[28] Crowe[30] and Powers[29] contend that the process of categorizing and labeling may perpetuate marginalization and oppression of patients.

Categorization and labeling

An effort to locate any literature on patients' perceptions of and experiences with the EHR was without success. Perhaps the topic is too new. Even more surprising is the paucity of literature on patients' experiences with nursing diagnosis, a topic that has been discussed from nurses' perspectives for decades. What can be read/heard in the literature are accounts of people's experience with being categorized and labeled in the healthcare system. For example, a nurse researcher recollects her participants' stories: "Most significantly, women struggled with the corollary that in accepting assigned names or labels of illness, aspects of personhood [were] lost .... It seemed that these women were made to feel that they were no longer part of mainstream humanity."[32] A person living with a mental health issue says: "I object to the way power is stripped from me, the way that I am approached not as an individual, but as a manic-depressive."[30(p130)] A woman living with a disability shares: "I find it very difficult to have to slot myself into that category .... When you have to check off 'are you disabled, working?' whatever. When the choices are limited to describe yourself and disabled applies, but it's not how I think of myself."[33(p1844)]

It seems important to raise for consideration the question of the usefulness of categories themselves as a means of capturing the significance and meaning of individual (patient's) lives. The discussion here pertains not only to categories that claim to represent health experiences, as in diagnostic categories, but often imbued categorization of people as a means to "capture" or to quantify the context of their lives. Although the technological categorization of people through EHR continues to reify the use of categories and specific categories as meaningful and stable, an engagement with the lived realities of people lives, that is, the actual material, social and discursive circumstances in and through which a life is constituted, serves to undermine the suggestion of individual lives fitting meaningfully into categorical labels. The supposition of a representative truth contained in a category assumes "there is such a thing as a literal account, the final truth of the matter, stripped of connection with other matters."[34(p213)] In particular, for people whose experiences are constituted beyond the prevailing social order,

categorization serves to further marginalize their experience. Categories are likely to distance healthcare providers from understanding the complex realities of lives constituted through the intersection of race, class, ethnicity, gender, and sexual orientation.[35,36]

IMPLICATIONS FOR NURSING PRACTICE: NEW POSSIBILITIES

Envisioning the EHR as tetralemma

Advocating for a truly patient-centered care, Crowe[30] critically deconstructs the practice of using psychiatric diagnosis in mental health nursing practice. She appears to suggest that nurses are confronted with a dilemma, that is, they often have to choose either to endorse the *standardized* language of diagnosis (and we add, of the EHR) as central to nursing practice or to "attend to the meaning of the *individual's* experience within its sociopolitical context."[30(p126)]

While there is a certain appeal to conceptualizing ideas as dualisms, for example, the highlighting of particular strengths and differences, "the difficulty with dualisms is not that one is faced with different, often opposing views, but that we are unable or unwilling to hold different views and [are unable or unwilling to] resist the temptation to choose one or the other side of the dualism."[37(p236)] Implicit in this choosing is the valorizing of one part of nursing practice (that drawing on technical, empirical knowledge) and the devaluing of nursing practice informed by the subjective experience.[37] How then might we move beyond the dichotomy that forces us to view nursing knowledge in this hierarchical manner? One way to enlarge upon conceptualization and decision making is to move beyond the Western philosophical framework of dilemmas, to the Eastern (Indian) tradition of the tetralemma, in which each proposition is defined[9] by 4 possibilities, rather than 2.

According to Garfield's reading of the Buddhist philosopher Nagarjuna, human possibilities are expanded if we transform traditional Western dilemmas into tetralemmas.[9] To explain, what used to be an "is/is-not" dilemma, becomes the "is/is-not/both-is-and-is-not/neither-is-nor-is-not" tetralemma.[9] The notion of the tetralemma helps us to move beyond the need to choose between the 2 possibilities presented in the dilemma to consider possibilities that are expanded not only in number (totaling 4), but are also expansive in providing a way to hold together seemingly contradictory ideas. Moving toward this alternative engagement with the topics such as the EHR, provides us with a way to escape, or to transcend, the dichotomous thinking through which alternative perspectives of nursing knowledge are necessarily maintained in a hierarchy. The expansion of thinking beyond dualism allows us to value or to engage with all aspects of a topic equitably; our ability or perhaps our willingness to hold in balance all aspects of a topic during consideration disrupts the preestablished dominance of a particular view.

We suggest that conceptualizing the use of the EHR in nursing practice as a tetralemma can transcend the "technology/caring" or "the standardized EHR/individualized patient care" dilemmas and view these (and other) seemingly contradictory options as coexisting and being useful for certain situations and contexts. In the example that follows, the 4 possibilities of the tetralemma are identified as

- *This*—Standardized language and categorical generalized knowledge.
- *That*—The lived life and particular knowledge.
- *This and That*—Drawing on categorical generalized knowledge and the particular realities of the lived life.
- *Neither This nor That*—The nondiscursive: Engagement with the arts and humor for example.

The following paragraph intends to illustrate the notion of tetralemma in relation to nursing practice. Everyday nursing practice, in which the nurse might provide care, for example, for a person newly diagnosed with diabetes, benefits from knowledge conceptualized as other than in dualistic forms.

Nursing practice in this situation would unequivocally be informed by categorical knowledge of the pathophysiology underlying diabetes, pharmacological intervention, and the development of self-efficacy of the person in caring for their needs (the "this" of the tetralemma). Surely the particular realities of a person's individual life (ie, the material and social contextualities of this person's life with diabetes) would also inform nursing practice. These particularities may include resources to meet nutritional needs, medication, support for lifestyle changes, or the considerations of how a "diabetic regime" might fit within and alongside the life. And so the possibilities have moved to "this and that." The tetralemma recognizes, however, that even with the "this and that," there is something else, namely "neither this nor that," not accounted for or left out of the possibilities for practice. In this case, we identify the "neither this nor that" as nondiscursive nursing practice: engaging the arts, poetic language, humor, or intuitive practices. Nondiscursive symbolisms express meanings in the realms of aesthetic experiences, moving us beyond the discursive literal meanings expressed in either generalized knowledge or the particular knowledge of the lived life.[38] The "neither this nor that" restores the balance of the aesthetic with the other pieces of the tetralemma, reminding us to attend to, to account for, the fullness of human experience.

The tensions between and among the possibilities for practice as outlined here are considerable. The tetralemma does not suggest we move beyond the tensions but recognize the productivity of the tension itself. The strength of the tetralemma is in recognition of the interdependence of the possibilities and the contribution each part of the tetralemma might make. Turning to the topic of the EHR, we can explore the possibilities created for nurses' engagement with the EHR, using the framework of the tetralemma. To simplify for the purpose of illustration, we suggest that depending on the situation nurses can choose the following:

- *This*—To utilize official diagnostic statements, for example, when picking a relevant code from a standardized vocabulary used in the EHR.
- *That*—To use an individualized language and approach when interacting with a person-patient. In the EHR, to use narrative to describe particular realities of a patient's lived life.[39–41]
- *This and That*—To draw on both a standardized statement and a description of the person's subjective experience, for instance, when communicating with members of the healthcare team.
- *Neither This nor That*—Not to use either of these linguistic modes in some situations, for example, when humor or an aesthetic form of representation seems more relevant for the persons involved.

Although for the purpose of simplification this example suggests a discrete nature of the options, the tetralemma reminds us of the interconnectedness of these options when they occur "all-at-once" in nursing practice. Along with what is listed, nurses' awareness of the sociopolitical contexts and discourses of practice environments and of the larger society, an awareness that Betts[8] and Crowe[30] highlighted, is equally important.

Reimagining the technology/caring dilemma

In the current nursing literature, many of the voices discussing the EHR and the standard languages sound as if they reflect (and recreate) the domination of techno-economic concerns over patients' concerns. The observation that the nursing diagnosis taxonomy and classification systems transitioned from being presented as benefiting patients to being presented as benefiting nursing's professional interests and organizational and governmental interests, supports the above assertion. Thus, to envision the coexistence of *all* alternative options regarding nurses' engagement with the EHR, the option that is listed first, namely, the prospect of using the standardized nursing languages as a part

of the EHR to codify patients' data, should be reimagined. Reimagining may depend on our collective and individual ability to recast nursing practice from *prioritizing* the EHR and its component classification systems to acknowledging that they play a *role* in ever-growing concerns about the economic and managerial focus of the healthcare system, but that this role and this focus neither define nor determine *all* nursing. Technology and economics should be considered, but they should not dictate how nurses provide care and interact with people.[31]

Concluding remark: Staying open to possibilities

Nursing authors who address in their writings technology and the EHR have considered some possible solutions for the concerns they expressed. For example, Betts proposes the necessity of trying to change "the culture at large"[8(p186)] through first admitting that "we have a problem" with the pervasiveness of techno-economic ideology and then beginning a "serious dialogue concerning *Human Progress* and the totality of its effects."[8(p186)] As a nurse educator, Betts has started this dialogue in nursing classrooms where he encourages a critical examination of the contexts in which nursing practice occurs. Barnes and Rudge[20] give an example of nurses who lobbied for a wider range of casemix codes in their unit's coding system that would allow documentation of the individual circumstances of their patients. Mechanic[21] asserts that whatever technological advances may occur, 2 essential features of healthcare are the reduction of stress for patients and the provision of social support, which are achieved through compassionate communication between health providers and patients; in addition, "organizational arrangements"[21(p466)] supporting these practices are required.

The framework of the tetralemma discussed in this article provides an opportunity to traverse the technology/caring dilemma through expanded ways of thinking about nursing practice and technology. Although technology has the potential for the inclusion of context and narrative within the EHR,[39–41] this option is not discussed in nursing literature and nurses do not seem to be aware of and to advocate for it. A lack of familiarity with the potential of information technology among professional nurses not only limits what we are able to see or imagine but also inhibits the contribution that nurses might make to the formation of the EHR in ways that account for, or even foreground nursing practice. As the introductory part to our article implies, there is the risk that those *outside* the discipline of nursing will decide what constitutes nursing knowledge in the EHR. Equally important, however, is the concern about the voices *within* nursing that limit the conceptualization of the EHR to its ability to capture the standardized data only, as if suggesting that this type of knowledge is all that matters.

Collaboration between nurses and information technology specialists working on the implementation of the EHR is essential to address these concerns. Perhaps even more important is the need for many more nurses to become information technology specialists themselves, and for all nurses to become familiar with information technology. This suggestion relies, however, on the caveat that those nurses developing and evaluating information technology for nursing practice also value practice informed by nurse-patient relationships based on caring in the sociopolitical context. The technology/caring dilemma threaded through many discussions of nursing informatics can only benefit from disruption—through people who value multiple sources of nursing knowledge and through philosophical frameworks such as the tetralemma, that help us move beyond dichotomous positions.

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