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Towards a person-centered medical education: challenges and imperatives (I)

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Abstract It is increasingly claimed that modern medicine has entered into crisis —a crisis of knowledge (uncertainty over what counts as "evidence" for decision-making and what does not), care (a deficit in sympathy, empathy, compassion, dignity, autonomy), patient safety (neglect, iatrogenic injury, malpractice, excess deaths), economic costs (which threaten to bankrupt health systems worldwide) and clinical and institutional governance (a failure of basic and advanced management, inspirational and transformational leadership). We believe such a contention to be essentially correct. In the current article, we ask how the delineated components of the crisis can be individually understood in order to allow them to be collectively addressed. We ask how a transition can be effected away from impersonal, decontextualized and fragmented services in the direction of newer models of service provision that are personalized, contextualized and integrated. How, we ask, can we improve healthcare outcomes while simultaneously containing or lowering their costs? In initial answer to such questions —which are of considerable political as well as clinical significance— we assert that a new approach has become necessary, particularly in the context of the current epidemic of multi-morbid and socially complex long term illness. This new approach, we argue, is represented by the development and application of the concepts and methods of person-centered healthcare (PCH), a philosophy and technique in the care of the sick that enables clinicians and health systems to re-introduce humanistic ideals into clinical practice alongside continuing scientific advance, thereby restoring to medicine the humanism it has lost in over a century of empiricism. But the delivery of a person-centered healthcare within health systems requires a person-centered education and training. In this article we consider, then, why person-centered teaching innovations in the undergraduate medical curriculum are necessary, as a first step, to achieving real progress in the integrity of modern undergraduate medical education. Without such innovations, we do not believe that suitable foundations for subsequent innovations in postgraduate training can

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be laid and, with them, a continuing professional education in PCH that spans entire medical careers. We first review the historical perspectives of relevance to our arguments and then advocate a radical re-think of what we believe to be the urgent imperatives for a modern medical undergraduate and postgraduate training.

PALABRAS CLAVE
Compasión;
Empatía;
Medicina basada en la evidencia;
Educación médica;
Cuidados sanitarios centrados en la persona;
Medicina centrada en la persona

Hacia una educación médica centrada en la persona: retos y exigencias (I)

Resumen Se afirma, cada vez con más fuerza, que la medicina moderna ha entrado en crisis —una crisis de conocimientos (incertidumbre sobre qué cuenta como "evidencia" para la toma de decisiones y qué no), de la atención (un déficit en la simpatía, empatía, compasión, dignidad y autonomía), de la seguridad del paciente (negligencia, daño iatrogénico, mala praxis, exceso de mortalidad), de los costes económicos (que amenazan con la quiebra de los sistemas de salud a nivel mundial) y de la gestión clínica e institucional (un fracaso tanto en la gestión básica y avanzada como de liderazgo inspiracional y transformativo). Creemos que tal aseveración es esencialmente correcta. En el presente artículo nos preguntamos cómo podemos comprender individualmente cada componente de esta crisis con el fin de poder abordar el problema en su conjunto, cómo podemos efectuar la transición desde unos servicios impersonales, contextualizados y fragmentados hacia nuevos modelos de prestación de servicios centrados en la personalización, contextualización e integración, y cómo podemos mejorar los resultados de la atención sanitaria a la vez que se contienen o reducen sus costes. Como respuesta inicial a este tipo de cuestiones (que son de alcance clínico y político) afirmamos que es completamente necesario un nuevo enfoque asistencial, especialmente en el contexto epidémico actual de enfermedades crónicas, comórbidas y socialmente complejas propio de las sociedades desarrolladas. Se argumenta cómo este nuevo enfoque puede estar representado por el desarrollo y aplicación de nuevos conceptos y métodos de una asistencia sanitaria centrada en la persona, una filosofía y técnica del cuidado de los enfermos que permite a los médicos y a los sistemas de salud integrar la rehumanización en la práctica clínica junto al continuo avance científico, reinstaurando así en la medicina el humanismo perdido tras un siglo de empirismo. Pero la aplicación de los cuidados sanitarios centrados en la persona dentro de los sistemas de salud requiere también de una educación y formación centradas en la persona. En este artículo se discute la necesidad de innovar los planes de estudio con contenidos sobre la asistencia sanitaria centrada en la persona, como un primer paso para lograr el progreso real hacia una enseñanza médica moderna e integral. Sin este tipo de innovación del Grado no se introducirán las bases adecuadas para una posterior innovación efectiva de la enseñanza de posgrado y de la formación continuada sobre asistencia sanitaria centrada en la persona, mantenida a lo largo de toda la carrera profesional del médico. En primer lugar, revisamos las perspectivas históricas relevantes para nuestros argumentos y abogamos por un replanteamiento radical de lo que creemos son las exigencias más urgentes para la formación del estudiante de grado y posgrado en medicina.

Introduction

It is increasingly claimed that modern medicine has entered into crisis[1,2]. Such a claim, on first examination, appears somewhat exaggerated, if not astonishing, and rightly generates many questions. It will be asked, entirely understandably, "Crisis? What crisis?" "Has not medicine witnessed an unprecedented level of progress over the last 100 years, with therapeutic nihilism giving way to therapeutic optimism and an inexorable move to the provision of universal healthcare for all?" "Do not the most recent advances in genomic and translational medicine and 'smart' technology for patients demonstrate that, far from being in crisis, medicine and healthcare more generally should engage in the celebration of their successes, not talk of crisis or diminution?"[2].

Such questions are, as Miles and Asbridge have recently pointed out, powerfully rhetorical[2]. But these authors, with a growing number of others[3], are clear that as medicine has become more powerfully scientific, it has also become increasingly depersonalized. They argue that recent decades have seen a shift of the clinical and institutional "gaze" away from the patient as a person, towards a vision of practice that focuses more on the technical application of government and payer-approved guidelines, than on the specific needs of the individual patient. This shift of "gaze" has resulted, it is contended, in a wide range of unintended

consequences. Thus, we see patients increasingly complaining of the inhuman way in which they are routinely "processed" by health services, with recent years witnessing an increasing frequency of care home and hospital scandals. Avoidable medical error and system failure rates have increased substantially and documented concerns for patient safety have become a defining characteristic of our times, an extraordinary observation since a guarantee of safety should be a *sine qua non* within the hands of clinicians and the confines of caring institutions[2,3].

As a consequence of such observations it is of little surprise that complaints to health institutions have risen exponentially and that malpractice suits have increased in parallel as the standards of care fall below a common denominator of basic adequacy into simple neglect and frank negligence[2,3]. In addition, healthcare costs have spiralled upwards as a function of advancing biomedical/technological progress in combination with increasing patient demand, so that health systems are now routinely described as at "breaking point" (due to a dramatic rise in chronic long-term illnesses, the failure of health promotion and patient education/health literacy initiatives and the failure of strategies to address socio-economic inequalities in health)[2]. Finally, we are able to see acute problems arising from clinical manpower deficiencies and these, combined with increasingly high clinical workloads, have led to flame, burn and rust out in clinicians at hitherto unprecedented levels[2,3]. Of all of these individual factors, no single one appears to be acting independently of the others. Rather, a key number of such factors are combing together to precipitate the crisis in healthcare to which we refer. The factors, as we have seen, are professional and system-related in their nature. But how, exactly, do they combine together to constitute what we believe to be the current crisis in medicine?

It has been asserted previously[2] that the current crisis in medicine is constituted by a crisis of *knowledge* (uncertainty over what counts as "evidence" for decision making and what does not), *care* (a deficit in sympathy, empathy, compassion, dignity, autonomy) *patient safety* (neglect, iatrogenic injury, malpractice, excess deaths), *economic costs* (which threaten to bankrupt health systems worldwide) and *clinical and institutional governance* (a failure of basic and advanced management, inspirational and transformational leadership). Indeed, it has been contended that if modern Society continues to tolerate this crisis of disregard and neglect, doing little apart from "fire fighting" in the face of such deficiencies, then we will have reached a very sad juncture in human history indeed[4-7]. So what is to be done? How can the components of the crisis we have delineated be individually understood in order to allow them to be collectively addressed? How can we effect a transition away from impersonal, decontextualized and fragmented services to newer models of service provision that are personalized, contextualized and integrated? How can we improve health care outcomes while simultaneously containing or lowering their costs?[3].

As has been acknowledged[2,3], it would be naïve to imagine that easy answers to such complex questions are immediately available. Indeed they are not. Yet such questions are of considerable political as well as clinical significance and need urgently to be addressed. The central question of relevance here is *how*? Existing approaches, as Miles and Asbridge argue[2,3], seem to have been ineffective in modifying, for the better, the radical deficiencies within and the escalating costs of health systems. For this reason, these authors advocate that a new approach is therefore necessary - one which employs a very different way of "thinking" and "doing". This new approach is represented by the development and application of the concepts and methods of person-centered health care (PCH), a philosophy and technique in the care of the sick that enables clinicians and health systems to re-introduce humanistic ideals into clinical practice alongside continuing scientific advance[8] — thereby restoring to medicine the humanism it has lost in over a century of empiricism. But the delivery of a person-centered healthcare within health systems requires a person-centered education and training. In this article we consider, then, how person-centered teaching innovations in the undergraduate medical curriculum are necessary, as a first step, to achieving real progress in the integrity of modern undergraduate medical education. Without such innovations, we do not believe that suitable foundations for subsequent innovations in postgraduate training can be laid and, with them, a continuing professional education in PCH that spans entire medical careers. We first consider the historical background to the rapidly increasing interest in person-centered healthcare, before advocating radical action in response to what we believe to be the urgent imperatives for a modern medical undergraduate and postgraduate training.

Historical background — and its relevance to the need for a reform of medical education in the 21st Century

Concerns with a lack of person-centered teaching within the undergraduate medical curriculum are far from new, with signal observations being articulated since at least 1927. Dr. Francis Peabody, for example, Professor of Medicine at Harvard University, USA, was one of the earliest examples of a physician who practised at a time when it was increasingly recognized that medicine was becoming narrowly scientific and care too impersonal — *in parallel*. Writing in "The Care of the Patient"[9], Peabody notes that "the most common criticism made at present by older practitioners is that young graduates have been taught a great deal about the mechanism of disease, but very little about the practice of medicine — or, to put it more bluntly, they are too 'scientific' and do not know how to take care of patients". In terms of medical education, Peabody had no difficulty in agreeing that the changes in the undergraduate medical curriculum taking place at that time had very clear relevance, so that a re-structuring of the curriculum could ensure that students were taught the latest scientific knowledge for the direct benefit of patients. Nevertheless, he worried that it was becoming increasingly forgotten that the application of the principles of science to the diagnosis, treatment and follow-up of disease continued to represent only one aspect of medical practice, so that the understanding that science was only one component of medicine (and not the only knowledge of relevance to the care of the patient) was becoming lost.

Peabody's contention was in no way "anti-science". On the contrary, his writings can be seen to exemplify a considerable excitement with the extraordinarily rapid accumulation of scientific evidence of relevance to medical practice. He spoke, for example, specifically about the "amazing progress of science in its relation to medicine" and of the "enormous mass of scientific material which must be made available to the modern physician"[9]. He was clear, however, that "the art of medicine and the science of medicine are not antagonistic, but rather supplementary to each other" and he insisted that there was "no more contradiction between the science of medicine and the art of medicine than between the science of aeronautics and the art of flying". Based on this philosophy, indeed *wisdom*, Peabody exhorted his medical students to remember that "disease in man is never the same as disease in an experimental animal, for in man the disease at once affects and is affected by what we call the emotional life", so that "the physician who attempts to take care of a patient while he neglects this factor is as unscientific as the investigator who neglects to control all the conditions that may affect his experiment".

Peabody specifically taught medical students that while the treatment of a disease may be entirely impersonal, the care of a patient must be *completely personal*, emphasizing the need for an ethically intimate relationship between patient and doctor that he believed to be central to the provision of an effective clinical care. Here, Peabody was clear that the failure of young physicians to establish such a relationship accounted for much of their ineffectiveness in the care of patients and he noted that the change then occurring in the professional style of consultation, from doctor as humanist to doctor as scientist, played a prominent role in the descent of hospitals, founded with the highest human ideals, into "dehumanized machines".

The development of a relationship-based style of clinical practice, fostered by solid person-centered medical teaching within the undergraduate medical curriculum, was the subject of Peabody's many Harvard Lectures. Repeatedly, he emphasized that the clinical picture of the patient should never be understood simply as "just a photograph of a man sick in bed; it is an impressionistic painting of the patient surrounded by his home, his work, his relations, his friends, his joys, sorrows, hopes and fears". For Peabody, then, the "good doctor" would, as a matter of course, always strive to achieve such an intimate knowledge of his patient's circumstances as well as afflictions, understanding clearly that in order to achieve and maintain such contextual insight, "time, sympathy and understanding must be lavishly dispensed". In concluding his article "The Care of the Patient", Peabody communicated a truism to medicine which in our view remains completely extant: "for the secret of the care of the patient is in caring for the patient"[9,10].

Peabody died prematurely at the age of 47 of gastric leiomyosarcoma in 1927, but throughout the 20th Century (and in the 21st) his writings and lectures have continuously been described as having a fabric of pristine humanism and a universality and timeliness that embody the noblest aspirations of the medical profession [cf. 3,11]. Nevertheless, his exhortations failed to decelerate a growing de-personalization in the teaching and practice of medicine, with the curriculum becoming more and more concerned to teach accumulating scientific knowledge (rightly) and less and less concerned to inculcate solid notions of humanism in parallel (wrongly). As the process of curriculum reform continued, medical education witnessed the emergence of other signal figures who, like Peabody years before them, were equally alarmed at a growing dissociation between the teaching of science within the curriculum and the inculcation of humanity.

Paul Tournier, for example, a Swiss family physician, writing in his first book *Médecine de la Personne*, contended that one solution to the crisis of de-personalization in medical education was the adoption of an integrated approach to teaching. Here, students would be taught that clinical intervention should only take place within a context of psychological understanding and pastoral counselling, where attention was given not only to the biological dimensions of disease, but equally to the psychological, emotional and spiritual dimensions of the human person, with account being taken also of the patient's social context in terms of his family, work and relationships in Society. Tournier had become greatly worried by what he observed to be the teaching of a "mechanical, reductionist clinical practice, devoid of ethics and without sustaining compassion". Tournier was, like Peabody, encouraged by the developments in the curriculum that allowed students to learn of the latest developments in scientific medicine, but he was clear that however scientific medicine would become there would remain a need to augment such knowledge in practice with "a personal knowledge, which is of a different order, the order of the person, not that of things"[12].

Although publishing an extensive number of books on person-centered healthcare and, throughout his career, acquiring a global audience for his work on pastoral counselling and on the psychosocial and spiritual aspects of routine patient care, Tournier, like Peabody, ultimately failed to influence the course of medical education and training. Indeed, it was not until 1977, and thus some 50 years following the publication of Peabody's "The Care of the Patient"[9] and 33 years following the publication of Tournier's *Médecine de la Personne*[12], that medical education witnessed one of the most significant occurrences of substantial relevance to person-centered healthcare education. We refer here to the publication of a landmark paper within the journal *Science*, entitled "The Need for a New Medical Model: A Challenge for Biomedicine"[13]. The author, George Engel, was an American psychiatrist, who had studied with Soma Weiss, a physician who had earlier trained with Francis Peabody. Weiss taught Engel the importance of placing the patient's narrative at the very centre of the clinical assessment. Engel argued for a re-introduction into medical education and clinical practice of a proper understanding of the psychological, behavioural and social context of the patient alongside biological and biomedical knowledge, this enabling "a blueprint for research, a framework for teaching and a design for action in the real world of health care". Continuing his work, Engel outlined a methodology through which his biopsychosocial model could be applied in clinical practice, rejecting a monistic and reductionist approach to clinical practice[14]. In so doing, Engel broadened the clinician's "gaze" away from a cold, impersonal, technical and biomedically dominated style of clinical practice, towards the embrace of an education and practice that understood and responded to the intrinsically human dimensions of suffering.

Challenges to medical education and clinical practice in the late 20th and current 21st Century — patient-centered care and evidence-based medicine

The collective work of Francis Peabody, Paul Tournier and George Engel (by no means the only, but perhaps some of the most prominent voices of the "patient as a person" movement[15]), while not causing of themselves a revolution in medical education and clinical training *per se*, undoubtedly created a platform for late 20th Century and early 21st Century enquiries into the person-centeredness — *or lack of it* — of medical education and clinical care. Indeed, although the literature shows a slow, but growing, interest in the personalization of medical teaching and clinical care from the mid-1950's, it was perhaps not until the mid-1980s that we begin to see a far more rapid growth of interest in individualization, with the appearance of new terminology illustrating this development.

Patient-centered medicine/care

In this context, the first use of the term "patient-centered care" (PCC) continues to be attributed to Levenstein and colleagues[16], who employed the descriptor within their seminal paper published in the journal *Family Practice* in 1986 entitled "The patient-centered clinical method — a model for the doctor-patient interaction in family medicine". Levenstein's article achieved a major impact, causing medicine to commence a serious reflection on the de-personalization that had been progressively occurring within teaching and practice over that particular century. The nature of the depersonalisation became more and more clearly articulated — medicine had become so focussed on the use of its scientific knowledge in order to *ameliorate, attenuate and cure*, that it was forgetting its historic imperatives to *care, comfort and console*. The growing dissociation of these fundamental principles of medicine was increasingly acknowledged within the literature to have the potential to damage clinical professionalism through a growing distortion of the priorities and ethos of medicine. Here, a reductive focus on disease processes and organ systems was seen to be leading to the compartmentalization of knowledge, the fragmentation of clinical services and to documented increases of a frank neglect of patients' concerns, needs and values, so that the human dimension of medicine was becoming lost and with it, therefore, medicine's fundamental purpose (for extensive bibliography, see Miles[8]).

Evidence-based Medicine

Alongside the increasingly influential patient-centered care movement of the late 20th century, medicine witnessed another occurrence of equal relevance to medical education and clinical practice — the appearance of the Evidence-based Medicine (EBM) movement. The term EBM was first employed in 1990, appearing in the literature in 1991[17] in advance of a full and detailed account of EBM as "a new approach to teaching the practice of medicine"[18]. EBM claimed that the current paradigm in which medicine was imbedded had become untenable and was in urgent need of substitution with a new philosophy of medical practice and teaching. For the first time in medicine, a movement claimed that clinical practice should be *based* on the principles of clinical epidemiology. Here, biostatistical data from methodologically limited quantitative study designs such as randomized controlled trials and effect sizes from meta-analyses of randomized controlled trials were to be understood as the most reliable forms of evidence for clinical decision-making, with other forms of knowledge being relegated to subordinate positions within an evidence hierarchy or excluded from consideration altogether. For this reason, Feinstein and Horwitz, writing in the *American Journal of Medicine* in 1997, argued that EBM, given its nature, was effectively unable to assimilate the humanistic dimension of clinical practice which included, as they pointed out, psychosocial factors and support, the personal preferences of patients and strategies for giving comfort and reassurance[19].

The fundamental inability of the EBM model to incorporate such factors into decision-making when they are in conflict with the "E" of EBM has remained highly problematic for the movement and its leaders. Attempts to establish a means of doing so have sequentially failed, with the original EBM model having changed in terms of its philosophy and method no less than four times since its original publication in 1992[20]. One relatively recent essay, in 2009, by three major leaders of the movement (including Gordon Guyatt, the originator of the term EBM and co-architect of the EBM Movement) has described this fundamental inability of EBM as "vexing"[21], with major clinical commentary confirming the same[22-28]. Far more recently, in 2014, a further three EBM leaders, writing in the *British Medical Journal*, ask: "Evidence-based medicine: a movement in crisis?"[29]. Their answer is "yes" and they contend that while EBM has resulted in many benefits, it has also resulted in many negative and unintended consequences. In response, they have offered a preliminary agendum for the movement's "renaissance", so that useable scientific evidence can be combined far better with clinical context and professional expertise, ensuring that individual patients are provided with more optimal treatment than was possible under the former four EBM models. This imperative was recently discussed at a high profile clinical conference in Oxford UK, with EBM delegates acknowledging the current model of EBM to be broken and calling for its defects to be properly addressed[30]. Unfortunately, while EBM's current limitations as a model of practice were frankly considered, no solutions were offered. If, then, a "renaissance" does come, then the changes that it will necessitate will represent, therefore, a fifth reconstitution of EBM philosophy and method since the original EBM model was published some 25 years ago[8,20,29].

21st Century Medical Education — *quo vadis?*

Against the historical background we have given in summary above, we now turn to what we believe to be the imperatives for modern medical education and physician training as our current century moves forward. We do not believe

that modern medical education is comprehensively "broken" — that would mean we are producing doctors who are in some ways inadequately trained and unable to act wisely in the care of patients. That is not the case. But it is not an exaggeration, we think, to claim that some major improvements in the undergraduate medical curriculum have become necessary, not only in terms of the methods of teaching delivery, but most importantly in terms of curriculum content. Indeed, there is no doubt in our view that there is a need urgently to address, educationally, what Rita Charon[31] has called "the vexing failures of medicine, its relentless positivism, its damaging reductionism, its appeal to the sciences and not to the humanities in the Academy and its wholesale refusal to take into account the human dimensions of illness and healing".

For almost a century now, medicine has increasingly confined itself to the solely biological approach of determining "what is wrong" and then "how to treat", so that the question to the patient: "Who are you and what is important to you" has become optional, not primary. Indeed, medicine has all but ceased to see the patient as a *person* in all his or her biographical richness, indeed uniqueness[1-8]. This reductive focus of modern medicine with its fascination with the cellular or molecular basis of disease, to which Charon refers[31], needs to be *widened* to a fascination with the person of the patient, so that a proper understanding of how the disease is affecting the patient's psychology, emotions, spirituality and lifestyle/social functioning, can be gained and practically utilized. It is salutary, here, to keep firmly in mind the undeniable truism that the disease is part of the person, not the person part of the disease, a vital distinction that modern medicine increasingly neglects to understand.

Personomics?

An article recently published within the *Journal of the American Medical Association* makes these points extremely well. Ziegelstein[32], quoting William Osler ("It is much more important to know what sort of a patient has a disease than what sort of a disease a patient has"), is clear that "There can be no doubt that if genomics, proteomics, pharmacogenomics, metabolomics, and epigenomics can be used to identify treatments that are uniquely tailored to the individual, the possibilities are almost unimaginable. However, an important element has been left out of the discussion. Individuals are not only distinguished by their biological variability; they also differ greatly in terms of how diseases affect their lives. People have different personalities, resilience, and resources that influence how they will adapt to illness, so that the same disease can alter one individual's personal and family life completely and not affect that of another person much at all. Diseases do not just affect individuals; they affect their families and friends, and their communities".

Ziegelstein's thesis presents nothing that is entirely new. Rather, it very valuably emphasizes what is already known, but what is not sufficiently "talked about" and appreciated within everyday clinical practice. This is undoubtedly why he places emphasis on the need to understand "the influence of the unique circumstances of the person—the "personome", where he argues, rightly, that this is just as powerful as the impact of that individual's genome, proteome, pharmacogenome, metabolome and epigenome. The tools of precision medicine, Ziegelstein argues, have given us a greater understanding of the cellular and molecular determinants of individual uniqueness, "yet physicians-in-training have been facing greater challenges getting to know their patients as people". He rightly points out that "Internal medicine residents now spend more time at the computer than they do providing direct patient care", thus familiarizing themselves far more with "an electronic facsimile of a patient" (what Verghese has termed an "iPatient"), rather than meeting face to face with the individual patient in an individual hospital bed or outpatient clinic.

And what of medical education? Compounding this situation, Ziegelstein notes, is a failure within the undergraduate medical curriculum to integrate, with the biological sciences, the psychological, social, cultural, behavioral and economic factors that influence human health and disease. This, he argues, has the potential to suggest to students that the psychosocial and societal issues encountered in clinical practice are somehow less important to patient care than the basic sciences. Yet he is clear that to teach to students the understanding, indeed *reality*, that each single, individual patient is a *person* not an object, subject or complex biological machine (just as the clinician is a *person*, not a skilled functionary dispensing prescriptions and interventions) is critical — indeed as critical as everything else that is taught during the long years of undergraduate study and in the early years of postgraduate physician training. Indeed, as Ziegelstein says, "Teaching medical students and residents the skills involved in patient-centered care and communication and enhancing the behavioral and social science content of a medical school's curriculum are just as important as teaching the molecular and genetic basis of health and illness". We agree.

Teaching medicine as a *science-using* practice: a prerequisite for person-centered healthcare

We see in Ziegelstein's[32] recent writing, then, an absolute agreement with the imperatives articulated by Peabody in 1927 and 1928[9,10] and all those other physicians who wrote similarly in the interim. Yet modern medicine and the education it provides to its students is confronted by a dilemma. Students have become accustomed (and in recent years have been explicitly taught) to understand medicine as a science, when medicine, according to its own philosophy, is nothing of the sort. Rather, medicine is primarily a human activity with a moral character that employs science but does not equate to it. In other words, medicine is a science-using *practice*, so that science represents a vital and indispensable tool of medicine, but does not describe medicine's *soul*[33,34]. The soul of medicine is seen in the clinical encounter with the patient who, having become ill, presents to the physician asking for help and where the physician responds, using all of the skills and knowledge he has accumulated, in attending that patient within a context of ethical relationship, equality and mutual trust[1-10,12,22,33,34].

It is here that students and physicians alike can understand the advent of the patient-centered medicine movement and its rapidly growing clinical and political influence in our current age. Indeed, this movement has aimed, principally, at achieving a re-balancing of medicine's science with medicine's humanism, seeking to remind clinicians that patients' subjective needs (as expressed by them through narratives, values, preferences, and so on) are to be as fully considered as medicine's science when formulating treatment plans and that when a patient's values are in conflict with the science, then it is the values which remain pre-eminent and which form the basis of decision-making. Importantly, patient-centered medicine has been criticized as an overly consumerist model of care, where the patient is empowered as a customer and the clinician is disempowered into a simple provider of goods[1-10]. In direct contradistinction, the EBM movement has aimed principally at accelerating the introduction of scientific evidence into "hands on" practice in the clinic and at the bedside, but being preoccupied with biostatistics (and traditionally viewing these as pre-eminent above patients' subjectively expressed needs) has gravely neglected the humanistic character of medicine[1-10], resulting in the range of unintended consequences for medicine's humanism that EBM leaders now themselves openly acknowledge[29,30]. Moreover, EBM has been criticized for being overtly paternalistic in identifying what physicians believe to be the optimal therapeutic way forward based on bioscience and then seeking to implement this with minimal real concern for patient's values and preferences[1-10]. It seems clear and is increasingly acknowledged to be the case that both movements show profound shortcomings and need, somehow, to overcome them. What are the implications here for how we should see medicine ideally practised and what we therefore need to teach to our students? Should we aim to harvest the best principles of both models, discard the others and move forward in teaching and practice in this way?

Teaching the need for a coalescence of EBM and Patient-Centered Care

Hartzband and Groopman, when discussing the parallel emergence of the patient-centered medicine and evidence-based medicine movements, worry that "now, when it is most important for them to coalesce, they are poised to collide"[35]. These authors are also clear that the success of modern medical education and clinical practice will involve taking a full account of complex psychological, sociological and cultural factors within clinical practice, alongside biomedicine, so that the skills associated with medical humanism should re-acquire the importance they were once afforded, both in the medical curriculum and in clinical practice itself. They argue for the urgent need to ensure a "thoughtful collaboration between evidence-based practice and humanism", so that the dual use of both science and humanism, understanding the intimate linkage between them, can prevent "an outright collision between medical humanism and evidence-based guidelines".

We agree with Hartzband and Groopman that the time has indeed come for EBM and patient-centered medicine to coalesce and precisely for the reasons these authors give. The question is *how* to achieve such a coalescence and then to teach medical students and physicians in training why such changes have become necessary within medicine and what implications they have for clinical practice and continuing professional education. Certainly, the "thoughtful collaboration between evidence-based practice and humanism" cannot begin to occur while EBM maintains a rigidly foundationalist stance which insists that clinical practice is to be *based* on scientific evidence. Properly understood, science *informs* medicine, it does not dictate to it. Indeed, as medicine's own epistemology has always made clear, science is only one form of knowledge for clinical practice among many others. It sits alongside all of these other sources of knowledge and not on top of them. Any coalescence will therefore require EBM, even in its fifth ongoing current reconstitution, to move from epistemological foundationalism to epistemological non-foundationalism and thus from a scientific evidence-*based* stance (EBM), to a scientific evidence-*informed* position (EIM). For this reason, and to make progress towards the development of new clinical methods to deal far more effectively with the current epidemic of multi-morbid, socially complex long term illness, Miles and Asbridge have called for the "collapse" of the vertically ordered "*Hierarchy of Evidence*" of EBM into a horizontally ordered "*Library of Clinical Knowledge Sources*" which places scientific knowledge alongside all other forms of clinical knowledge of relevance to clinical decision-making and from which the wise clinician can draw, as indicated, with direct reference to the specific needs of the individual patient[1-10].

A science-*informed* versus science-*based* model of this type ensures that, as *The Lancet* insisted in 1995, EBM is positioned "in its place"[36] — a place from which it directly informs and facilitates clinical practice without restricting decision-making, a position which allows reliable science to be integrated, if appropriate, with patients' subjectively asserted needs. This model is person-centered medicine, "a philosophy and method which enables affordable biomedical and technological advance to be delivered to patients within a humanistic framework of care that recognizes the importance of applying science in a manner which respects the patient as a whole person and takes full account of his values, preferences, aspirations, stories, cultural context, fears, worries and hopes and thus which recognizes and responds to his emotional, social and spiritual necessities in addition to his physical needs"[1-10].

Person-centered Medicine: why should we teach and adopt it?

To the enlightened physician, adopting a person-centered approach to medical education and clinical practice may seem intuitively the right thing to do when considering the challenges that modern medicine faces. But there is more than intuition of relevance here. Indeed, we know that person-centered, relationship-based approaches to care increase patient adherence to both simple and complex medication regimens; that they reduce the frequency of primary care and secondary care presentations, that they

decrease the frequency of symptom exacerbations and distress; that they reduce frequency of hospitalization and that they decrease length of hospital stay following any admission. Further, they are associated with increased patient and clinician satisfaction with care and, by virtue of these modifications of illness trajectories, satisfaction and service use, are positively correlated with decreased economic and human resource utilization, lower physician burn out rates and with better clinical outcomes. Increasingly, rigorous empirical studies are now being added to the results of so much of the qualitative research into person-centered care that has been conducted over recent years, actively supporting an empirical justification for the teaching of person-centered healthcare approaches and their utilization in every day practice[3].

For these reasons, it is our view that a move to far more person-centered clinical teaching and practice is the only modern method through which patients can be given a better "deal" and where clinical professionalism can be maintained and advanced. Indeed, if care is to move away from a purely reductive anatomico-pathological focus in the direction of a more authentically anthropocentric model of clinical care that aims to take as full an account of the subjective experience of illness by the patient as it does of the objective measurement and monitoring of disease[3], then it would appear that professionals should be given the greatest of encouragement by Government Regulators, the Public, Healthcare Charities and Foundations, as well as the Healthcare Industry, to engage with this new system of ideas and its trial methods. Person-centered approaches to care are not, after all, in any way, options. They are in no way idiosyncratic methods to be employed by a minority of empathetic healthcare workers. On the contrary, they are imperatives if medicine and the clinical professions are to remain vocations and not "service industries", processing patients in the manner of statistics as part of some wider industrial, State-funded or privately delivered "method" of "dealing" with the illness and suffering of its many citizens.

Conclusion

Undergraduate medical education is in need of significant reform. The challenges facing medicine include an epidemiological shift away from acute single diagnosis disease, towards long term multi-morbid and socially complex chronic illness, where the previous formula of diagnose, treat, cure and discharge is not applicable and where models of care which depend solely on biomedical science are of little use. Moreover, major shifts are occurring in the physician-patient relationship as patient organizations drive forward increases in patient education, advocacy and empowerment and as shared decision-making between patient and physician is rapidly becoming normative. New models of teaching and care are therefore required to respond to such seemingly inexorable change.

While modern medical education has been highly successful in introducing ongoing scientific advance into the curriculum, it has been far less successful in ensuring the inculcation of humanity and ensuring that students achieve a full working knowledge of the value of understanding the patient's subjective experience of illness and the nature of medical knowledge that goes beyond simple or complex biomedicine. It is vital, we believe, that students are taught that patients present to physicians for assistance not as a collection of organ systems, one or more of which may be dysfunctional requiring scientifically indicated technical and pharmacological interventions, but rather as integral human beings with narratives, values, preferences, psychology and emotionality, cultural situation, spiritual and existential concerns, possible difficulties with sexual, relational, social and work functioning, possible alcohol and substance abuses and addictions, worries, anxieties, fears, hopes, goals and ambitions — and more. This fact, *and it is a fact*, requires careful teaching.

In this article, for introductory purposes, we have considered the elements of person-centered healthcare education and practice in the broadest terms. In a companion article to be submitted to *Education Biomedica*, we will present, for discussion, the structural reforms of the undergraduate curriculum which we believe to be necessary if person-centered healthcare teaching and practice are to become operational realities within routine clinical practice. There are many practical obstacles to the introduction of person-centered teaching into the undergraduate medical curriculum at the necessary level and to the necessary extent if the teaching is to be meaningful and substantial and not merely tokenistic and peripheral. Such changes will require vision and transformational leadership as recommended by the European Society for Person Centered Healthcare[2,7] and, to achieve implementation, such reforms of the curriculum will require the understanding and consent of the profession as a whole. If implemented, person-centered teaching should begin with reforms to student selection (based on what students have in their hearts as well as in their heads) and a far more thorough grounding in the philosophy of medicine and in medical epistemology for those who prove successful in gaining entry. Such teaching should begin on Day 1 of medical school and not end until the final week of the final year of study.

We re-iterate here our strongly held view that excellence in clinical practice will remain out of reach until clinicians apply advances in biomedicine and technology within a humanistic framework of care. By this we mean that modern clinicians must re-learn the methods of contextualization. High technical skill remains high technical skill only and we view as a truism the claim that clinicians cannot, *ipso facto*, achieve excellence in their profession until they learn how properly to use these advances in the context of the human person who has become ill and who suffers. A fervent desire to achieve such high professionalism, surely the duty of any vocation, demands the admission of concepts of excellence and full considerations of how to achieve it. In terms of clinical practice, this will necessarily involve the cultivation, through undergraduate and postgraduate and continuing education and other means, of a *definitive ambition to treat patients as persons* and a willingness to attend to the subjective experience of illness by the patient as fully as is done when measuring the objective parameters of disease in order to understand and treat dysfunction in purely biological terms.

In concluding, we contend, with emphasis, that the older notions of caring need to be re-discovered — and urgently

so, thus enabling modern medicine to understand that its function involves not only efforts to ameliorate, attenuate and cure, but also and vitally so, efforts to *care, comfort and console*. The challenge is, then, perhaps, this: to take the humanistic endeavour of former and historical years and to attempt to revive it within the utterly different and hugely more complex health system environments of our current Age. It is a *sine qua non* that such a proposed process will require a range of effective educational developments and it is these which we will consider in our subsequent paper.

Acknowledgements and Conflicts of Interest

This invited article has drawn directly and in some sections *verbatim* on the content of previously published papers singly by one of the authors (AM) or jointly by two of the authors (AM & JEA). This derivation has been utilized to re-present and emphasize previously articulated observations, opinions and contentions. The authors of the current paper declare no conflicts of interest.

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