

Anna Loiacono*

Sociomedical interaction in English: towards virtual hospital

ABSTRACT

In the study of Medical English, encouraging medical undergraduates to reflect on the medical content of texts and genres proposed and sometimes imposed by society, as relevant to health and healthcare is an indispensable component for online student-teacher interactions. In keeping with the principles underlying CDA (critical discourse analysis), linkages and comparisons between texts belonging to different genres are explored in relation to set of thematically-related texts relating to health aspects of water and foodstuffs. The paper presents a three-tier model for the qualitative analysis of individual texts and describes their typical make-up in terms of three broad categories of social contexts: individual, community and international/institutional levels. The model of analysis lends itself to quantitative, as well as qualitative, analysis of the ratio between medical and non-medical information in health texts, leading to the prospect of automatic on-line quantification in a computer template/platform that can guide teacher-learner interactions and comparisons of texts, thus ensuring that understanding of the forms and functions of today's complex hybrid healthcare texts is kept on a sure footing. Hence, thanks also to the efforts of the classroom teacher, the future global doctor will be empowered to shape his or her own ethical code in way which is likely to be more objective and balanced.

Key words: Computer platform/template – textuality – teacher-learner interactions – Medico-social contexts – CDA (Critical Discourse analysis) – Medical English

* Correspondence address: Anna Loiacono, Department of Medical and Surgical Sciences, Faculty of Medicine, University of Foggia, Viale Luigi Pinto, 1, 71122 Foggia (FG), e-mail address: a.loiacono@unifg.it

1. Introduction

This paper proposes a new "template" for medical English teaching, in which textuality and interdisciplinary links, together with a coherent progression of conceptual contents, are an *a priori* concern in teacher-learner interactions. These interactions evolve and, as they evolve, the need for firm points of reference becomes all the more evident and essential. Within a framework based on textuality, interdisciplinarity and a need to reflect on sociomedical interaction in all its forms, it is possible for genre, text grammar, and the *GMER* principles (Loiacono 2011b, IIME undated) to be plied together in undergraduate medical education in such a way as to represent an alternative to, and a much needed escape from, those teaching approaches that deploy traditional instruments and methods in which acquisition of medical discourse's lexico-grammatical forms, specialized lexis in particular, is the *sole* objective.

In today's healthcare world, in keeping with IIME/GMER principles, the goal needs instead to be:

- a) exposure to as many types of medical discourse in English as possible;
- b) linkages between these discourses so that an understanding of the way they interact in a healthcare worker's typical day – the whole picture of medical discourse – can be grasped.

The template/computer platform in question is enacted in terms of an idealized *Virtual Hospital* that focuses on the multiplicity of interactions. It is being constructed in stages. The first stage was the realization of a film, *ForWard* (Loiacono 2010, 2011a/b; Loiacono, Lo Presti, 2010). *ForWard* is a film about medical emergencies shot in a real hospital using professional actors whose mother tongue is not English. The film was financed, created and directed by the author with the goal of providing a model of interaction with which medical students whose mother tongue is not English can readily identify.

The second stage will consist in the construction and experimentation of a website which recasts the film in such a way that a "fixed" (i.e. linearly sequential) digital video is embedded in a website. Within a hypertext structure, such as a website (Loiacono, 2004), access to the film can be constantly modified permitting, for example, the viewing of a specific sequence which is then intermeshed with exercises, for example, relating to the vast inventory of supporting photographic materials, currently being gathered in preparation for this second step.

The third stage is where a much more complex set of relations between website and other texts and tools coming from various sources can be built up so as to encourage

reflection on sociomedical discourse. In this respect, like any template, the approach has fixed and variable parts so that research-led insights that strengthen its adaptability and applicability in many teaching contexts will be introduced. In particular, work in CDA (Critical Discourse Analysis (Fairclough, 2001 [1989]), multimodality (Lemke, 1999), interdiscursivity (Sarangi, Roberts), (web) genre analysis (Martin, Rose, 2008; Swales, 1990), appraisal theory (Martin, White, 2005) will be incorporated.

This paper illustrates the background to last stages in the enactment of the template, and is concerned, in particular, with reflection on sociomedical discourse valid for all medical undergraduates including those whose mother tongue is English. It will suggest how online text analysis radically recasts classroom activities and teaching tools in ways that make the acquisition of Medical English more effective and usable for the various categories of learners (doctors, nurses, medical technicians and so on) that populate the healthcare environment.

Accordingly, since this stage requires students to distinguish between medical and non-medical discourse in different social contexts, *Section 2* of this paper deals with the presentation of a three-tier model of analysis to be incorporated into the template that mediates between text linguistic theory and specific health and healthcare texts, while *Section 3* describes the simultaneous application of the individual levels in this text analysis model. The model lends itself to quantitative/qualitative assessments that pave the way for computer modelling within the proposed template, a matter investigated in *Section 4* and summed up in the concluding remarks in *Section 5*. For both copyright and space reasons, the illustrative texts may be accessed from the Internet through the links provided in the first part of the *Reference* section.

2. Medico-social contexts

Critical analysis of sensitive areas in the communication of medical information – those where it is essential to comply with high medical standards when communicating across social strata in a global market – requires detailed analysis of texts, relating in particular to:

- a) medical information for improving life and promoting better health, e.g. through preventive medicine;
- b) ethical issues e.g. organ donation, in vitro fertilization; end-of-life protocols;
- c) medical environmental issues e.g. OGM, water and nuclear contamination.

They can, in our view, be best characterised in terms of the three-level model of analysis mentioned above which we will briefly outline prior to investigating the ways in which they interact and before suggesting how the model might be used to classify the medical/non-medical information qualitatively and quantitatively in greater detail.

1) The individual level in text analysis: this is concerned with exposing the deliberate omission of facts and/or the promotion of half-truths about medical information that cause consumers to make unsound healthcare purchases and/or investments. Snake-oil merchants, quacks and witch doctors infest the literary canon (Loiacono, 2012a) and constitute the historical precedents for today's social equivalents: e.g. viagra-selling online "pharmacies", adverts for "health-promoting" diets and so on. Among the genres belonging (mainly) to this category are advertorials and what we choose to call counter-advertorials which often occupy the same social and textual spaces. An example of this shared *milieu* are contemporary packets of cigarettes which, rather weirdly, contain two competing and contradictory texts: purchase-promoting branding and purchase-dissuading medical information. TV adverts for OTC pharmaceuticals, e.g. analgesics, are another example of this strange symbiosis where medical information is given (e.g. on Italian TV) in the form of a speeded-up voiceover in the final part of the advert. This complies with the "letter of the law"; but has the effect of prioritising pseudo- and non-medical information over medical information in a way that, somewhat questionably, attempts to reassure the viewer.

Contemporary society thus has the potential to *create* examples of what we may call disjunctive hybridity – co-packagings of polar intertexts such as those presented in Text 1 and Text 2, which strongly identify with the individual and his/her responsibilities; i.e. they "cancel each other out" in terms of the messages being given (cf. Fairclough's linkage between social context and intertextuality mentioned above). Medical information and non-medical information thus co-exist in the texts analysed in this paper affecting the individual in contradictory ways: we typically find "soothing" pseudo-medical information designed to assuage and reassure (Text 1), alongside demands from doctors (Text 2) that their readers be provided with the 'real thing' – accurate, unbiased and relevant medical information. This principle can be applied to these polar texts as well as many others, including those referenced in this paper (see for example Texts 9, 10 and 11).

2) The "grass-roots" community level of analysis: medical information belongs to everybody but often its management provokes social conflicts and communicative asymmetries arising from power struggles and changing social and political relationships, raising the question, once again, as to who really "owns" medical informa-

tion. With the rise of Internet, this level of medical dissemination is increasingly shifting from community meeting halls and debating chambers to Internet "forums" in which commercial and/or political half-truths are exposed increasingly through blogs and other online genres in relation to issues such as the effects of depleted uranium on soldier's health (see Nuclear Policy Research Institute, 2003 for a detailed "whistleblowing" account). The simultaneously top-down and bottom-up decision-making processes that this level entails are typically expressed in video-recorded debates on the websites of national parliaments and regional assemblies; one example of this emergent community debate genre is given in debates in the Welsh Assembly (e.g. Text 3) that make very clear political statements on the function of local communities in deciding the management of services, including health services, a matter also explored in relation to the Bundanoon website debate on tap vs. bottled water (Text 4) and the Victoria Government's programme to replace sweetened drinks with water that targets individuals via families and schools (Text 5). Despite such high-sounding names as the Health and Social Care Committee (Text 3), no doctor nor even a healthcare professional is present in the Welsh Assembly video, just politicians and representatives of the food and drink industry. In the author's experience, research into video debates in other similar assemblies throws up a similar pattern of pseudo-medical debates and interviews, an emergent Internet genre made up of texts that address communities on issues of health but actually contain a limited amount of medical information. Text 6 is one example. It is an *iHealthtube* video, which illustrates the interview subtype, again with reference to the bottled vs. tap water issue. As with the Welsh Assembly debate (Text 3), the medical information in the interview format is, in this and many other cases, minimal – little more than a springboard for an expert's lecture to the general public as the following transcript of the video makes clear:

Transcript of Text 6: Which is Safer: Bottled Water or Tap Water? What's gotten into us: Staying Healthy in a Toxic World

Interviewer: speaking of bottled water that ... it could actually be worse than tap water or ... or not as regulated is I think is how ... is how you put it.

Professor of Medicine: Yeah, the thing about tap water, no matter what you say about tap water, no matter what gets into tap water, it's still regulated; it's by law of course; you know, if your city's supplying hundreds of thousands of people with water, you have to keep testing it; you're constantly, constantly testing it. And it is an imperfect thing, as we mentioned before. I mean, it's imperfect for lots of reasons. It's imperfect because all kinds of things get into water. If you think about what gets into a river, it's a lot of stuff, a lot of bad stuff and water treatment facilities can't take all that stuff out. They can kill pathogens but they can't take synthetics

out. Now they're trying to figure a way out to reverse engineer all these plants but you gotta imagine this is going to be a tricky engineering thing.

Interviewer: Mmm!

Professor of Medicine: The trouble with bottled water is you not [only]... first of all, it's unregulated so who knows what kind of water are they putting in it. You've heard ... everybody knows these old stories that companies are just taking tap water and putting it in a bottle and selling it. The trouble with bottled water is it's not just the water inside, it's the bottle itself, right? So, again, if you test the water in a plastic water bottle you can find traces of the plastic in the water ... and it gets actually more worrisome when you're talking about a liquid that you warm up. So this became a big story for mothers, particularly because er I should say parents with nursing children ... when you wake up in the morning, say at 3 o'clock, and your baby is starving and you take a bottle of breast milk and you put it on the stove top and you warm it up, the plastic in the bottle can be leaching into the breast milk many times faster than it would at room temperature. So this is why one of ... one of the products that has been regulated recently after a lot of time, of yelling and screaming ... is they've finally taken this chemical called Bisphenol-A out of plastic baby bottles. Now that just seems to make common sense but it took a long time to get people to wake up to that.

The second part of the 'subtitle' associated with this text through an introductory overlay in the video itself is *Staying Healthy in a Toxic World* which suggests that the video ought to be about medical information. But, like many texts in this genre, a careful reading of the script raises questions as to what the text is really about. In this case questions raised include: is it about the dissemination of medical information or about legislative gaps? Is the question posed in the title really being answered? Or is the focus more generally on the individual's awareness of socio-political issues in line with the first part of the subtitle *What's Gotten Into Us*. When formulating your own opinion bear in mind how repetitive the text is with many fillers (*of course, you know*).

3) The national and supernational institutional level of analysis: cucumbers from Spain were recently wrongly blamed for the deaths of people in Hamburg from an E Coli outbreak; import bans were slapped in place immediately, wreaking economic havoc in the field of perishable goods for Mediterranean countries like Italy and Spain. A few days later medical information seeped through indicating that from a medical (i.e. toxicological and nutritional) standpoint the cause was not the one initially invoked raising the prospect of financial compensation (Texts 7 and 8). Pandemics and epidemics such as swine flu, microbiological warfare, OMG foods,

and mad cow disease are further cases where panic and pseudo-medical information tend to prevail over correct medical information creating international conflicts. This form of avoidable mismanagement of medical information encompasses the highest levels of socio-political institutions and, of course, the media on a global scale and raises issues about ethical standards in health/medical communication.

3. The interdependency of levels

Deceptively simple as it may at first sight appear to be, the 3-tier model for text/intertext analysis described in the *Section 2* is the basis for this article's attempt to design a framework readily introducible into the template described in *Section 1*, capable of measuring and quantifying, possibly automatically, the balanced relationship between medical and non-medical information in texts, and, crucially in terms of the probable reliability of a particular sociomedical text, the absence of such a balance. The model, in particular, suggests that analysis of intertextual ties (see for example the discussion of Bisphenol-A e.g. in Texts 4, 5 and 12) can help highlight gaps in this balance and lay the foundations for the subsequent step, not yet undertaken in the author's research of quantifying the ratio of medical to non-medical information automatically. As CDA suggests (Fairclough, 2001), highlighting discrepancies can be enacted through the process of reconstructing the links between texts, the social agents and social contexts that are the driving force behind them. Given the vastness of the canvas, the author's current research approaches these issues by looking at texts and genres with medical/non-medical information co-packagings that link end-consumers with nutrition, or to be more precise, what people think they are eating and drinking. This involves exploring the medical issues raised in a series of texts belonging to different genres but which, in fact, constitute sets of intertexts that cross genre boundaries.

A good starting point for the analysis of the manipulation of medical information and understanding of how texts work within and across the three levels indicated in *Section 2* is the advertorial. As its name suggests, it is, at least in origin, a printed advert disguised as an editorial that "takes in" unsuspecting readers. Like more recent genres native to the web and which seek out gullible individuals, such as phishing, the advertorial has now "emigrated" to the web and, in so doing, has sharpened its teeth (Text 1). The "medical" advertorial, in particular, presents "medical content" that looks genuine but requires careful examination that applies the 3-tier model described in *Section 2* systematically. To illustrate how can we detect and measure likely manipulations textually we may investigate potential textual markers that relate specific individuals (as should be the case with medical diagnoses) to

mass merchandising (which is not the goal). One such marker relates, as Fairclough points out, to the textual phenomenon of synthetic personalisation, a compensatory mechanism used by the advertising industry to create manipulative links when addressing mass audiences as though they were individuals through inclusive language usage:

Examples would be air travel (have a nice day!), restaurants (welcome to Wimpy!), and the simulated conversation (e.g. chat shows) and bonhomie which litter the media. These general tendencies in the order of discourse of modern society accord with the nature of its power relations and modern techniques for exercising power.

(Fairclough, 2001: 62)

This process is clearly at work in various texts described in this article. In particular, note how in Text 1 in a dialogical context where the tactic of presenting "You have cancer" as addressed to the individual reader is backed up by the ironic reference to "three little words" normally associated with the positive meaning of "I love you" but presented in this context, in a polarised "co-packaged" way, with a negative meaning. The simulated conversation, supposedly involving "you" and "me" as real individuals, uses the same kind of strategy exploited in individual/mass market T-shirt icons e.g. "I love New York" in a marketing process that, as we might suspect, involves very little medical detail. What for example does "has a specialized team for every kind of cancer from the most prevalent to the most obscure" really mean in relation to successful individual therapeutic outcomes? As suggested above, intriguingly, the relationship between advertorial (Text 1) and counter-advertorial (Text 2) rightly invites readers to explore genres from a "multi-perspective" standpoint that integrates individual, community and institutional levels and encourages us to shy away from a single, probably biased, perspective.

Being critically on one's guard is one thing; an excessive biased reaction is another. Milligann (2009: 134) exemplifies the dangers of biased "over-reaction" quoting a series of letters sent to *The Lancet* claiming that the prestigious journal had published a scientific article that amounted to an advertorial since some of the writers were employees of a pharmaceutical company; all this raises the question of who, other than a sponsor, can vouch for the integrity of the data and the presentation of the results and for the integrity of those who cry "foul play". Counter-arguments to such protests can be put forward (and duly were in the case quoted) again raising the question as to the rules for the dissemination of medical information. These ethical concerns appear to have encouraged the rise in the early years of this century

of the *International Committee of Medical Journal Editors* (ICMJE: www.icmje.org/) which brings together journals that follow the ICMJE's URM rules (i.e. *Uniform Requirements for Manuscripts Submitted to Biomedical Journals*). These apply the IMRAD (*Introduction, Methods, Results and Discussion*) structure or rather the AIMRAD structure (where an *Abstract* is incorporated) in the (rightly held) belief that it is not an arbitrary publication format but rather a consolidated cultural reflection of the process of scientific discovery.

Various legislative responses have also been provided, some more successful than others to this ethical issue. One deterrent (Pearson, 2000) is to legislate, where harm to a competitor or the public is involved, in such a way as to prosecute a company, rather than a publisher, for disseminating information that covers up rather than reveals and hence breaches trust by failing to be impartial. Another is to ensure "loop-holes" are properly "plugged" through published guidelines and recommendations for publication practices that strengthen and uphold ethical standards in biomedical communication.

In the medical field, various guidelines have been developed that attempt to cross traditional barriers by involving a much broader spectrum of "stakeholders". This solution goes beyond the individual perspectives of medical journals, medical writers, publishing professionals, and the pharmaceutical and biotechnology industry. Bareket-Samish et al. (2009), for example, argue the case for good publication practice guidelines that reflect and promote the holistic approaches adopted medical communication agencies, as emergent industry self-regulators capable of merging traditional publishing safeguards with a more balanced approach to marketing, medical education and consumer protection needs on both a short and long-term basis. Medical communications agencies such as *Publicis Healthcare Communications Group* (www.publicishealthcare.com/), *Huntsworth Health* (www.huntsworth-health.com/), and *MedWrite International* (www.medwriteinternational.com/) increasingly support the development in the English-speaking world of medical publications in collaboration with research sponsors and authors/researchers responsible for the design of the study and the collection of data. These agencies' practices – of great interest to scholars concerned with the sociolinguistic aspects of texts – relate to interactions between medical writers and editors that affect the mechanics of an agency, its ties with authors, journals, congresses, sponsoring companies, submission processes, data security, confidentiality and training vis-à-vis sensitive data. They respond to a pressing need, shared by medical writers and text analysts, to examine medical communication, its systems and genres in a much wider perspective than the traditional analysis of (A)IMRAD style research articles, which tend to isolate the research article genre vis-à-vis the sociocultural and, in particular, socio-po-

litical context in which the genre and its individual instances exist (Loiacono, 2012a).

These agencies' practices are aligned with existing publication guidelines, such as those for publications like the *BMJ* (www.bmj.com/about-bmj/resources-authors/article-submission) and *The Lancet* (www.thelancet.com/for-authors) and indeed, as may be appreciated from these prestigious journals' websites, can be interpreted as having stimulated awareness in the medical community to cover several key, and hitherto murky, issues such as authorship, transparency and acknowledgements, potential conflicts of interest, financial disclosures, protocol reviews as well as technological innovations such as submission of video material.

These remarks point to the changed status of medical information in current society and the ensuing dialectic on a global scale. Instead of short-term emergency body repairs (classic surgery), today's medical communication promotes a long-term vision of quality of health over an individual's entire lifetime, e.g. on contentious issues such as the manipulation of medical information in relation to food and water supplies. The advertorial in its original inspiration is associated with commercial exploitation pure and simple, selling in a blatantly obvious way but covered by a thin veil of medical authority. As such, it was presented directly to individuals. Today, medical communication is typically mediated in terms of the 3-tier structure presented in *Section 2*. A good example is the issue of Sports drinks which clearly, ought to function at the individual level, whereas in fact the other two levels, as predicted by our model, have become increasingly involved. At the international/institutional level, this has arisen because articles (e.g. Text 9: *The truth about sports drinks* in the *BMJ*) have contested the apparent support (Text 10) given by EFSA (*The European Food Safety Authority*: www.efsa.europa.eu) for the Sports drinks industry's claims that their drinks, with their electrolyte replacement function, hydrate better than water, a debate that seems to bear out claims the absence of direct medical support for the drink industry's claims. The spat between the *BMJ*, Sports drinks companies and EFSA accused of generating needless fear, which is precisely about the status of guidelines in contemporary medical communication, would appear to have led to dissemination among the running/marathon community of unbalanced information as is apparent in the witty article (Text 11) entitled *Pouring water on sports drink health claims* about the dangers of prehydration (drinking before you go for a run) which appeared in the *Irish Times* (www.irishtimes.com).

Sports drinks are among the sweet drinks the Victoria Government has targeted in their campaign (Text 5) which specifically calls on sports facilities and organisations to 'break the link between sport and sweet drinks'. An important feature in this website (Text 5) is that as a government in the Australian Federation it is putting its

case to community levels that directly involve health professionals, specialist clinicians included, and in doing so links them to other social agents, such as the politicians in local government. Also via the appeal to families and schools, it ensures that individual children get the "tap into water" message. From this standpoint, although the text does not contain much direct medical information as to why children "don't need sweet drinks", thanks to its involvement of many social agents, it *does* fall in line with the multi-perspective model outlined in *Section 2* and would therefore score high on an automatic computer-based quantification index that detects the presence of the three interacting levels described in *Section 2*. Much the same can be said about Text 4 which relates to the community level insofar as it is the website expression (www.bundyontap.com.au) of the decision of the Bundanoon community in New South Wales to be the world's first municipality to ban the sale of bottled water and to promote instead the availability of tap water. The site demonstrates the multi-perspective awareness advocated, as shown in the *Premium Bottle text* (Text 4b) which mentions the toxic plastic issue raised previously. This awareness is perhaps one reason why the community's campaign received worldwide media attention. The final text on water regulation(s) (Text 12) relates to the *UK Drinking Water Inspectorate* (www.dwi.gov.uk/) which is an independent regulator of public drinking water supplies with an advisory role as regards private water supplies. Its site is a compendium of stringent tests carried out bearing in mind the underlying medical criteria as well as one that complies with the model we have outlined in *Section 2* as it marries the needs of all three levels, responding to individual complaints while attending to the requirements laid down by the European Union.

4. Discussion

This paper charts the relationship between medical and non-medical information in contemporary health and healthcare texts. Implicitly, it also charts the relationship between medical communication and medical information, and its reliability. As such it constitutes part of the author's long term commitment to research into medical communication and, in particular, the relationship between medical systems and medical genres within the process of communicating medical information and knowledge. It does so mainly from the perspective of medical education of medical undergraduates learning about this relationship as they progress in their preparation for a career as GPs.

Medical information and medical communication may be explored as two different concepts which function in tandem as the two main pillars of medical education. The term 'medical system', and terms such as 'medical communication', and 'medi-

cal information', as adopted here, are, of course, closely related to the terms 'healthcare communication', 'healthcare system' but have the advantage of underscoring the roles and perspectives that doctors *must* assume and *be trained to assume* vis-à-vis others, which includes ethical and occupational aspects. The paper views a doctor as a primary social agent, guiding the management of health and healthcare systems and responsible for the medical decisions that inform the major genres of medical communication: guidelines and protocols, the former concerned with general principles to be heeded in a medical system, the latter with the rules for implementation of these guidelines. Texts 13 and 14 show that the latter may be looked upon as 'front-line' micro-level implementations of the overall guidelines for a medical system, that will involve many healthcare specialists other than doctors. They also suggest that it is doctors who take decisions about, and, above all, shoulder responsibility for, changes to established procedures, which involves (and has always involved from the time of Hippocrates onwards) ethical criteria as a core value in medical activity and medical training and education. It is doctors, too, who bring about changes at the macro-level of a medical system by ensuring that guidelines are kept up-to-date on the basis of accumulating evidence from medical research, epidemiological studies and evidence-based medicine. It is also they who, in specific instances and on the basis of personal experience and judgements about the way an individual patient is responding to therapy, apply day-to-day changes that modify the strict procedures laid down in protocols. It is they to who protect consumer interests (see Texts 9 and 11). Although they are only one component, doctors also have an important role to play in the way that 'health systems' function in society. The WHO's definition, published in 2007, clarifies this:

"A health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities. A health system is therefore more than the pyramid of publicly owned facilities that deliver personal health services. It includes, for example, a mother caring for a sick child at home; private providers; behaviour change programmes; vector-control campaigns; health insurance organizations; occupational health and safety legislation. It includes inter-sectoral action by health staff, for example, encouraging the ministry of education to promote female education, a well-known determinant of better health."

http://www.who.int/healthsystems/strategy/everybodys_business.pdf

This is a wider concept than that envisaged by the term 'healthcare systems', which as the WHO's definition implies, are concerned solely with delivery of health ser-

vices. The expression ‘inter-sectoral action by health staff’ leads us to understand and reflect on the fact that it is again doctors who, despite not being health system designers, nor even front-line health providers, have an important say in the way health systems are shaped today as in the past (Loiacono, 2012b). We may possibly disagree with certain aspects of the WHO’s definition about health systems. We may look on the definition as an ideal rather than a reality as it is open to question on many points. In particular, we may express scepticism as regards the ways, and degrees to which, the concept of health system is interpreted, accepted or rejected in different cultures and societies and the degree of involvement of accurate medical information and medical communication in each such system. But doctors inevitably *do* influence the development of health systems, as they have always done, through their knowledge of medical systems, of which medical communication is an important and, in our belief, under-researched component. Their ability to express a critical interpretative stance on health and healthcare systems is increasingly recognised and incorporated into medical degree courses around the world, in particular as regards the need to train global doctors in a world of global communications (see Loiacono, 2011b for the GMER principles).

This raises the issue of standardisation and, consequently, non-standardisation in medical communication. While digital communication systems may relay medical information and knowledge from one corner of the planet to another in a split second, their messages are open to be misinterpretation. This is not so much because of failures in understanding English, the universal language of medicine, though these do occur. Rather it is because of the non-standardisation of medical communication and, in particular, because of the different semiotic conventions and variations in the text types and genres used in different social contexts and cultures. The mismatch between the quality of medical knowledge and the quality of its communication can arise for a variety of reasons (Loiacono, 2012a). Every day those of us who live in Italy read about cases of what Italians call *malasanità* and realise that many errors arise because instructions about what to do were wrongly applied: an inaccurate dosage, the wrong tube inserted and so on. They are of course not confined to Italy and are reported in the media in many parts of the world almost daily. Text 13 makes interesting reading both as regards its view of the way a health system is typically viewed by various individual and corporate ‘stakeholders’ in a health scandal. However, even more interesting in the context of this paper’s objectives, are its suggestions and implications that the quality of medical communication is poor at both individual and institutional levels. Difficulties, errors and failures in communication can arise in many ways. Potentially faults may arise at the micro-level because guidelines and protocols may have overlooked the need to prescribe, for example,

the use of colour codings for intubation or, even worse, may not have been implemented because, through lack of finance, oversight, and/or inadequate communication, old equipment was used which was incompatible with the protocol (see Loiacono, 2012a: Chapter 2 for a detailed account of colour systems in medical communication). Errors can also arise at the macro-level, because of cultural differences. How quickly, for example, does the average foreigner forced to resort to an Italian *pronto soccorso* catch on to, and deal with, the colour-based system, probably unique to Italy but which could possibly become a European if not international standard, for the initial assessment of the seriousness of a patient's condition, the waiting times involved? The answer is probably a lot better than without the visual/colour system as both written and oral discourse require translation.

It is hardly surprising in the light of the potential for communicative 'error' that the proposed computer platform/template incorporates medical events which serve as paradigm examples of how medical communication evolves, becomes codified, and takes on the modern forms we use nowadays. With the help of a medical timeline, it is expected to focus on how events have shaped the process whereby medical communication becomes codified, and turned into a system of communication expressed through medical genres such as guidelines and protocols. The computer platform/template explores online textual representations in which medical communication shows recognizable forms and features evolving into new genres and hybrid forms, many of them simulated medical training films of US origin but with a clearly standardising and globalising intent.

As described in the previous sections, medical communication is enacted using a variety of genres, written, spoken, and multimodal, some of them well-established in the medical field. In addition to those mentioned above, we may mention editorials in specialised journals, scientific papers, abstracts, medical reports, discharge summaries and so on. Many have undergone a process of hybridization and produced genres such as counter-advertorials (Text 2) that represent the medical profession's awareness of, and response to advertorials, pseudo-medical texts which are essentially adverts for medical products and services disguised as learned opinion about their efficacy (Loiacono, 2011a). Some genres, instead, are evolving parallel with technological change: online medical counselling, mobile applications in medicine such as self-evaluation, self-diagnosis and video-based medical interviews. These developments are a further indication of why doctors need first and foremost to be aware of the consequences and implications of such innovations in medical communication. All this needs to be seen in the broadest perspective that includes a historical awareness, cross-cultural considerations and educational implications. This is why the paper is at once both diachronic and synchronic in its approach.

Events in the past are seen through the perspective of the relationship between a medical system and the communication of the medical information that pertains to it.

How good is a trainee doctor's ability to recognise genres and conventions and to spot differences in medical communication in different social contexts and different societies? Experience in teaching undergraduate and postgraduate leads to the conclusion that awareness-raising is much appreciated by students and requires innovation in the way communication in English is taught. We believe that a broad perspective is essential and do not subscribe to the view of Medical English, often presented in course books which explicitly or implicitly refer to this concept, as restricted to direct doctor-patient interaction. Quite often a patient and a doctor will often meet only briefly in hospitals. Instead much of the interaction will be between a patient and other healthcare workers such as nurses, laboratory technicians and paramedics who, for example, will take a patient's medical history and carry out a physical examination, a process known technically as clerking and for which there is considerable evidence to suggest the equal or superior skills of, for example, nurses than doctors. As Text 14 shows the degree of delegation varies from country to country and suggests the process of evolution in this respect at an uneven pace in different parts of the world which certainly brings about improvement, the upside, but also introduces, the downside, non-standardisation.

However, significantly, and in support of the model of medical activity and education envisaged in the template, innovation in teaching needs to be offset by an understanding of ethical traditions in medical communication. The author's experience in medical classes has been that classical references are always welcome. Students in general and medical students, in particular, need to show analytical skills in their learning strategies and, though they seem to appreciate innovation in teaching, they particularly like it when the link with previous steps is evident and when concepts are presented as a sequential and co-ordinated whole. For example, emergency medicine can be looked on as a medical system that envisages a number of steps: calling an emergency service for an ambulance, despatching an ambulance of the right type (Mike, India, Victor), providing emergency aid, such as resuscitation via a phone call while an ambulance is arriving, continuing therapy in the ambulance, deciding where to hospitalise a patient, i.e. which hospital to go to, all of which will be followed up by other steps in the hospital such as initial assessment of the patient's condition and assignment to a ward, laboratory tests, surgery, pharmaceutical regime and so on before final discharge. Some of these steps will not, of course, be enacted in any specific case; they are, however, implemented through protocols, procedures and instructions to be followed rigorously in treating patients.

Many of these steps will not directly involve a doctor and are implemented instead by healthcare professionals such as despatchers, nurses and paramedics. But, as mentioned above, budding doctors need to be aware that medical guidelines govern the way in which whole or parts of a medical system are conceived of and shape the way protocols are drawn up. Medical guidelines in today's world are often redrawn as a result of legislation, requests by government health ministries or departments, or a need perceived by society in general or by medical doctors themselves for changes to be made in a particular medical system as a result of new medical evidence.

The broad perspective that we adopt in the template has much in common with the philosophy of CLIL (Content and Integrated Language Learning). In our view (Loiacono 2012c) the 'content' of Medical CLIL relates to the information, knowledge and procedures that a medical system needs to impart while 'language' may be seen as the set of discourse strategies and above all the genres that medical communication deploys. All this goes to show that medical communication is a complex process which calls for close investigation and analysis as well as a comprehensive outline of the social, linguistic and semiotic aspects that interact in the process itself. The complexity of this process includes, but often transcends the ideational, interpersonal and textual variables that scholars such as Halliday (e.g. in Halliday, Matthiessen, 2004) have shown manifest themselves in any interactional event. Indeed, the connectedness of, and connectivity between, interactional events needs to be stressed in medical communication, a reflection that many things are going on at the same time, including multiple simultaneous interactions on different planes which TV programs such as *ER* and *Dr. House* which, despite their sometimes dubious medical content, have rightly foregrounded (Loiacono, 2011b). Learning to connect specific genres to medical systems and specific events within a system increasingly requires doctors to come to terms with what we call multi-texts which are in keeping with Halliday's view of texts as units of meaning in context (Halliday, 1978:60) but which function by bringing together, not one, but rather a set of interacting contexts and text forms. This and other perspectives on text and genres are explored with micro-level text and genre analysis in the proposed template as a way of getting to grips with medical communication.

5. Conclusions

How much fruit, sugar and fat are there in your favourite ice-cream? In a sense, medical culture is also in need of quantification of how much medical information there is in a debate in a Health Committee, in an iHealth video, or in a medical blog? This article has attempted to lay the foundation stones for investigating and

measuring the relationship between medical/non-medical information co-packagings in socio-political communication and the manipulations that occur across social and textual levels. There are many ways in which measurements could be carried out including contextualised comparative word counts. Such measurements go beyond the scope of this article which is concerned more with identifying what needs to be measured and above all *why*.

Ethical considerations suggest that a balance is required in the representation of medical and non-medical priorities in many social contexts that goes beyond the current levels of representation, frequently marked by conflictuality or mutual exclusion and/or disregard for others' positions. Corrective efforts to put in place procedures and practices that transcend or sidestep situations giving rise to various forms of bias (exclusions, misrepresentations or conflicts) certainly exist and have been exemplified with the brief mention of two cases studies – private medical writing agencies and public water management inspectorates. The troubleshooting functions of such agencies, many created or instituted in recent years are designed, with varying degrees of success, to pre-empt and sidestep such phenomena as public outcries and insider whistleblowing and thus constitute an alternative for other, older remedial expedients (parliamentary enquiries, legislation, court rulings) that respond to, rather than ward off, conflicts manifested by a such genres of dissent as: counter-advertorials, wikileaks, blogs and so on.

In this respect, as well as being evidence of the efforts society is making to achieve balanced and ethically-informed communication through multi-perspective representations of social practices, the reference texts are also witness, on different but interacting social levels, to the hybridity of contemporary health texts that has been underscored throughout this paper.

Any one text is made up of elements of another. According to Fairclough discourse may involve 'manifest intertextuality' [...] direct quotations for example- or 'constitutive intertextuality (or interdiscursivity)', where one genre or discourse type uses the textual features of another apparently unrelated genre.

(Brown et al., 2006: 9)

In exploring the hybrid nature of medical/non-medical text co-packagings we have drawn attention to the usefulness of intertextuality as a tool for analysis and comparison that goes beyond the confines of well-known intertextual phenomena such as direct quotations or the features shared by texts belonging to the same genre. Instead we have taken a cross-genre and cross-cultural view of intertextuality applying

a 3-tier framework that shows how the process of medical communication by social agents other than medical personnel needs to emerge if ethical standards are to be maintained. An objective multi-perspective approach is a priority. The one proposed here studies sensitive contexts and identifies how medical information from medical and non-medical sources comes to be intertwined in an often contradictory mesh of medical, commercial, political and media interests. Future corpus-based/concordancing, statistical studies (Loiacono, 2001) and automated online statistical analysis that provides a 'DNA'-like analysis of specific health-related texts in line with the model described in *Section 2* are needed. There is a need to consolidate, for example, our understanding of cross-cultural differences which were evident but somewhat overlooked at the time when the swine flu epidemic broke out during which the Italian media reports showed remarkable differences in comparison with other countries' reports in terms of the quantity of the medical information exhibited. These cultural comparisons in the medical and political fields raise the question: "Are we facing a brave new world?". Only time will tell. For the moment we can leave readers to draw their own conclusions about today's medical culture and the similarities and differences with the past by inviting them to mull over what Bynum writes about the Enlightenment:

[It] was a time of impressive medical entrepreneurialism. Health mattered, and people were prepared to pay for it. This meant that ambitious (or devious) healers of all stripes could seek to carve out their niche in the medical market place. Telling the difference between the 'quacks' and the 'regulars' was not always easy, since many so-called quacks also generally operated within the cultural cosmology of medicine, and 'regulars' might advertise their therapies, use secret remedies, and cultivate notariety as a means of attracting attention, and thereby patients.

(Bynum, 2008: 41)

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Text 2: Editorial on advertorials genre: [http://www.appliedradiology.com/Article.aspx?id=17074&terms=advertorials + select download pdf using the "Comments" box](http://www.appliedradiology.com/Article.aspx?id=17074&terms=advertorials+select+download+pdf+using+the+\).

- Text 3: Community sociomedical video genre (Welsh assembly): Committee 1 – Health and Social Care Committee, 18 July 2012 http://www.senedd.wl/archiveplayer.jsf?v=en_800000_18_07_2012&t=5851&l=en
- Text 4: Local community sociomedical website genre (Bundanoon's return to tapwater): <http://www.bundyontap.com.au/>; see also Text 4b <http://www.bundyontap.com.au/waterbottles.html>.
- Text 5: Community sociomedical website genre (Victoria Government's programme to replace sweetened drinks with water) www.goforyourlife.vic.gov.au/hav/articles.nsf/practitioners/Tap_into_water_everyday?openwebsite.
- Text 6: Sociomedical interview genre: the video, www.youtube.com/watch?v=OcTyhd_4TUE&feature=related, is entitled *Which is Safer: Bottled Water or Tap Water?* It is an *iHealthtube* video belonging to a newly published site *iHealth Tube*, <http://www.ihealthtube.com/>. The film provides a further reference to the interviewee's website: www.mckayjenkins.com, author of the volume: *A Silent Spring for the human body*.
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