

# Meaningful health information for all utilizing user driven innovation in e-health: a proposal

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**Abstract/Summary:** Average patient data, which occupies most of our present day information bases, is often unable to satisfy individual patient needs. In spite of the medical information base expanding unprecedented at present we still do not have that quality of information to satisfy a given individual patient to an optimal extent. We need an information base that can seamlessly integrate information needs of all categories of certain individual medical learners namely patients, medical students who are also health professionals with matching solutions offered by other individual medical learners who have already gone through the particular experience the other group needs. We need to have a medical learning database where patients and medical students/health care givers regularly key in their narrative logs into a suitable web interfacing device (presently PDAs are the closest fit although in the near future it is expected to improve into something wearable with a more efficient input arrangement than the PDA stylus keyboard). This input would simulate a learning neural network with the input channeled to other individual users (with qualitative narrative analysis software to extract themes suggesting information needs from the individual users e-log input). Following this the network automatically would match each node's (individual user's) information needs through synapses (emails) and the output could be re-iterated several times via a back propagation algorithm to generate an optimal learning solution output.

## **Introduction: defining the medical information user**

The mind always needs to keep learning and in medicine information keeps expanding at a rate that is quite a challenge for all levels of medical learners. Information needs drive learning and we begin by identifying the various information needs of different human categories that desperately need to learn.

### **Categories of medical learners** (potential users/consumers):

Category I (Patients and their relatives, primary care givers) All humans are potential physicians but only a few receive formal training. The initial queries of “ Where is the problem? Why is this happening?” are all standard disease localization approaches utilized by physicians and it is likely that similar queries are also posed by patients and their family members (very often to their own physicians/health professionals higher in the learning hierarchy).

Category II (Physicians/Health professionals, secondary care givers) they are formally trained real world healers who are generally looked upon by most humans as areas of support whenever their health systems are in trouble. In terms of learning needs they remain life long medical students. [1]

Both categories have to constantly keep learning and updating themselves to keep up with the vast body of medical information connected by a spidery web that keeps evolving and changing rapidly.

*“There is no doctor or patient, only different categories of medical learners”.*

### **Approaches to Learning:** Top down and bottoms up learning

*“Top down is a pre-formed idea and we can choose to say yes or no. Bottom up is an exploratory idea where new direction can be woven from multiple diverse strands (many of which can be "top down"). Top down is essential; bottom up is existential. Top down relates to realist ontology - it is really objectively there; bottom up relates to relativist ontology - it is there if it is meaningful to you. Today's bottom up can be tomorrow's top down and vice versa. Top down in one place is bottom up in another. The two are constantly (and rightly) interwoven at all levels.” Paul... from the complexity in health list*

## **Top down medical learning: present problems in the top down specialty care model**

The present system of medical learning especially during formal training is more top down. Future health professionals are very often simply expected to learn and memorize the structure of their chosen field of medicine and then apply it for patient care. However a complete top down approach in present day health care is increasingly unable to support health care practice as the volume of information keeps growing by leaps and bounds. (2)

One response of the present health care structure to this problem has been an ant like division of labor where health care workers specialize in certain areas so that they can focus on a smaller volume/area of accumulated information and thus offer their expertise in their chosen areas. There is an old adage often used to qualify this approach as, *“Knowing more and more about less and less until one has known everything about nothing”*.

Interestingly there isn't much historical evidence to suggest that this approach is doing wonders to present day health care (3). On the contrary present day patient satisfaction with health care seems to be at an all time low.

One of the important present day problems with this approach is that from the patient perspective searching the health professional with the appropriate expertise to tackle their particular individual problem becomes like looking for a needle in a haystack.

To quote an individual patient's relative,

*“While the quality of the medical care my mother received was extraordinary, I saw firsthand how challenged the health care system was in supporting caregivers and communicating between different medical organizations. The system didn't fail completely, but struggled with these phases:*

- *What was wrong -- it took her doctors nine months to correctly identify an illness which had classic symptoms*
- *Who should treat her -- there was no easy way to figure out who were the best local physicians and caregivers, which ones were covered by her insurance, and how we could get them to agree to treat her*
- *Once she was treated, she had a chronic illness, and needed ongoing care and coordinated nursing and monitoring, particularly once her illness recurred.*

Adam Bosworth, Vice President, Google, "Health care information matters: <http://googleblog.blogspot.com/2006/11/health-care-information-matters.html>

Also wouldn't it be much easier for patients if the large task force of health care professionals kept learning more and more about more and more (instead of less and less) and brought back the good old days of the all-knowing family physician (not necessarily

all powerful) who could function as a pillar through out the whole healing process only this time the family physician would have an important check in power by the well informed patient.

### **The need to de-specialize**

The common refrain to such ambitious proposals of knowledge/expertise accumulation by the present day average health professional/physician is immediately waved off as impossible and unsavory. Whoever heard of a physician doing echocardiographies as well as endoscopies and also managing patients on dialysis or a surgeon operating on Hirshprung's as well as doing Cesarean sections? It may not be that 50 years back physicians knew less or had less information and expertise to cope with. What has happened with progress is that the old volume of information and expertise has simply been replaced with the new. (3) With rapid technological strides and shrinking tools of the trade, like an echo ultrasound scanner incorporated into the mobile phone and the endoscope (fit for a sword swallower) getting replaced by the capsule with a videoendoscopy unit and with the advent of tele-robotic surgery it is no longer impossible for the individual physician-surgeon to learn and expand in a multidisciplinary approach rather than a small focused area. Physicians and surgeons who could have benefited society to a larger extent with their multiple areas of expertise and continued self development with a bottoms up learning approach have largely moved by their own choice to more remote areas before they could be exiled by the increasingly dominant and territorial top down experts defending their smaller areas of expertise (backed by market forces).

Quoting from a recent email forward,

*"... Physicians here are awe-inspiring. Every one here is in the process of 'de-specializing'. That does not mean that they are losing their skills as specialists. It means, they are learning the other specialties. ENT surgeon here is managing medicine OPD patients for 5 yrs and knows more about approach and management of general OPD issues than I do. A pediatric surgeon has become a general surgeon and has learnt anesthesiology and practices it when no volunteer anesthetist is available. A pediatrician is learning C-sections. Needless to say, they are all able obstetricians.*

*They all (7 physicians) started without any preconceived notions. Came to a rural setting and started learning how to become rural doctors. Many of my myths were shattered here in the first week itself..."*

*Priyank Jain, Resident Medicine, Wisconsin Milwaukee on a visit to a rural health set up run by a few committed physicians in Ganiari, Madhya Pradesh, India*

### **Bottom Up medical learning: Need for a user driven innovation pertaining to E learning in Health**

*When we say health information for all, it is pretty much self explanatory... but in this context what I would like to highlight is the fact that the target population is not a single entity but multiple groups... some are at a better financial status, some have better access to libraries and*

*journals, some use the internet more often, so on and so forth.*

*So, I feel, the first step is to define the population for which we are trying to provide the health information. In that way we will actually be able to understand*

- 1. the needs of that population*
- 2. find out the best means by which we can provide the information.*

*So in this question of WHO needs WHAT, it is necessary to identify the WHO... then the WHAT will automatically manifest.... then we can discuss about the WHEN, WHERE and HOW*

*Kaushik Sundar, Medical student, Vydehi Institute  
Of Medical Sciences, Bangalore, India. Posted to HIFA2015 [www.hifa2015.org](http://www.hifa2015.org)*

In recent times the top down compartmentalized structure of medical education and practice has been challenged by the evidence based health care movement (before it got compartmentalized itself into a specialty) and the complexity in health care movement. Both groups have recognized the need to disseminate learning on a broader basis that bridges the compartmental divide (presently with weak forces) across the specialty structures in the standard medical model. Bottoms up learning resurged in medical education in a bigger manner with the formalization of problem based learning in the 1980s closely followed by the evidence based health care movement in the 1990s. Evidence based health care is a form of problem based learning applied to daily health care activities with a purported objective of meeting individual patient needs using the accumulated and growing epidemiological population based average patient outcome data. At present it fights a gradually losing battle to establish an absolute unchanging structure of medical truth that is generalized to all users on the basis of statistically averaged health outcomes from controlled trials.

“So what is to become of us serious medical technocrats in this postmodern age where multiple versions of the truth abound?” (4)

A useful perspective to the initial problem of health information for all, defined at the opening of this paragraph would be to look at it from a bottom up user driven approach and the answer may be, “ *All humans may need to use health information and depending on their stance as a patient or health care professional their individual needs would vary and may not be answered by the average patient approach modern medicine compels us to go by.*”

**The Problem-***Why does all our information oversupply fail to satisfactorily answer the needs of a given individual patient or physician?*

Average patient data, which occupies most of our present day information bases, is often unable to satisfy individual patient needs. In spite of the medical information base expanding unprecedented at present we still do not have that quality of information to satisfy a given individual patient to an optimal extent.

To quote from an important article on information needs,

*“Thirdly, the questions are often complex and multidimensional. They are often questions about both particular patients and different areas of medical knowledge--for example, "In an octogenarian with anemia, angina, and a history of transient ischemic attacks, with a normal creatinine, iron, and mean corpuscular volume, who refuses a bone marrow exam, what diagnostic and therapeutic options are there?"*

*Fourthly, the need for information is often much more than a question about medical knowledge. Doctors are looking for guidance, psychological support, affirmation, commiseration, sympathy, judgment, and feedback. This "information need" is particularly poorly explored, and yet it may well be the most important need and the biggest stumbling block to a technical solution.*

*Fifthly, most of the questions generated in consultations go unanswered. (2)*

**Seeking Solution:** *How then do we care for the multidimensional information needs every individual can generate? Does information technology offer a solution?*

We need an information base that can seamlessly integrate information needs of all categories of certain individual medical learners namely patients, medical students who are also health professionals with matching solutions offered by other individual medical learners who have already gone through the particular experience the other group needs. We need to have a medical learning database where patients and medical students/health care givers regularly key in their narrative logs into a suitable web interfacing device (presently PDAs are the closest fit although in the near future it is expected to improve into something wearable with a more efficient input arrangement than the PDA stylus keyboard).

### **Prospective Case studies (Daily E-log samples)**

These indicate narrative Informational needs as well as experiences at various levels of medical learning accumulated at various positions of the present author-physician-academic, spanning seven years and 3 teaching hospitals/institutions in 3 different countries (Nepal, India and Malaysia). The underlying theme is that the daily narrative data a patient, health care student/professional generates reflects both their information

needs as well as information contribution (learning points) to the medical knowledge base.

These informational narratives may also answer the problem of complex multidimensional needs. Access to life experience information of one patient that finds a match in another patient can itself act as a sort of narrative therapy for that patient

Case study/Sample one:

Patient (category I medical learner/user) narrative with extracted learning themes/information needs from the point of view of a category II medical learner/user (A physician academic) teaching his students on the particular disease  
It reflects a fusion of bottom up patient needs and top down medical theory.

For full narrative see web link:

[http://www.medspan.info/component/option,com\\_smf/Itemid,84/topic,101.0](http://www.medspan.info/component/option,com_smf/Itemid,84/topic,101.0)

Case study/ Sample two: A physician's log on his daily ward rounds

For full narrative see web link:

[http://www.medspan.info/component/option,com\\_smf/Itemid,84/topic,102.0](http://www.medspan.info/component/option,com_smf/Itemid,84/topic,102.0)

Case study/sample three: It depicts a medical student's thoughts: the process of development of clinical reasoning. Also an example of M-learning where the medical students shares his clinical findings utilizing his mobile phone to click pictures of the findings (after appropriate consent from the patient).

[http://www.medspan.info/component/option,com\\_smf/Itemid,84/topic,103.0](http://www.medspan.info/component/option,com_smf/Itemid,84/topic,103.0)

Case Study/Sample four: These depict medical student narratives from Melaka Manipal Medical college, Malaysia of their individual patients utilizing E learning and M learning.

- 1) A student's ward experience:  
[http://www.medspan.info/component/option,com\\_smf/Itemid,84/topic,62.0](http://www.medspan.info/component/option,com_smf/Itemid,84/topic,62.0)
- 2) Student's e-queries and e-replies from her actual teacher, facilitator:  
[http://www.medspan.info/component/option,com\\_smf/Itemid,84/topic,41.0](http://www.medspan.info/component/option,com_smf/Itemid,84/topic,41.0)
- 3) Some of the narratives cover the chronic illness experience and some are hands-on learning of clinical skills and M phone pictorial documentation of disease manifestations:  
[http://www.medspan.info/component/option,com\\_smf/Itemid,84/board,24.0](http://www.medspan.info/component/option,com_smf/Itemid,84/board,24.0)

## **E health solution proposal illustrated- Individual user driven information matching**

At present such detailed logs are difficult to generate daily with the kind of web interfacing solutions at the disposal of the average human. At best the daily jottings a patient physician may accomplish on his PDA is something like this (Copied from real personal logs made by the author on his own PDA as well as hand written):

1) *June 6, Rounds and OPD, usual dissipation to OPD at the end of the rounds. Bed 5 felt very bad about the CML who landed up with pancytopenia because I overlooked stopping the Hydrea at 4,500. He's having a count of 200 and CXR shows b/l apical infiltrates. B's farewell with canned beer.*

2) *Bed 6 Old mitral valve replacement with rheumatoid arthritis. Last admission for increased joint pains and increased INR (6.5) with hemoptysis. Adjusted warfarin dose last time to 2.5 mg and also added a statin. Came back this time with possible statin induced myositis (CPK 1000) Discussed differences between myositis and myolysis with students on the rounds. Also the present INR on 2.5 mg warfarin was subtherapeutic (1.09)*

3) *June 7 Great day. Bed 10 SAH with massive hge in CSF. Looked as if traumatic. Kudos to G for having suspected it and having held on to the idea that the bloody CSF was indeed not traumatic but subarachnoid hemorrhage. CML graph of treatment and progress. A's trend analysis of the WBC counts on Xcel...shopping ...good bargains.*

4) *Bed 11 Patient with severe pulmonary hypertension, nice palpable P2 and also AF. Had a past history of TIA for which now on warfarin 2.5 mg once daily. INR maintained (2.5)*

More often they are just telegraphic information:

5) *Relooked Bed 11...student's request. 50 yr Male, Neph synd with DM, with diab foot dripping pus on the bed. No dressing since yesterday?...Blood sugar values?*

6) *Bed 10 60 yr Male, collapsed suddenly, cirrhosis with end stage, didn't want to resuscitate but had to for protocol as we had missed out on the dnr earlier. Students had an exercise.*

7) *OPD 54 yr F, undifferentiated collagen vasc disease, vasc rash, erythromelalgia, hist of raynauds, arthritis, 3 months, increased with sea food, children's comment: mother looks like the lobster she has eaten.*

8) *OPD 40 yr F recent Diab, Fasting sugars 7.3mmol and 6.8 mmol, mother diabetic 10yrs, started on metformin and telmisartan 40mg, sugar free cough mix (? Ammonium ipecac)*

### **Relevance of daily E logs to solve individual patient/health professional user needs:**

Around 70% of the information needs that the patient/ physician may identify from these personal logs goes unanswered due to lack of time. [2]

For example the academic physician-consultant (author of the real log example) had seen the diabetic man in example 3 earlier on his morning consultation rounds but he realized that this patient's blood sugar control had been overlooked only after a medical student requested him to have another re-look. He made a point to inform it to his junior colleague, the medical officer who would remain in the wards (immediately after making the telegraphic note about Bed 11 in his personal diary) but at that point of time all of a sudden Bed 10 collapsed and he had to participate in a CPR that was emotionally and physically draining and he was relieved to escape to the OPD for the day.

#### *Sharing and communicating valuable individual patient data*

If this data was on a web portal as soon as he had entered it into his PDA, the data would have matched with his other colleagues data for the day regarding this particular patient (a virtual hospital filing system) and his junior colleague (Medical Officer/Senior Resident) doing just a file review on his PDA would have noticed the note and acted on the diabetic's blood sugars if it was high. Controlling it better may have benefited the wound more than the systemic antibiotics that he was already on (which had doubtful local benefit). This technology offering a convenient local solution to improving hospital communication among in house health professionals is evolving at present in many hospitals although most health care givers still prefer the personal face to face approach (which may not be always feasible as depicted in the example).

#### *Medical students as a vital force in E learning and improvement of patient care*

The government generally thinks that it spends a lot of money in Undergraduate Medical training perhaps as these student doctors apparently do not serve while they learn. However it is the medical student who has the time to listen in detail to their chosen individual patient (they do not have to see and are not responsible for all the ward patients unlike their overworked houseman/resident seniors). Medical student logs on their individual patients can be a vital source of detailed narrative data on individual patients which their consultant might often enjoy reading (web link: Kaushik's, mmmc) and also benefit from daily. The medical student who pulled the consultant to the bedside may as well have entered his thoughts about his patient on his PDA-elog that would have been automatically been reviewed by the consultant or his Medical officer (Senior resident).

### *Individual patient learning and communicating from global experiences*

In the present proposal we are looking at a global solution for all varieties of individual users. Perhaps a diabetic patient in another part of the world on keying his concerns about his own feet ulcer would find a match in this incident and could become aware of the need for better sugar control in his own situation and may remind his own physician about his increasing sugars (the emotional appeal in narratives may make for better patient learning?). Not that his/her physician is not knowledgeable but all physicians are erring and forgetful humans as much as all patients are potential physicians (of their own systems to begin with).

### *Different individuals have different responses to the same drug and dose*

In Example 2 and 4 the patients were taking the same drug Warfarin at 2.5 mg each day for different initial reasons to maintain an anticoagulant state (keep their blood thin...as explained in patient language). Yet their anticoagulant status as determined by their individual systems (bodies) was very different. This is just to draw an analogy emphasizing the complexity of dealing with different individuals in health care. There may be countless other examples.

### *Detecting an opportunity for research in the simplest of anecdotes*

The fact that the children noticed their mother becoming red right after eating seafood may suggest a food allergy triggering an abnormal immune activation in this particular patient presenting with features of an undifferentiated collagen vascular disease.

The author can generate a lot more of such beneficial examples of shared e-logging in health care by going through his past hospital logs and shall do so in future.

### **Manner in which proposed E health solution may be used**

With improvement in technology these valuable data of daily processes generated by a given individual can be recorded and documented daily in web based archives. Once in the net there is technically feasible software already existing that can quickly extract themes from these individual process narratives. One just needs to send the above-mentioned case study narratives via gmail and notice the advertisements generated. The advertisements contain something relevant to the information needs posted in the mail and it is obvious that the software used by gmail is able to locate a few of the needs in the information content sent on the mail. Although a separate study can be done on how close gmail can itself get to successfully answer the information needs in daily elogs but we need not get into that as gmail/google obviously is far from providing it at present although one can't rule out a future possibility (5)

Once individual users (the patient, medical student, health professionals) information needs are identified using narrative analysis with available qualitative or other soft wares,

another software/search engine would automatically collect the matching information available on the web from another individual patient/medical student health professional as well as any related top down theory based information content and post it appropriately to the site/mail of the individual users concerned (with web links for detailed reading).

In this way any individual user feeding input into the net can receive automatic feedback that can grow as individual users for this web based solution keep growing and feeding their own daily data. Growing feedback from multiple patients (multidimensional single loop feedback learning) would spur interest and learning in the identified area of need and can be strengthened by the user returning the feedback with more information/needs to the individuals sending him/her the initial feedback (double loop learning).

### **Multidimensional learning:**

I would like to illustrate this with an email anecdote:

*I first encountered it many years ago (1965) in a lecture by George Barnard.*

*As the train went through some rural hilly countryside, the astronomer looked out of the window and saw a solitary sheep in a field, which was black in colour.*

*"Look!" he said. "The sheep in Scotland are black!"*

*"There you go again!" said the physicist. "All we can really conclude is that some of the sheep in Scotland are black."*

*"Well," said the statistician, "what I can tell you is that in Scotland there is at least one sheep, of which at least one side is black."*

*As far as it goes, this is a nice little parable to draw the distinction between what we directly and surely know, as a description of observation, and the different degrees of generalisation that people may want to make.*

*The sequel to the above (and I'm reporting a genuine true observation of my own) comes many years later (1998 or thereabouts).*

*I was walking along a narrow lane in a really remote part of North-East Scotland, and saw about a dozen sheep in an enclosure. One of these was black.*

*Until I walked on a bit further. Then I saw that the front half of that **sheep** was white, and only the rear half **black**, the transition being across a sharp transverse section about halfway along its body. I had of course initially seen it from the rear.*

*Thus in the course of time I made an observation which exactly confirmed that the statistician's "unrealistic" minimalism constitutes a valid reservation about what may be true in the world.*

*Ted Harding in the EBH list*

*(<http://www.jiscmail.ac.uk/archives/evidence-based-health.html>)*

No one can deny the benefits of statistical evidence based medicine to justify the validity of our treatment. It is perhaps a very good measure to decide what treatment not to give in general. However it is not enough to manage a given individual patient. The present day top down approaches to meaning in medicine offers a one or at best two-dimensional view to the patient's problem. In the email anecdote although the statistical observation was valid it was not a complete observation. The patient/health professional generally relies on anecdotes from friends, relatives and colleagues or even astrologers and faith healers (for some patients and health professionals, who may become patients sometime in their lives) to satisfy his/her need for other dimensional views to his/her problem. With the above-proposed method the patient may receive the other dimensions in an optimally efficient manner.

### **Proposed solution and neural network learning**

The multidimensional learning proposed here is very similar to a learning neural network with the input being automatically fed to multiple users (nodes) who may synapse with the initial user and other users (via email) and finally the resultant learning output shall return to the initial user by a back propagation algorithm and the process may continue to reiterate till there is an optimal solution to the problem.

## Summary Points:

1) In E-learning for E-health “*There is no doctor or patient, only different categories of medical learners*”.

2) There is no proof of the present top down subspecialty approach in medicine resulting in better outcome or patient satisfaction.

3) Average patient data, which occupies most of our present day information bases, is often unable to satisfy individual patient needs.

4) Evidence based health care has brought validity to modern medicine and yet is limited by its inability to provide the whole picture.

5) Every individual patient and health professional has multidimensional information needs that require fulfillment.

6) Individual patient or health professional user driven information sharing utilizing a web-based platform may be a useful way to fulfill those needs.

7) This learning solution may be a stepping-stone to address the present problem of information oversupply in medicine that mostly remains unutilized, as it doesn't match the needs of the individual.

## Technical feasibility

### *Present technical problems with the method proposed*

- 1) Time consuming –recording of daily processes with a PDA at best can be telegraphic information (as in the previous mentioned example) rather than detailed thought narratives. In the near future this may improve with wearable web interfacing devices.
- 2) Language shall remain an important impediment not just in terms of the spoken tongue but even in terms of interpreting symbolic languages like that of mathematics or statistics.
- 3) Interpreting information feedback-Once the information needs are identified and fed back to the individual user interpreting and using it would again be a highly individual exercise and although we would have loved the information to simulate a structured absolute truth, in the complex real world there may be multiple versions of truth that may vary according to individual user needs (4). The evidence based health care movement at present fights a gradually losing battle to establish an absolute unchanging structure of medical truth that is generalized to all users on the basis of statistically averaged health outcomes from controlled trials. Critical appraisal is the term for this variety of statistically generalized interpretation but it has demonstrably failed to consistently satisfy the multidimensional needs of the individual patient.
- 4) Need for a better web interface: While individual user/authors write, think, and modify their e logs a PDA may be grossly inadequate to sustain such an activity. We need a web interface where pages can be turned and information gleaned from multiple pages at one glance, an essential step in multidimensional learning which the present one dimensional scroll panel in PDAs can hardly provide.
- 5) Privacy and copyright Issues- Patient privacy shall always remain a thorny issue. Privacy is a way of blocking learning. As long as we want to remain private we do not want any one to learn about us. In that case wanting to meet our information needs and learn and yet remain private is a contradiction in terms. If patient's or health professionals want to learn and meet their information needs they have to share their information with a network.

Even something as personal as a letter is not personal anymore with the advent of email that can be easily forwarded, shared and not only that our individual personal letters or E logs (that the present proposal banks on) are being used by search engines to advertise depending on the information needs contained in our letters or e logs. A useful excuse for this is to compare it with post cards in the post office where the postman can read our mail but generally doesn't bother to. The future of information

age doesn't seem to have much allowance for privacy and privacy in future will become a direct antagonist of information (unless the future brings in a new era of information withholding technology).

All said and done allowances have to be made for preserving patient anonymity with due attention to omit particulars that may make it possible to identify users. Speaking from the viewpoint of a developer or vendor of the solution (arising from this proposal) as the individual user continues keying his/her own logs every day he or she would need to take the necessary precautions and responsibility to protect his/her own as well as the privacy of others he mentions in his/her own write ups. However we shall still need information withholding technology to resolve the issue where the patient data needs to be seen by the caregivers managing the patient as discussed in the sample log 3 but at the same time withhold patient particulars from the individual on the www who still can access the patient's care giver narrative.

Each individual user as a node may retain copy right as authors of the initial information generated by their own daily processes and fed as e-logs to the network.

*Each and every individual is the author of his own destiny (as well as his own web log) that reflects his life processes and decisions that can shape his future.*  
The present proposal is an attempt to help make those decisions

### **Bottom up knowledge translation and present day top down medical realities:**

How individual medical learners utilize their answered information needs would be the beginning of another process in continued bottom up development in medical learning positively complimenting the present pedagogic top down approach that dominates current medical learning.

How they may compliment each other and the role of this solution in helping present day health care can be illustrated by another parting anecdote (considering the fact that this article is already thriving on them).

I have kept it telegraphic on purpose:

*"A bottom up husband and a top down wife. Husband... happy go lucky, take it easy, wife...perfectionist, hates the way her husband does the dishes with left over grease etc (...minimal according to husband). Wife insists on doing the dishes herself. Husband's bottom up solution? Wash the dishes when his wife is not looking and leave them on the wash basin for his wife to give the finishing touches."*

Let this bottom up, multidisciplinary, qualitative, web based solution at least make a beginning in helping to lessen the health care burden of present day top down, focused, quantitative, modern health care (before we can even think of more ambitious goals of a web solution changing the practice of medicine).

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## Competing interests:

The author is more concerned about the health care issues of E-health than the technical issues and his technical viewpoint may seem naïve at places.

This write up does not make any pretensions of being an authoritative tome on the rapidly evolving field of M-learning or E-learning. There are a number of issues that have been untouched like business viability, assumptions of individual user sincerity etc and the author hopes that the reader shall respond to them (rakesh7biswas@gmail.com). The objective of this article was to exchange ideas and encourage debate. The author would feel rewarded if it can achieve the same.

This write up has been shared extensively on email and online portals.