VA is the largest integrated healthcare system in the United States. At the same time one of its important related missions is educating healthcare professionals for the future. What I want to talk with you today is about aligning education with the system of redesign, clinical redesign that is going on in within the Veterans Health Administration at the moment. The agenda that I have for you is to talk first about Primary Care practice redesign using that as the framing element for the educational system redesign. That will require talking about VA’s new model for primary care delivery Patient Aligned Care Teams or PACT which are patient centered medical homes. VA has adopted patient aligned care teams to describe it’s approach to patient centered or patient driven clinical care.

With that by way of background, I will be able to talk about Primary Care Education and system redesign and I will be using as example, VA’s Centers of Excellence in Primary Care Education

I will talk about some of the early lessons learned, from those CoEs some new rules that are beginning to emerge from those lessons and then some brief discussion of the next steps VA has taken to expand these activities.

Perhaps the most important principle to start with, is that one cannot redesign the educational system without the same time redesigning the clinical care system. In fact, the tail does not wag the dog, the dog wags the tail. The tail is education, the dog is the clinical care system. So if we are to think about a redesign of educational elements we need to frame that within the context of the clinical system redesign.

Now clinical care delivery systems can be thought of as three overlapping components. First of all there is a point of care, where the care is actually delivered. Secondly it is important to keep in mind that that the clinical micro environment is embedded in an institution. Last of all these multiple institutions, VA hospitals and community outpatient clinics are embedded within the US healthcare system overall. So if those are the three areas that may have impact on educational redesign, it is important to keep these three elements in mind.

At the middle of the clinical micro environment is the patient. VA has a new system of patient driven healthcare in which the patient makes the decisions around what he or she needs. So the patient is at the center of the clinical micro system. The patient is surrounded by caring. That is a series of healthcare professionals, both trainees and staff, who care about the patient and deliver care to that patient. Caring is not the same as delivering care. In the VA we are most concerned about our attitudes and our behaviors in caring for all aspects of the Veterans expectations and needs. At the same time another component of that is actually delivering healthcare to the individuals that we manage.

Related to the caring piece is a learning piece. The more we care about and for the patient, the more the trainees in the system learn about how to deliver care in the future when they develop independent practices. The more the trainees and staff health professionals learn, the better they are in caring for the
patient. We really have a dynamic interaction here in which learning and caring centered around the patient is a continuous process in our hospitals and clinics.

Now that caring and learning micro environment, is embedded in the institutional framework our hospitals and clinics. If one starts to think about practice redesign that is redesigning the clinical care system that would impact the caring part of the model that I am describing. At the same time, if one was thinking primarily of dealing with the learning component of the system one would think about educational redesign. In reality, the two need to go on simultaneously and are related to one another so that for the most part, educational redesign will impact practice redesign, but more importantly practice redesign will impact the way in which we change the educational system.

Education and practice redesign are really two inseparable components of the delivery system.

Lastly the institutions are embedded in financing and structure of the US Healthcare system in our case, the VA Healthcare system.

The important point of what I have been trying to get across at this point is to realize that in changing education, one needs to take into account continuously the impact of the changes in practice and clinical practice redesign.

So as I have indicated, VA is the largest integrated health system in the U.S. It has and was the first owner of a comprehensive medical record which has allowed it to do a number of innovative things over the past 15 or 20 years. There are, as far as primary care is concerned over 1000 sites in the VA health care system. Some of those are associated with hospitals, but the majority are community based outpatient clinics. So the majority of primary care is delivered in 800 perhaps as many as 900 community outpatient clinics. There are four and one half million and close to five million now primary care patients. Each patient is assigned to an individual primary care provider.

This primary care system is huge, it delivers 12 million encounters per year throughout the entire system. So this is a very large integrated primary care system. It is within this framework that we have to think about educational change.

To talk for a few moments about the clinical care delivery system, the patient of course is at the center of this and drives his or her care, but surrounding that are PACT teamlets or Patient Aligned Care Teamlets that are interprofessional in nature. <Float: PACT Teamlets or Patient Aligned Care Teamlets>

There are primary care providers, in some cases primary care nurse practitioners, and in some cases physician assistants, but each patient is assigned to a defined primary care provider. Supporting that primary care provider are a number of nursing roles, RN care manager, who is the individual who actually runs the clinic, clinical associates, Licensed practical nurses, medical assistants and technicians, and clerical support, all part of this interprofessional team, making sure that this care is delivered in an integrated fashion. That teamlet in itself is embedded into a larger micro environment of other team members. Consultants such as mental health professionals, psychologists and social workers etc.
There actually is a large team that needs to interact continuously with its members, with the patient and the family of the patient, at times, to deliver kind of care that is patient centered and serves the patient.

There are a number of studies that have been done over the past few years since VA started this clinical transformation. One could spend a great deal of time talking about the results.

In summary, then VA has a large number of these new PACT primary care teams, whose function is really an integrated function, across the teams in all the health professions, delivering care in a patient centered way.

Within that Clinical Care system is our VA education system. The background today, is it is the largest clinical education system in the United States. It involves the clinical training of over 40 different health professions education; Every health profession in the United States is essentially included in our training programs. In the past year, nearly 120,000 trainees rotated and did clinical work in the VA.

Of those there are about 38,000 physician residents and about 20,000 medical students.

About 26,000 nursing students and 32,000 associated health professionals such as pharmacists, psychology, social workers, etc.

This is not a system that is simply isolated from care. We (VA) have affiliations with 80% of the US medical schools and overall individual affiliation agreements with over 1500 different health professions colleges and universities in the US. The annual education budget for VA both direct and indirect costs was 1.7 billion dollars last year. This is a large educational organization, embedded within a larger clinical delivery system. Moving either of these two components in either direction provides interesting opportunities to change the culture and traditions that have existed for a long time.

To move to the educational issues. If we knew how to change education to bring our trainees to the front and center of the PACT primary care model, we would simply go about doing it nationally, but we don’t know exactly the best way of moving from point a to point b.

So one of the approaches was to develop 5 new Centers of Excellence in Primary Care Education to use them as laboratories so that we can see how later on, we can change the educational model to adapt to the clinical microsystem we have created in VA.

To do that we have to bring together a number of core requirements and resources and we set certain requirements for example, Given that the fact that the future healthcare system is going to be interprofessional and team based, we require joint sponsorships from both medical professionals and nursing professionals as well as other schools. We require the establishment of these centers of excellence, integrated professional teams that contain at a minimum contain medical residents and nurse practitioner students or fellows. We require a 30% time commitment to this activity so the trainee aren’t coming and going and that the trainees spend significant amounts of time in a continuity based fashion.
To help establish the programs, VA has provided 1 million per year, per center for 5 years for operations, in addition additional trainee stipend support is provided as needed by the Office of Academic Affiliations.

We also established a national Coordination Center in Long Beach to oversee these activities.

There are five sites, all have a component a VA medical facility or hospital and a school of nursing and school of medicine.

Now the five sites where the Centers of Excellence are located, starting on the West Coast

We had to think about designing and evaluating a number of key elements. We thought about this in terms of learning domains. There are four important learning domains, the first and perhaps most important is shared decision making.

Now I don’t mean only between the patients and providers but equally important between the providers themselves, between the team members of these PACT teams. So shared decision making is perhaps the most important element, because remember, we are trying to do this in way that is driven by the patient and is also team based and if we don’t have a communication system and a process for continual interaction, there really is no way to get in thoughtful shared thoughtful decision making.

The second domain is sustained relationships. That is continuity or longitudinal based relationships between patients and providers on one hand and also between the trainees who are providing care and their supervisors, the mentors, their attending physicians, their attending nurse practitioner. Without that kind of sustained relationships over weeks and months and years ..it is difficult to see the expectations and kind of needs of Veterans.

The third domain in interprofessional collaboration and team based care....we have already alluded to the importance of teams in this process, but remember we have nurses, we have physician trainees, we have a whole mix of different kinds of professional trainees on these teams so this team based care that is inherently interprofessional in nature is critical.

Lastly we need to be measuring what we are doing, so continuous performance improvement, both at the level of the individuals and the level of the team, and at the level of the unit is also important. So improvement is also an important element of the learning domain to take into consideration.

The instructional design that is the models that are being delivered  ....are complex.

There are three separate learning domains to consider.

The first is the workplace itself. It is what is going on in the workplace, from minute to minute. How are the individuals interacting, how are they delivering care?
But at the same time to that workplace learning and care delivery, there is formal instruction. All the trainees have didactic curricular and small group learning session in which there is profession by profession, dictated formal instruction. The third component is reflective practice. You have to create the opportunities for trainees to reflect on what they are doing. Reflecting on their actions and reflecting on the actions of others. So workplace learning, formal instruction and reflective practice are the three components of the learning domain, that need to be taken into account and they all interact with one another continuously. The workplace learning itself is nested in the overall clinical PACT transformation. So as the learning transformation is occurring, that in itself is part of a larger transformation in the PACT clinical environment. The formal instruction is nested in each professions curricula and that needs to be taken into account and perhaps the most important concept of all, this concept of reflective practice within and between professions is really critical. One doesn’t exchange the existing clinical culture between health professions trainees, without reflecting, discussing and thinking about in a group fashion about what is being done. So the instructional design is really quite complex.

There is formal instructions, all the trainees....which there is ...profession by profession, and then the third component .... Create an opportunity to reflect on what they are doing, reflecting on their actions and

Having set this up, these five centers of excellence, in a complex clinical transformation, primary care PACT transformation, having done that, what have we learned in the first couple of years of this experiment?

First of all, let me deal with what we have learned about the faculty. We have learned that their interactions across different professions are critical to the success of the experiment. Language, personality and psychological safety are very important. Different professionals will not share information freely with one another and certainly will not share information that is difficult to verbalize without having an environment where they feel safe in saying what is on their mind...that is determined by the personality of the individual and the safety of the environment, so language, personality and psychological safety are perhaps the most important thing that we have learned. You have to make people comfortable dealing across professions with one another.

Secondly we have learned that interprofessional leadership and quality is critical but very hard to achieve. That is we have co directors of these operations. We have a physician co-director and we have a nurse practitioner co-director. Achieving the king of equality between them is not something that is simple. For most part physicians have dominated the clinical care system. Nurse Practitioners do not tend to be in a large number of leadership positions in these interprofessional environments. So we have had to work closely with both the physicians and the nurse practitioners to ensure that they have an equal input and equal opportunity to lead these teams.

The collaboration between the faculty, particularly across professions, in curriculum revision, that is in designing these experiences, is particularly important, without that it appears that one profession will end up dominating, and that is not what we want. The professions are equally important to the curricula as are all the professions involved.
I must say that this is very very hard work and burn out particularly of the leadership people has become a significant problem and so we need to develop better mechanisms of support for the leaders who are doing this very hard work. Overall the faculty have adapted very well they are enthusiastic and they believe this something that is quite unique in their experience as teachers within their own individual profession, so I believe we are moving in the right direction. They are beginning to bring faculty on board and beginning to join them on board in an integrative fashion, to achieve the goals of these important programs.

The lessons learned about the trainees are equally interesting. First of all trainees are responding enthusiastically to the opportunity. We had no problems at all with trainees having difficulty working across professional lines.

The trainees both the NPs and the physicians and medical residents quickly realized the importance of peer support and team identify. They are very happy working as teams because they have realized they can be more effective as far as patient care delivery and more efficient in getting the work done if the team is in control of a situation, rather than the single individual.

In addition it is interesting that the perception of this experiment this track this type of education as a prestigious opportunity and grounded in realism because the trainees realize that this is the kind of practice they are going to have to be involved in, in the future....team based, patient centered care....so they are our best advocates. They go out an recruit trainees to come into the program who are interested in this kind of experiment. So this has been the best selling point, the trainees themselves, so they have had a terrific experience, so they tell their colleagues about that so the word is getting around in the medical schools and the nursing schools of the importance of this experiment in VA.

Now it is also interesting, one needs to consider the level in which trainees are comfortable interacting with one another. Medical residents tend to have more knowledge about patho-physiology and clinical management then beginning nurse practitioners learners, and that is a reflection not of the individual, but of their prior curricular, their prior learning experience,

So it has been interesting to observe what happens when you put more advanced medical residents together with perhaps less advanced nurse practitioners students, in the beginning. On a knowledge base, there is quite a chasm between the two groups. But the nurse practitioner students dive in and catch up and become indistinguishable from their physician resident peers in six to twelve to nine months. They have a very steep learning curve, it is difficult for them to get into the system, but they catch up very quickly, and after about six or nine months, they are working together in almost an indistinguishable fashion. So if I sit in a small huddle where they are discussing patient care without knowing who the students are, and what profession they belong to, it is almost impossible to distinguish a nurse practitioner student, from a medical resident, from a social work student, from a psychology student, if you sit long enough, obviously, by virtue of what they say and how they behave, that becomes obvious, but they are all engaged so deeply, taking care of the patient, and they all have something to contribute that at the beginning of such an observation, you really can’t tell the difference, which I think is a terrific test of the ability and the utility of this thing.
Now the institutions in which these training programs are embedded, we have also learned some lessons. When we started out our VA hospital directors were somewhat suspicious about whether this would be a useful activity. They are now increasingly supportive and some have even become enthusiastic asking for more of these teams and more trainees and that is almost a universal experience as we travel around these five sites.

The affiliates, that is to say the medical schools and nursing schools are also cautious about this. Change is hard and traditional educational institutions don’t change easily, so they were pretty cautious. They have now moved from cautious approval to endorsing the programs, and perhaps most important, some of them have begun to adopt the elements of this educational experience in their own programs outside VA.

Interestingly although it was thought that accreditation requirements would be a major barrier to implementing this program, this has not been an issue and accrediting bodies are now working with VA to deal with the requirements that they have set for training.

From these lessons learned there are a few new rules, simplistically yet profoundly can summarize what are experiences have been after a couple of years. First of all, and that should be obvious, practice redesign is foundational. You can’t develop new modes of health professions education in a dysfunctional practice or in a healthcare delivery system that is dysfunctional.

The fact that VA is moving forward with its clinical systems redesign is really providing us the opportunity to do these education redesign efforts in an environment that delivers safe, efficient and effective care.

Secondly learning by doing in the workplace is essential. Workplace learning trumps formal instruction every day of the week and reflection on in action are critical elements, so the workplace learning environment is critical, you can’t teach this kind of thing in a classroom by itself, though classroom activities provide useful activities. This has to happen with the patient in the clinical environment, so learning by doing is essential.

An understanding what works is critical. Learning what works, when and why is as important as demonstrating enhanced education and clinical outcomes. While we certainly want to look at enhanced learning and clinical and system outcomes,

We have also more importantly need to understand what we are doing, whether it works, over what time frame it works and the reason why it works. The reason that is so important is because ultimately we want to disseminate throughout the VA and hopefully nationally.

Just knowing that educational systems and clinical outcomes have improved, is important, but not sufficient, we need to know why it is working, so we can duplicate these experiences.

WE have also learned the context matters and that you can set blueprints on how to do this, but local modifications are essential for maximum effectiveness and sustainability. Every place is different and
while there need to be guidelines, we have to let each place design in a fashion that makes sense to their local environment.

Lastly of course, culture matters most of all... Changing culture is difficult, but even traditional healthcare systems are beginning to see and will yield to passionate ideas and ultimately evidence.

So what are we going to do in the future?

There are two pathways to take in the lessons learned and move them forward, disseminating them, generalizing them,

One would be to expand to expand the center concept, not having 5 centers but 10 or 15 new laboratories, to continue to learn how best to do this. This is a focused discovery approach that would add to the centers, there would be rolling implementation, by that I mean resources that have gone into the centers so far, would be rolled up and used for the next group, and so on. This of course takes a long time to execute.

The alternative pathway would take a conversion of existing teaching practices in VA to the Center of Excellence model, this would require a manual of enterprise wide guidance, this is being developed. The Academic PACT model is in the final stages of concurrence that would provide guidance to all primary care practices in VA that are teaching practices. This allows for a broader implementation and a shorter execution and timeline for getting to the endpoint and having these ideas adopted.

In reality these two pathways or concepts for dissemination are not mutually exclusive and I believe that as we need elements of both as we move from the Centers of Excellence to a broader educational terrain throughout VA and hopefully throughout the nation. Thank you.

For more information see:  www.va.gov/oaa/coepce/