James L. Holly, M.D.

PC-MH: SETMA's First Nine Years – Continuity, Creativity, Consistency

By James L. Holly, MD

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Introduction

This ten-part series is the fourth in SETMA's PC-MH pilgrimage. The first was written in 2009, the second in 2010 and the third in 2011. Each have chronicled SETMA's expanding understanding and implementation of the medical home model of care. However, the real beginning of this journey was in May, 1999. The four seminal events which SETMA experienced in that month are described at the following link: May, 1999 -- Four Seminal Events in SETMA's History. The formalization of our PC-MH began ten years later in February, 2009 (see Medical Home Part I: Is it the future of healthcare?).

In February, 2009, I wrote, "Recently, I saw the last few minutes of *Goodbye Mr. Chips*. based on a novel by James Hilton; originally published in 1934, Hilton was also the author of *Lost Horizon* which was about the mythical Shangri-La (the movie was released in 1939). Another movie version of *Goodbye Mr. Chips* was released in 1969 starring Peter O'Toole. The novel, *Goodbye Mr. Chips*, is very similar to my favorite British novel entitled, *To Serve Them All of My Days*, by R. F. Delderfield, published in 1972.

"I never see this movie without being deeply moved by the value of a life given to the service of others. The story is about Mr. Charles Chipping played by Robert Donat. Chipping comes to be called 'Chips' by the boys in the boarding school where he teaches and where, during WWI, he becomes the headmaster. As he dies, Mr. Chips is dreaming of all his past students. He over hears two colleagues lament that he is dying alone and that he lived a lonely life without his own children. He awakens and says that he has not lived alone. He has had thousands of children, 'All boys, he declares.' In the last scene, young Peter Colley III, the youngest of a family of boys whom Chips had taught through the years, waves to him and says 'Goodbye, Mr. Chips, goodbye.'"

PC-MH is like a life lived in service to others. The principles and tools of PC-MH can be described in detail. Many of the details are technological and many have an electronic foundation, but it must never be forgotten that ultimately PC-MH is about persons, individuals. This is why "stories" end up being the most critical aspect of medical home, personal, individual, unique stories.

Our goal in this most recent series on PC-MH is to review the core values and functions which have enabled SETMA to:

- connect the past with the present and to prepare for the future (**Continuity**);
- illustrate the ingenuity and healthcare transformation which have been central to SETMA's progress (**Creativity**),
- allow SETMA to sustain the progress of the past, tying it to the needs of the future, enabling SETMA to relentlessly pursue excellence in patient care quality and safety (**Consistency**).

As the 44th year of my medical career draws to a close, I must be coming to the end of a wonderful career; yet, I think and hope there will be future series of articles until finally there is

a valedictory capstone to this magnificent opportunity to have lived the life of a physician and to have participated in an organization like Southeast Texas Medical Associates, LLP.

It can certainly be said that this ten-part summary of our journey is incomplete and the reality is that it always will be because just as we think we have learned something, just as we think we are closer to the end, our horizon expands and our vision enlarges and we see with delight and excitement that there is more to do, more to learn and we step off into the uncertainty and wonderment of the future.

In February, 2009, I was asked by a healthcare executive, if medical home were just a passing fad or were we really serious about it? I think now the answer is obvious, as it had already become obvious when the last installment of the first series of articles about medical home was published in June 2009 (see: Medical Home Part X: A Summation of the Beginning of a Journey).

The journey continues. This series is only the latest installment.

Continuity, Creativity, Consistency: *The Less Initiative*
By James L. Holly, MD
Your Life Your Health
The Examiner
December 8, 2016

Eighteen years ago, SETMA realized that electronic patient records (EMR) in and of themselves would not provide the transformative power required to radically change health care delivery, but that the analytical power of electronic data analysis could. Therefore, in May, 1999, SETMA determined to change from pursuing EMR to pursuing electronic patient management (EPM). In that month, SETMA began designing clinical decision support (CDS) tools and disease management tools (DMT) which would facilitate individual patient care and also would allow the improving of care for populations and panels of patients. (see SETMA: May, 1999 - Four Seminal Events)

One of the measures of the value of innovation is "how long does it last," and "how long is it effective in promoting and measuring quality of care?" January 2017, SETMA enters our 23rd year of existence – personally, I enter my 44th year of medicine – as SETMA looks back on those early days, and as we see what has lasted, we are encouraged that the vision and aspirations we had in the beginning are still with us today.

As we developed CDS and DMT in 1999, we realized that some things were common to all of these tools. Among those commonalities was the desire to address three things with EVERY patient we see, i.e. weight management, exercise and smoking cessation. From this came the LESS Initiative.

What is the LESS Initiative?

LESS stands for:

L -- Lose weight
E -- Exercise
S -- Stop
S -- Smoking

No one would argue that each of these is not valuable in anyone's life or health. But the complexity is to confront an entire patient group with all three elements consistently, every time

they seek healthcare. To address these in a single patient is simple, but how do you consistently address these issues in over 500-1,000 patient visits a day and in over thirty different clinical settings?

Here's how the Initiative works. Every time a patient is seen in the clinic, no matter what the occasion for the visit is, they will be alerted to the health risk of:

- **Their current weight**, as measured by their body mass index (BMI) and their body fat content as measured by electrical impedance. Each patient will be given a Weight Management Assessment document which tells them their disease risk associated with their current BMI and their waist measurement. They are given their percent body fat and an explanation as to how a 5% to 10% change in their weight will impact their health and future. Their basal metabolic rate (BMR) is also calculated and the number of calories required to maintain their current weight is given to the patient.
- **Their current level of activity**. Each patient is given information concerning the benefit which the heart, lungs and health receive from participation in exercise as indicated by "aerobic points." The patient is given the level of aerobic fitness which that exercise achieves for them, i.e., fair, good, excellent, etc., and the patient is given a recommend minimum exercise level which they need in order to achieve a "good" aerobic status for their age and sex. This exercise prescription will include information on how to increase the number of steps they take each day in order to have an "active" lifestyle which is defined by taking 10,000 or more steps a day.
- **The imperative for stopping smoking**. Even the tobacco companies' websites now state, "The only way to avoid the health hazards of tobacco smoke is to stop smoking completely." This is clever because with this warning, the tobacco companies, while continuing to encourage tobacco smoking, have immunized themselves from future litigation because they now warn you that their product is harmful. Now, legally, the only one to blame for the harmful effects of smoking is the smoker, even though nicotine is addictive. Also, the initiative includes the questioning of patients about exposure to "environmental tobacco smoke" or "second hand smoke," either at home or at work and now “tertiary smoke” risk which is experienced by being around people who smell of tobacco smoke.

The following documents are given to each patient, each time they come to the clinic:

- Weight Management Assessment - one page
- Exercise Prescription - 7 pages
- Smoking Cessation - 7 pages -- Smokers will be given the full smoking cessation document. Non-smokers who are at work or at home with a smoker will be given a document on the hazards of what has been variously called "environmental", "second-hand" or "passive" tobacco smoke and now “tertiary smoking.”

While this initiative may seem to be simple, it is a complex undertaking. To do this occasionally is simple, but to consistently do it every time a patient is seen is not. At the end of each day, a report will be run which will determine if the above three documents were generated in the electronic medical record and if they were actually printed. A random sampling of patients

leaving the clinic during the day will be used to develop confidence that the documents have actually been given to patients.

The value of the elements of the **LESS Initiative** is obvious, but now, sixteen years later, its value is not only seen by the fact that we continue to do it, but also by the public health initiatives which now require elements of the **LESS Initiative** to be performed by all healthcare providers. In 2006, as previously reviewed here (SETMA's Innovations Over the Past Twenty Years Have Prepared Us for MACRA & MIPS), the Physician Quality Reporting Initiative (PQRI) was started as a voluntary program which rewarded practices which measured and reported quality metrics. In 2011, that program was changed to the Physician Quality Reporting System (PQRS) which was no longer voluntary and for which a bonus was not paid but a penalty would be assessed if practices did not report quality metrics. One of the changes in PQRS was that the body mass index (BMI) had to be reported.

When the Meaningful Use Program was established by the Health and Human Services (HHS), calculating the BMI was no longer enough. Each healthcare provider had to explain the BMI to the patient and had to explain the health implications of an excessive BMI. Meeting Meaningful Use standards also required providers to address whether or not the patient smoked and also required that smoking cessation strategies be discussed with the patient. SETMA's **LESS Initiative**, active since 2000, more than fulfilled all of these PQRS and Meaningful Use Standards.

In 2004, The Agency for Healthcare Research and Quality (AHRQ) created the AHRQ Health Care Innovations Exchange. This is the link to the exchange: http://www.innovations.ahrq.gov/. AHRQ explains the goal of the exchange: The Innovations Exchange helps you solve problems, improve health care quality, and reduce disparities.

- Find evidence-based innovations and Quality Tools.
- View new innovations and tools published biweekly.
- Learn from experts through events and articles.

There are presently over 500 innovations and quality tools published by AHRQ. There is a rigorous application process to have an innovation accepted and then professional writers prepare the description of the innovation for publication on the Exchange.

In May, 2011, AHRQ accepted SETMA's **LESS Initiative** for publication on their Innovation Exchange. The affirmation of SETMA's initiative by PQRS, Meaningful Use and AHRQ encourages SETMA to continue our innovation as we did by publishing on December 5, 2016 another tool which encourages SETMA providers to practice excellence medicine and which makes that practice easier and measurable.

Shared Responsibilities

Consistent with the "team approach" to health care delivery, the **LESS Initiative** is dependent upon the sharing of responsibility by the various members of SETMA's healthcare team:

- The IT team (Information technology) has to make it possible to easily and conveniently produce the documents and to audit the performance.
- The Nursing and support staff have to collect the data - weight, height, waist size, abdominal girth, hip measurements, neck size, chest size, body fat, etc. - which allows the computation of the information used in determining the patient's health risk.
- The Nursing Staff have to create, print and distribute the documents, as well as initiate the discussion with the patient of the information in each.
- The Healthcare Providers - physicians and nurse practitioners - have to interact with the patient about the imperatives for change which are indicated by the information in the document, discussing with the health risks of doing nothing and the health benefits of changing the lifestyles...
- The Nurse Management Staff must audit the charts at the end of the day to make certain that this has been done. It has been established that 95% effectiveness is the standard for determining success.

Since the development of this tool, SETMA has deployed dozens of other tools which have facilitated the consistent performing of important tasks and functions. All of these have contributed to the building of SETMA's PC-MH.

Continuity, Creativity, Consistency
Part II Patient-Centered Medical Home
By James L. Holly, MD
Your Life Your Health
The Examiner
December 15, 2016

On December 8th, the first of a series of articles entitled "**Continuity, Creativity, Consistency**" was published in which we examined the role of **The Less Initiative** in SETMA's past and its relevance to new requirements in healthcare delivery. A more recent SETMA project is the Patient-Centered Medical Home (PC-MH) which further demonstrates the connection between SETMA's past and present, and which fulfills the future demands the healthcare system is making upon healthcare providers.

In 2017 SETMA begins our ninth year of medical home learning and practicing. Our pilgrimage toward PC-MH began in 1999 as a result of our study of Peter Senge's *The Fifth Discipline*. In that study, SETMA identified ten principles which would guide our development in both our practice and in the electronic medical record (EMR) tool which we would design. (see SETMA: May, 1999 - Four Seminal Events) Ten years into our development, we realized that those ten principles were also the principles of PC-MH.

The Patient-Centered Medical Home Poster Child

In my morning clinic on February 17, 2009, I saw a patient whom I had seen in the hospital the previous Saturday and Sunday, He would soon earn the title of "SETMA's Medical Home 'Poster Child'". In the hospital, he was angry, hostile, bitter and depressed. When he was ready to leave the hospital, I gave him an appointment to see me, even though he was not my patient. In his follow-up visit, his affect had not changed. In that visit, I discovered that he was only taking four of nine medications because of expense. He could not afford gas to get the education he needed about his condition. He was genuinely disabled and could not work. He was losing his eyesight and could not afford to see an ophthalmologist. He did not know how to apply for disability. His diabetes had never been treated to goal.

When he left that visit on the 17th, he had an appointment to SETMA's American Diabetes Association-approved diabetes self management education program. The fees for the education program were waived. He also left with a gas card with which to pay for the fuel to get the education which was critical to his care. SETMA's staff negotiated a reduced cost with the

patient's pharmacy and made it possible for the pharmacy to bill The SETMA Foundation. The patient's care included our assisting him in his application for Social Security disability. He had a visit that day with SETMA's ophthalmologist who arranged a referral to an experimental eye-preservation program in Houston, which was free.

Six weeks later, he returned for a follow-up visit. He had something which I could not prescribe for him; he had hope. He was smiling and happy. Without anti-depressants, or sedatives, he was no longer depressed as he now believed there was life after being diagnosed with diabetes for ten years. And, for the first time, his diabetes was treated to goal.

In 2014, a summary of the first five years of his care in a medical home was summarized at Patient Centered Medical Home Poster Child: An Update after Five Years of Treatment in a Medical Home. March 23-25, 2015, this couple was a part of an eleven-member team from SETMA which attended the Seventh Annual Medical Home Summit in Philadelphia, and which conducted a pre-conference seminar on Medical home and then made presentations during the conference. (see Medical Home Summit THE SEVENTH NATIONAL - THE CONTINUING PURSUIT OF EXCELLENCE). This month, December, 2016, I saw this couple in a routine follow-up clinic visit. We reminisced about the soon to be eight years of our relationship and how well he is doing even with significant health issues. There were smiles and laughter and hugs all around.

Back to the Beginning

The night of the above mentioned visit to SETMA's clinic by "the Patient-Centered Medical Home Poster child," February 17, 2009, a group of SETMA leaders attended a meeting in Houston, where the concept of PC-MH was discussed. The organization which presented that lecture no longer exists. At the end of the lecture, I asked, "If we are doing everything you say we must do in order to be a medical home, and we are, yet we know that we are not a medical home, and we aren't, what must we do in order to become a medical home?" They did not have an answer.

On Wednesday morning, February 18, 2009, I sent the following note to SETMA's leadership; it stated: "Needless to say, I was 'under whelmed' by the presentation which we heard last night. As I lay in bed last night thinking about the Medical Home, I got up and recorded a few thoughts some of which are below. This begins to answer for me the issue which I raised last night. If we accomplish what I have briefly outlined below and if we implement its use after fleshing it out so that it is comprehensive, I think we will take all of the elements of Medical Home, all of which we already do and we will create the synergy which Medical Home promises. We are a very long way away, but this is a first step."

Beginning February 19, 2009 and for the next ten weeks, SETMA prepared a weekly article on the concept of medical home. For the next ten weeks, SETMA's understanding of medical home grew. A review of those articles reveals that at first we simply commented on what others had said, but gradually, we began to create our own concept of PC-MH. In this process, a healthcare executive with whom SETMA still works asked, "Is your medical home project just a passing

thought, or are you committed to this method of healthcare delivery?" My response was, "Time will tell."

In 2009, 2010 and 2011, series of articles were published by SETMA on Medical Home: see Medical Home Series Two: Part XVIII - Introduction to SETMA's 2009, 2010 and 2011 Series of Articles on Medical Home. Over the next eight years SETMA would publish over 140 articles on PC-MH, all of which can be seen at Your Life Your Health - Medical-Home.

Ultimately, SETMA would seek and receive recognition and/or accreditation from four medical-home accrediting agencies, but at this time, we only knew of one which was the National Committee on Quality Assurance (NCQA).

Continuity, Creativity and Consistency

In the context of "continuity, creativity and consistency," 2017 will be the ninth year of our medical home pilgrimage. As we begin that year, we hold recognition and/or accreditation by all four of the national agencies which offer medical home evaluation to medical practices. And our accreditation extends from 2010 through 2019.

The centrality of PC-MH to the future of healthcare is seen by the fact that in the Merit-Based Incentive Payment System (MIPS) created by Medicare Access and Chips Reauthorization Act of 2015 (MACRA) one of the four categories by which practices will be measured is "Clinical Practice Improvement Activity," which is one-hundred percent fulfilled by NCQA Tier 3 Recognition, which SETMA has possessed from 2010 through 2019.

The role of PC-MH is also seen in my answers to questions posed by one of the PC-MH accreditation agencies for an upcoming publication. The questions and my answers are as follows:

"What are the one or two trends and/or market forces for healthcare/physician networks for 2017, and what impact do you anticipate those trends and/or market forces to have?"

One trend is that in the face of geometric technological advances in healthcare techniques, increased emphasis must focus on rediscovering human values and human relationships as manifested in trust and dialogue between all participants in the healthcare dynamic

The second trend is that as an extension of refocusing healthcare expenditures on quality, safety and outcomes, the market will demand the adoption of the elements and principles of PC-MH. But that focus must not be in checking boxes but in dynamic collaboration. Unfortunately, MACRA and MIPS have systematized the deficiencies of the old system which will prevent true transformation.

"What will be the biggest challenge and the biggest opportunity for healthcare/physician networks in 2017?" The biggest challenge is to understand that healthcare transformation is an organic outcome, resulting from the blossoming of the nurtured plant -- the organizational

organism -- which springs from the nature of the patient-centered dynamic collaboration between healthcare professionals and healthcare participants.

How Long Does it Last?

One of the measures of the value of innovation is “how long does it last,” and “how long is it effective in promoting and measuring quality of care?” January 2017, SETMA enters our 23rd year of existence – personally, I enter my 44th year of medicine – as SETMA looks back on those early days, and as we see what has lasted, we are encouraged that the vision and aspirations we had in the beginning are still with us today.

Continuity, Creativity, Consistency
Part III – Auditing for Quality and Safety
By James L. Holly, MD
Your Life Your Health
The Examiner
January 5, 2017

In December, 2016, we began this series. The first two installments were on the **LESS Initiative** (December 8th) and **Patient-Centered Medical Home** (December 15th). Our goal is to review the core values and functions which have enabled SETMA to connect the past with the present and to prepare for the future (**Continuity**); to illustrate the ingenuity and healthcare transformation which have been central to SETMA's progress (**Creativity**), and to allow SETMA to sustain the progress of the past, tying it to the needs of the future, enabling SETMA to relentless pursue excellence in patient care quality and safety (**Consistency**).

When SETMA was formed between May and August, 1995, I had been in solo practice for twenty years. While I had used dictation and transcription for medical record keeping, which was a step above hand-written notes, the records still did not allow for measuring performance. In August and September, 1995, it became apparent that to succeed in a multi-provider setting, we would have to measure performance and compare performance among providers.

Early on, this measurement focused on productivity rather than quality and safety. As we realized that it was almost impossible to measure quality with paper records, we began to talk about a relative new idea: electronic records. In 1997, the complexities of medical record keeping in a growing multi-specialty practice pressed SETMA toward a different medical-record keeping methodology, i.e., electronic medical records (EMR). In March, 1998, SETMA purchased an EMR and began the transition from Dictaphones and transcription to computers.

Even though the system we purchased was among the best and has remained so over the past twenty years, it did not provide the ability to create a record but only the ability to create the capability of electronically creating medical records. It took us from March, 1998 to January 26, 1999, to create the capability to use the computer to create a record of a patient encounter at the point of care.

By May, 1999, it became apparent to SETMA that this tool was very hard and very expensive and if all it provided was the ability to create a record of a patient encounter electronically, it was not worth the effort. In that month, we changed our goal from electronic medical records to

electronic patient management. In that month, we determined that our goal was to use electronics to improve the quality and safety of the care we provide to patients and not just to document patient encounters. This meant that our focus had to change from productivity to quality and safety. It meant a radical change to focusing on improving the care our patients received and to focusing on the ability to measure quality and to prove that the quality of care for individuals and for groups of patients was actually improving through auditing our performance.

In May, 1999, we defined ten principles of how to develop an EMR and a transformative medical practice. The principles were:

1. Pursue Electronic Patient Management rather than Electronic Patient Records
2. Bring to every patient encounter what is known, not what a particular provider knows
3. Make it easier to do "it" right than not to do it at all
4. Continually challenge providers to improve their performance
5. Infuse new knowledge and decision-making tools throughout an organization instantly
6. Promote continuity of care with patient education, information and plans of care
7. Enlist patients as partners and collaborators in their own health improvement
8. Evaluate the care of patients and populations of patients longitudinally
9. Audit provider performance based on endorsed quality measurement sets
10. Integrate electronic tools in an intuitive fashion giving patients the benefit of expert knowledge about specific conditions

Also in May, 1999, we published a booklet entitled: *More Than a Transcription Service: Revolutionizing the Practice of Medicine: And Meeting the Challenge of Managed Care With Electronic Medical Records (EMR) which Evolves into Electronic Patient Management*

The tools needed for that purpose did not exist, so we began developing disease management tools and clinical decision support tools. We began to measure preventive and screening care and we began to employ "quality metric sets" developed by groups like the Physician Consortium for Performance Improvement (PCPI). In 1999 and 2000, we realized that the future of healthcare was going to require us to know whether all of our patients were receiving excellent care individually but also whether or not certain groups were also receiving equal care.

In 2000, we began using statistical analysis to see if our care was improving over time and whether subgroups were receiving comparable care. This meant that we wanted to know if African Americans were receiving the same caliber and standard of care that Caucasians were receiving. To do that we began measuring the care of both groups and of others groups.

By 2008, SETMA's auditing functions had grown and were requiring more and more time and energy to produce the reports which allowed us to measure and to improve our performance. At that time, EMRs did not provide the significant auditing tools which they do now so SETMA adapt a "business intelligence" software package to medicine. Once developed, it allowed us to complete audits in less than 60 seconds and eventually in less than 30 seconds which had previously taken hours and days to complete.

In 2009, we deployed this new auditing capability and in July, 2009, announced to ourselves that we were going to begin the "pubic reporting by provider name" on multiple quality metric sets. This had never been done before and it was a little daunting. Today, January 3, 2017, we begin our 9th year of public reporting of provider performance at www.setma.com on over 200 quality metrics. (see: Public Reporting - Reporting by Type).

In 2013, while reading a new book about Winston Churchill, I read the following from the foreword: "Lincoln said, 'If we could first know where we are, and whither we are tending, we could better judge what to do, and how to do it,'". (Quoted by David Eisenhower in the *Foreword to Churchill: The Prophetic Statesman*, by James C. Humes, Regnery, New York, 2012)

In any human enterprise, if the participants are unwilling to objectively and honestly face where they are, it is improbable that they will ever get to where they want to be, let alone to where they should be. This concept is discussed in more detail at;
Abraham Lincoln and Modern Healthcare,

Auditing quality, safety and performance is only a tool, but it is an imperative tool to consistently maintain the excellence to which all healthcare providers aspire. It has become an essential part of SETMA's growth and development.

Continuity, Creativity, Consistency
Part IV: Team Work – the Key to Excellence in Healthcare
By James L. Holly, MD
Your Life Your Health
The Examiner
January 12, 2017

Where do you get your healthcare? "I go to the doctor." How do you get your healthcare? "I go to the doctor." When do you get healthcare? "I go to the doctor." There was a time when these questions and answers were valid; at least they reflected the reality of healthcare. While there are elements, or perhaps we should say, vestiges of healthcare which are still described by this dialogue, it is not the ideal.

Today, excellent healthcare is delivered by and received from a team, of which team both the deliverer and recipient of care are members. Why is the team the appropriate focus of healthcare today, rather than the old image of "going to the doctor?" Perhaps we must narrow our discussion to primary healthcare because the questions being asked or the services being sought in specialty care are very narrow and specific. In reality, specialty care often still looks a great deal like healthcare of fifty years ago. Primary care is much different. The question is, "Why?"

Part of SETMA's transformation over the past twenty-two years has been for the practice to embrace and invest in team work. Before SETMA understood that Twenty-First Century medicine could not be practiced with "pencil and paper" (19th Century Medical Record Methodology), or even with "dictation and transcription" (20th Century Medical Record Methodology), both of which drove SETMA to Electronic Medical Records in 1998, SETMA understood that the demands of 21st Century medicine would require a team approach to its delivery. Eventually, we recognized that team work is not just an ideal of healthcare transformation; it is an imperative. We came to understand that that imperative grows out of the necessity of multiple people working in collaboration with patients and families in order to provide the quality and safety of care which 21st Century medicine demands.

Team work did not just mean working on the same projects or having the same goals or even having the same objectives of care. The principles of "real" "team care" have been repeated and refined but they have been part of the organizational spirit of SETMA from the beginning. That team led us to a significant examination of the value of each member of the team and to their contribution to SETMA's model of care. Without this team concept and without the team reality, SETMA would not be where it is today. It also became apparent that a team approach to

healthcare delivery, once embraced and executed, would inextricably require and lead to a Medical-Home dynamic and structure of healthcare delivery. That a team approach would require all participants in a patient's care utilizing the same data base and that they shared common goals, commitments and principles.

Healthcare Education - Educating a Team - Physician and Nurse Collaboration

In order to create great teams, the healthcare provider educational process has to change: see Medical Home Part V: Healthcare Education and Delivery: Essential Changes Needed in Both. The ideal setting in which to deliver and to receive healthcare is one in which all healthcare providers value the participation by all other members of the healthcare-delivery team. In fact, that is the imperative of PC-MH. Without an active team, which possesses "team consciousness" and "team collegiality", PC-MH is just a name which is imposed upon the current means of caring for the needs of others. And, as we have seen in the past, the lack of a team approach at every level and in across every department of medicine creates inefficiency, increased cost, potential for errors and that it actually eviscerates the potential strength of the healthcare system.

Collaboration-ist and Collateral-ist

It is possible for people to be working on the same project, to have the same goal and to work in the same place only to discover they are simply working "side by side; parallel" to one another. They are only "collateral-ist" going in the same direction and maybe even pursuing the same goal, but going there independently and without communication and/or true collaboration.

Why is this? Typically, it is because healthcare providers in one discipline are trained in isolation from healthcare providers of a different discipline. Oh, they are in the same buildings and often are seeing the same patients, but they rarely interact. And, often they have little respect for one another and do not see themselves as collaborators but as isolated "collateral-ists," often working side-by-side but not interactively. Often, even their documentation is done in compartmentalized paper records, which are rarely reviewed by anyone but members of their own discipline.

This is where the first benefit of technology can help resolve some of this dysfunction. Electronic health records (EHR), or electronic medical records (EMR) help because everyone uses a common data base which is being built by every other member of the team regardless of discipline. While the use of EMR is not universal in academic medical centers, the growth of its use will enable the design and function of records to be more interactive between the various healthcare schools of the academic center.

And, why is that important? Principally, because more and more healthcare professionals are discovering that while their training often isolates them from other healthcare professionals, the science of their disciplines is crying for integration and communication. For instance, there was a time when physicians rarely gave much attention to the dental care of their patients, unless they have the most egregious deterioration of teeth. Today, however, in a growing number of clinical situations, such as the care of diabetes, physicians are inquiring as to whether the patient is

receiving routine dental care as evidence-based medicine is indicating that the control of disease and the well-being of patients with diabetes are improved by routine dental care. Also, as the science of medicine is proving that more and more heart disease may have an infectious component, or even causation, the avoidance of gingivitis and periodontal disease have become of concern to physicians as well as dentist.

Disruptive Innovation

In addition, Medical Home places major emphasis upon issues which historically have been the concern of nurses. Physicians who use EMRs are discovering that the contribution of nursing staff can make the difference in the excellent and efficient use of this documentation and healthcare-delivery method. No longer is the nurse a "medical-office assistant" ancillary to the care of patients; the nurse is a healthcare colleague central and essential to the patient's healthcare experience. As evidence-based medicine expands the scope of what *The Innovator's Prescription: A Disruptive Solution for Health Care* By Clayton M. Christensen labels as "empirical medicine," which ultimately leads to "precise medicine," it is possible for physicians and nurses to be a true-healthcare delivery team, as opposed to the nurses only being an aide to the physician.

Christensen identifies the following "Levels of medicine" and makes the following judgments about the future of healthcare delivery:

- Intuitive Medicine -- "When precise diagnoses isn't possible...where highly trained and expensive professionals solve medical problems through intuitive experimentation and pattern recognition."
- Empirical Medicine -- "As patterns become clearer, care evolves into the realm of evidence-based medicine...where data are amassed to show that certain ways of treating patients are, on average, better than others."
- Precise medicine -- "When diseases are diagnosed precisely...therapy that is predictably effective ... (can) be developed and standardized."

In this process, the value and function of the team becomes imperative. So it is that SETMA has worked toward a team approach to healthcare. As alien as these concepts are historically to the teaching and practice of medicine, they are becoming and have become critical to our development.

Continuity, Creativity, Consistency Part V
Organizational Philosophical Foundation
By James L. Holly, MD
Your Life Your Health
The Examiner
January 19, 2017

Sometimes the elements of organizational development are only discovered in retrospect, which means that the development happens and then the principles of that development are seen and understood. In 2014, when SETMA sought and achieved Joint Commission (formerly known as Joint Commission on the Accreditation of Healthcare Organizations, JACHO) accreditation for ambulatory care and for Patient-Centered Medical Home, they recognized the philosophical foundation to SEMTA.

Both the surveyors and one of the executives at The Joint Commission commented about the philosophical foundation of SETMA's work. Wednesday March 5, 2014, the executive said: "I was just talking to one of my colleagues and showing him SETMA's notebook which was prepared in response to The Joint Commission's 'Standards and Requirements Chapter Seven of leadership.'" The executive said, "Look at this; everything they do is founded upon a philosophical foundation. They know 'what they are doing,' but more importantly, they know why they are doing it.'"

SETMA is not the result of random efforts but of innovations and advances which are consistent with a structured set of ideals, principles and goals. This foundation is the puzzle into which the pieces of transformation fit, contributing to the healthcare portrait which is SETMA. It is helpful that The Joint Commission recognized this and commented upon it. It is one of the strengths of SETMA and it is one of the principle guides to SETMA's development history, i.e., what caused SETMA to become what it is.

Similarly, the Robert Wood Johnson Foundation (RWJF) in conjunction with their Learning Through the Learning from Exemplar Practices (LEAP) Study, conducted by the MacColl Institute addressed their perception of SETMA's uniqueness which addresses a foundational principle of SETMA's growth and development. In their report, the fifth area of uniqueness of SETMA identified by the RWJF team was a surprise to them; it was SETMA's IT Department. The RWJF team felt that SETMA approached healthcare transformation differently than anyone they have seen. They related that uniqueness to the decision SETMA made in 1999 to morph

from the pursuit of "electronic patient records" to the pursuit of "electronic patient management."

They were surprised to see how centrally and essentially electronics are positioned into SETMA and how all other things are driven by the power of electronics. They marveled at the wedding of the technology of IT with clinical excellence and knowledge. The communication and integration of the healthcare team through the power of IT is novel, they concluded.

Innovation, Diffusion of Ideas and the Medical Home

Another observer made the following comments about SETMA's growth and development. The original observation can be reviewed at Innovation, Diffusion of ideas and the Medical home: http://healthinnovators.blogspot.com/2014/01/innovation-diffusion-of-ideas-and.html.

"Early in my medical school education, I heard about the "science to service gap", i.e. " it takes 13 years for proven medical improvements to become mainstream." But after 20 years of clinical practice and 17 years of work with informatics, I consider it a truism.

"During my medical informatics work, it has become more than a curiosity as to why the 'science to service gap' exists. About 5 years ago, I discovered a series of books that explain the Diffusion of Innovations by Everett Rogers who was a professor of communications. It helped me to understand that there is a natural variation, a bell curve of sorts, for how any group adopts innovation. Since negative news travels fastest, physicians often get a bad rap when it comes to adopting health information technology (HIT) due to the vocal nature of what Rogers called 'laggards.' That is a complex topic for posts in the future. I would encourage anyone interested in innovation to read Rogers 2003 5th edition of Diffusion of Innovations as it includes many lessons learned during the 40 year period following his 1st edition in 1962.

"I recently re-visited a web site which comprehensively documents the 19-year journey of a medical home practice that was formed in 1995, called SETMA. The link to the SETMA site is a great example of how diffusion of innovation can happen within an organization with visionary leadership. I had the pleasure of meeting Larry Holly, MD, the founder of SETMA and I would encourage anyone interested in how to create a cultural framework for innovation to read his web site, which is beyond comprehensive in its depth and breadth of information shared. (emphasis added)"

Transformation

SETMA believes that the key to the future of healthcare is an internalized ideal and a personal passion for excellence rather than reform which comes from external pressure. Transformation is self-sustaining, generative and creative. In this context, SETMA believes that efforts to transform healthcare may fail unless four strategies are employed, upon which SETMA depends in its transformative efforts:

1. The methodology of healthcare must be electronic patient management.
2. The content and standards of healthcare delivery must be evidenced-based medicine.

3. The structure and organization of healthcare delivery must be patient-centered medical home.
4. The payment methodology of healthcare delivery must be that of capitation with additional reimbursement for proved quality performance and cost savings.

At the core of these four principles is SETMA"s belief and practice that one or two quality metrics will have little impact upon the processes and outcomes of healthcare delivery and, they do little to reflect quality outcomes in healthcare delivery. In the Centers for Medicare and Medicaid Services (CMS) 2006 Physician Quality Reporting Initiative (PQRI), followed by the 2011 Physician Quality Reporting System (PQRS), and in 2017 replaced by the Merit-Based Incentive Payment System (MIPS), healthcare providers are required to report on at least three quality metrics and for MIPS twelve to be reduced to eight. SETMA's believes this is a minimalist approach to providers' quality reporting and is unlikely to change healthcare outcomes or quality. PQRI, PQRS and MIPS allows for the reporting of additional metrics and SETMA reports on 28 PQRS measures and reports on over 200 to our website by provider name. This has been done from 2009 through 2016 and continuing.

SETMA employs two definitions in our transformative approach to healthcare via quality metrics:

- A "cluster" is seven or more quality metrics for a single condition, i.e., diabetes, hypertension, etc.
- A "galaxy" is multiple clusters for the same patient, i.e., diabetes, hypertension, CHF, etc.

SETMA believes that fulfilling a single or a few quality metrics does not change outcomes, but fulfilling "clusters" and "galaxies" of metrics, which are measurable at the point-of-care, can and will change outcomes.

The SETMA Model of Care

1. The tracking by each provider on each patient of the provider's performance on preventive care, screening care and quality standards for acute and chronic care. SETMA"s design is such that tracking occurs simultaneously with the performing of these services by the entire healthcare team, including the personal provider, nurse, clerk, management, etc.
2. The auditing of performance on the same standards either of the entire practice, of each individual clinic, and of each provider on a population, or of a panel of patients. SETMA believes that this is the piece missing from most healthcare programs.
3. The statistical analyzing of the above audit-performance in order to measure improvement by practice, by clinic or by provider. This includes analysis for ethnic disparities, and other discriminators such as age, gender, payer class, socio-economic groupings, education, frequency of visit, frequency of testing, etc. This allows SETMA to look for leverage points through which SETMA can improve the care we provide.
4. The public reporting by provider of performance on hundreds of quality measures. This places pressure on all providers to improve, and it allows patients to know what is expected of them. The disease management tool "plans of care" and the medical-home-coordination document summarizes a patient's state of care and encourages them to ask their provider for any preventive or screening care which has not been provided. Any such services which are

not completed are clearly identified for the patient. We believe this is the best way to overcome provider and patient "treatment inertia."

5. The design of Quality Assessment and Permanence Improvement (QAPI) Initiatives.

The principles and this philosophy have provided the structure and content for SETMA's practice transformation.

Continuity, Creativity, Consistency Part VI
Producing a Sustainable High Quality Model of Care
By James L. Holly, MD
Your Life Your Health
The Examiner
January 26, 2017

The first five installments of this series were on the ***LESS Initiative*** (December 8th), the ***Patient-Centered Medical Home*** (December 15th), the ***Auditing for quality and safety*** (January 5th), ***Team Work*** (January 12th, and the ***Philosophical Foundation to SETMA's Transformation*** (January 19th). The goal of this series is to review the core values and functions which have enabled SETMA:

- to connect the past with the present and to prepare for the future (Continuity);
- to illustrate the ingenuity and healthcare transformation which have been central to SETMA's progress (Creativity), and to allow SETMA
- To sustain the progress of the past, tying it to the needs of the future, enabling SETMA to relentless pursue excellence in patient care quality and safety (Consistency).

This sixth installment is on sustainability which is a key aspect of healthcare transformation. Without it, change happens, but doesn't continue to happen. Often initiatives begin but shortly are forgotten as another initiative occupies the attention of a provider or an organization. Maintaining an existing positive change in patient care, while instituting another positive change, is one of the most difficult aspects of excellent healthcare.

The American Medical Association and Sustainability

This tension is what created the American Medical Associates' (AMA) collaboration with numerous other organizations to produce the Physician Consortium for Performance Improvement (PCPI). Through PCPI, the AMA designs quality initiative measurement sets which allow physicians, at the point of care, to measure their own performance while seeing patients. Depending upon how the measures are tracked and measured, PCPI measurement sets were an excellent beginning in sustainability, maintaining over a long period of time a quality improvement effort.

One of the best aspects of PCPI was that measurement sets involved multiple measures relevant to a singly condition, such as diabetes which had nine unique metrics for the care of a patient with diabetes.

An addition to PCPI was the AMA's design of the Performance Improvement Continuing Medical Education (PI-PCE) program. Historically, continuing medical education occurred in isolated lectures or readings, which attracted provider attention briefly but were often forgotten within a few weeks. PI-CME activities were designed to address this deficiency in traditional CME.

What is PI CME?

A PI-CME activity is a process by which evidence-based performance measures and quality improvement (QI) interventions are used to help physicians identify patient care areas for improvement and to change their own performance in the treatment of those conditions. This type of CME activity differs in structure from other CME learning models that may also use Performance and/or Quality improvement data (e.g., live activities, enduring materials).

To produce PI-CME tools, the accredited CME provider develops a long-term, 3-stage process during which a physician or group of physicians learns about specific performance measures, assesses their practice using the selected performance measures, implements interventions to improve performance related to these measures over a useful interval of time and then reassesses their practice using the same performance measures.

The PC-CMI has to consist of the following 3 stages:

- Stage A: Learning from Current Practice Performance Assessment

  Assess current practice using the identified performance measures, either through chart reviews or some other appropriate mechanism. Participating physicians must be actively involved in the analysis of the collected data to determine the causes of variations from any desired performance and identify appropriate intervention(s) to address these.

- Stage B: Learning from the Application of PI to Patient Care

  Implement the intervention(s) based on the results of the analysis in Stage A, using suitable tracking tools. Participating physicians should receive guidance on appropriate parameters for applying the intervention(s).

- Stage C: Learning from the Evaluation of the PI CME Effort

  Reassess and reflect on performance in practice measured after the implementation of the intervention(s) in Stage B, by comparing to the assessment done in Stage A and using the same performance measures. Summarize any practice, process and/or outcome changes that resulted from conducting the PI CME activity.

SETMA's Experience with PI-CME

SETMA's entire staff participated in our first PI-CME program in 2010. We asked the staff of the course, "Why is this course only focused upon five weeks?" The answer was revealing. The professor stated, "Because, we think that is as long as we can keep the attention of the healthcare providers." To which answer, we responded, "Oh, then you don't really expect this to make a permanent change in quality and safety but only to show a short-term improvement?"

At this time, SETMA suggested that in order to create sustainability, that the PI-CME project designed need to have a fourth step. The first three steps were important and appropriate:

1. Evaluate your performance.
2. Direct your study to the areas of poor performance indicated by number one.
3. Re-evaluate your performance after number two to see if there was improvement.

If left at this point however, PC-CME could result in the same problem as seen in traditional CME. After a while, the provider would, due to other pressures, forget the changes which were previously learned.

How could this be overcome? The name CME has been called "Continuing Medical Education" and "Continuous Medical Education." Most often, CME looked more like "Episodic Medical Education," rather than like "continuous or continuing learning." During "episodes" of learning, enthusiasm was high, but the pressures of work often distracted the provider and what had been learned and/or what had been determined to be done, was forgotten.

To turn PI-CME into a sustainable change in practice performance and to allow new initiatives to be undertaken without forgetting still valid and important former initiatives, there have to be reminders and on-going measures of that commitment and/or performance.

To be effective and to remain effective the PI-CME must have a fourth step which is the continual auditing of provider performance with available clinical decision support tools.

Clinical Decision Support (CDS) and Quality Measures (QM)

To be successful these reminders needed to be unobtrusive to the patient encounter and they needed to be completed incidentally to excellent care and they needed not to be the intention of care. There also needed to be multiple measures for each disease entity being addressed.

More than other changes SETMA made, it was the design of the tracking of quality measures and the inclusion of CDS which made it possible for SETMA continuously to improve the quality and the safety of care which we deliver.

It was this need for sustainability which led to the design of The SETMA Model of Care. That model has five steps:

1. The tracking by each provider on each patient of the provider's performance on preventive care, screening care and quality standards for acute and chronic care. SETMA"s design is such that tracking occurs simultaneously with the performing of these services by the entire healthcare team, including the personal provider, nurse, clerk, management, etc.
2. The auditing of performance on the same standards either of the entire practice, of each individual clinic, and of each provider on a population, or of a panel of patients. SETMA believes that this is that this ongoing auditing of provider performance is what is missing from PI-CME.
3. The statistical analyzing of the above audited performance in order to measure improvement by practice, by clinic or by provider. This includes analysis for ethnic disparities, and other discriminators such as age, gender, payer class, socio-economic groupings, education, frequency of visit, frequency of testing, etc. This allows SETMA to look for leverage points through which SETMA can improve the care we provide.
4. The public reporting by provider of performance on hundreds of quality measures. This places pressure on all providers to improve, and it allows patients to know what is expected of them. We believe this is the best way to overcome provider and patient "treatment inertia."
5. The design of Quality Assessment and Permanence Improvement (QAPI) Initiatives

The piece which is missing from the 3-Stage PI-CME is the ongoing auditing, analysis and reporting of provider performance. Using clinical disease support and disease management tools, as a 4-Stage, the impact of PI-CME can be perpetuated in a sustainable fashion for an entire career.

Continuity Creativity Consistency
Part VII The Patient Centered Conversation
By James L. Holly, MD
Your Life Your Health
February 2, 2017

One of the most elusive aspects of the Patient-Centered Medical Home is, "How do you modify, change, or transform the patient encounter into a patient-centric conversation, which encounter has always been provider-centric, or health-science centric?

The structure, the spirit and even some of the content of a patient-centric conversation in a patient encounter is suggested by the content of the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). The HCAHPS survey is required by accreditation bodies for hospitals. While these survey questions were not specifically designed on a patient-centric model, they are helpful in beginning this discussion. Here is what the patient is asked about their interaction with their physician while in the hospital:

1. "Did your physician and his/her team explain your care plan to you? Yes No
2. "Did your physician and his/her team answer all of your questions? Yes No
3. "Did your physician and his/her team listen to your questions or comments without interrupting you? Yes No
4. "Did anyone (doctors, nurses or other hospital staff) ask if you have the help you will need at home once you leave the hospital? Yes No
5. "Did your physician give you in writing the symptoms which would make you need to return to the hospital or get immediate help? Yes No Did they explain this in a way you understood? Yes No
6. "During this hospital stay, how often did SETMA's doctors treat you with courtesy and respect? Always Sometimes Not at all

Number three is one of the most important issues in regard to the patient-centric conversation. One of the major complaints from patients is how often and how quickly healthcare providers interrupt them while they are relating their illness, or answering a question. The interruption is not out of rudeness, typically, but often the provider gets to the answer before the patient gets to the end of his/her story. Patient-centeredness respects the patient's need to tell their story themselves.

In a March, 2008 seminal study, Dr. Carlos Jaen, Chairman of Family and Community Medicine and holder of the Dr. and Mrs. James L. Holly Distinguished Chair in Patient-Centered Medical Home at University of Texas Health Science Center San Antonio School of Medicine, discussed, "What is Patient-Centered Communication?"

This study was introduced with the observation that "despite our efforts between 30 and 80% of patients' expectations are not met in routine primary care visits," and "often, important concerns remain unaddressed because the physician is not award of the patient's worries."

Other deficiencies of non-patient-centric communications are:

- "Physicians often redirect patients at the beginning of the visit, giving patients less than 30 seconds to express their concerns."
- "Later in the visit, physicians tend not to involve patients in decision making and, in general, rarely express empathy."
- "Patients forget more than half of the physicians'…recommendations…not surprisingly, adherence to treatment is poor."

Dr. Jaen defines "patient-centered communication" as "focusing on the patient's needs, values, and wishes and is associated with improved patient trust and satisfaction."

In a physician-dominated medical encounter, there is little opportunity for the patient to have input, such as the following:

Doctor: "So, what brings you in today?"
Patient: "My back has been bothering me."
Doctor: "What kind of work do you do?"

In this encounter, the patient expresses a concern but the physician cuts the patient off and does not inquire further about that concern or other concerns. When the provider cuts the patient off and/or appears impatient, the patient will resort to monosyllabic answers such as "Yes" and "No." When that happens, the patient has assumed a passive mode and is no longer actively engaged in the encounter.

In a patient-centered encounter, the patient expresses a concern, the patient has time to give more relevant detail, the physician initiates further exploration, expresses empathy, "I bet that really hurts," and the patient confirms that he/she felt understood. Dr. Jaen identifies two important elements of a patient-centered communication:

1. Drawing out a patient's true concerns
2. Identifying which concern to address first

Two invalid assumptions physician-dominated encounters make is that the first concern a patient mentions is the most important one and that patients will spontaneously report all of their fears and concerns.

The ideal nature of a patient-centered medical encounter is when there is "explicit agenda setting" for what will be addressed. The dialogue of such a visit would go like this: "So, what brings you in today?" "My back has been bothering me?" "I am sorry to hear that. Before we go further, though, I'd like to find out if there is something else bothering you." The patient expresses a concern and the physician provides empathy, deferring further discussion pending other issues being identified.

Definition: A Patient-Centered Communication requires the primary care team to elicit all of a patient's concerns, to respond with empathy and to work with the patient to prioritize the concerns.

In a patient-centric conversation patients should be encouraged to ask questions, seek clarification and participate in decision-making. The use of technology can facilitate this process without sacrificing the patient-centered nature of the encounter. For instance, patients can complete an on-line form, or complete a form in the waiting room with a kiosk or computer access, which allows patients to think about, expand and clarify what their concerns are and to indicate what is most important.

When a patient makes an appointment for a specific issue such as a blood-pressure check, the visit can be turned into a patient-centric visit by simply saying: "I know we planned to talk about your blood pressure, but first I want to check if there are some other concerns you hoped to discuss."

Dr. Jaen concluded: "Although the principle of patient-centered communication may seem self-evident and are widely endorsed by physicians and patients, they are strikingly absent from primary care visits. Current practice design initiatives should include physician training to elicit and prioritize patient agendas as wells as patient interventions to help them identify their concerns, fears and expectations. Ultimately, these interventions can change the overall climate of patient care toward one that is more respectful, comprehensive, effective and efficient."

Technology has often been blamed for interfering with the patient/provider relationship but technology properly designed can contribute to and promote better patient/provider communication. For instance, at SETMA we have designed the Automated Team Function. When a patient makes an appointment, the computer searches the patient's medical record and identifies screening, preventive or quality standards which have not been met. Referrals, tests, procedures or other measures are automatically initiated.

When the patient is checked in and their record is opened, three things happen:

1. A document is created for the nurse as to what the patient needs at this visit.
2. A document is created for the provider as to what needs to be done for or to the patient at this visit.
3. A document is created for the patient which we call, "The Patient Activation and Engagement, Shared Decision Making Tool." This gives the patient a list of everything ordered or scheduled with a brief paragraph explaining the value and the meaning of each test, procedure or referral.

The time saved in completing these parts of the visit can be spent expanding the opportunity for a patient-centric, PC-MH conversation with the patient.

Next Week, we will discuss another part of this same issue which is the “power of personal story telling” for the patient and the practice.

Continuity, Creativity, Consistency
Part VIII The Power of Story Telling
By James L. Holly, MD
Your Life Your Health
The Examiner
February 9, 2017

In ancient times, the power of story telling was well known. History was communicated by story telling. Values and beliefs were transmitted from generation to generation by story telling. Families sat around fires and tables and told stories. Young people sat at the feet of old people and listened to stories which helped them understand who they were and what was required of them. Sacred texts began as stories told for generations, and they were told precisely and accurately.

First print and then electronic media adopted the pattern of story telling; they called it “news” and “reporting.” Radio, television, computers and cell phones began to take up the story telling time. Often, rather than enhancing our lives, these media diminished that value particularly by incidentally devaluing personal and family stories with dramatic cinema graphic and Technicolor story telling.

However, to realize how well and how alive “story telling” still is, one only has to ride a bus, a train or fly on plane to discover how readily people want to tell their story and how eager they are to do so even to do so to perfect strangers.

Anecdotal medicine – story telling medicine -- is frowned upon as it is based on personal experience without the benefit of "random controlled" or "double-blind" studies. Anecdotal medicine does not allow for analysis to determine if the conclusions of the personal experience are valid or not. Nevertheless, story telling is still an essential part of being human.

In the case of Medical Home, while there is an objective standard against which to measure the essential functions of a Medical Home, it is the "stories" which are powerful. It is the "stories" which give breath (in this case we refer to respiration and life) and depth (in this case we refer to significance and validity) to the healthcare experience.

In fact, SETMA would recommend that NCQA, AAAHC, the Joint Commission and URAC - currently, the four agencies reviewing Medical Home applications -- establish a "stories exchange." This would be a place where illustrates of successes or learning in Medical Home

could be shared with everyone. Each story will flesh out, in three-dimensions "real life situations," our understanding of what otherwise are two-dimensional abstract ideals such as "coordination," "Care Transitions" and "patient-centric conversations," among others.

While we often don't think of it in terms of "story telling," every patient encounter is an exercise in a form of story telling. Often that story is guided by medically related questions but in the context of the Patient-Centered Medical Home the more effective patient interview is found in allowing the patient to "tell their own story, in their own words, in their own way." Not only does that method give a more granular picture of a patient's needs but it increases patient satisfaction greatly. The patient-centered conversation, which is the structure of that story telling was discussed in part seven of this series.

Perhaps no other single activity is more helpful to the PC-MH transformation of a medical practice than is the intentional telling of the practice's own stories. The following are benefits of stories:

1. They give us insight into the progress we are making in our transformation efforts.
2. They capture "lessons learned," mistakes corrected, and processes changed.
3. They give a human face to an often otherwise impersonal activity.
4. They help us remember "from whence we have come" and "whither we are going" (see Abraham Lincoln and Modern Healthcare for the original of that last phrase)
5. They give us an effective and charming way of relating our pilgrimage to others in an interesting and memorable way.
6. They provide a map for others and they teach others how to tell their stories for themselves.
7. They allow us to memorialize and acknowledge the contribution of others and particularly of our collaborators who formerly were called "patients."

Let me give you an example. The full story can be read at: Continuous Professional Development: Learning from a Convergence of Events.

In shared decision making, providers and patients exchange important information. Providers help patients understand medical evidence about the decisions they are facing and patients help providers understand their needs, values, and preferences concerning those decisions. Then, ideally after allowing time for reflection, patients and providers decide together on a care plan consistent with medical science and personalized to each patient.

The story which is my example is related in an abundance of caution, I do not mention the patient's gender, age or ethnicity, or the precise date I saw the patient. For the past seven years, I have used this story to illustrate how we should respond to patents whose needs we have not met, that do not follow our plan of care and our treatment plan. I have told this patient's story many times as an illustration of one of the aspects of the best of patient-centered medical home. Four years ago, I learned by review how far that was from the truth.

I knew the facts of the patient's encounter well but I wanted to review it to make sure I remembered it correctly. Four years ago, it took me a little while to find the original, contemporaneous summary of the patient's post clinic summary of care. When I did find it and

reread it; I was shocked to see that there was an element of the case which I had not remembered and it was THE key element.

Conclusion: Unintentional Neglect of a Patient

As I re-read the patient's record, and after "seeing' what I had not heard (had no "paid attention to") at the visit, I thought and even dreamed about that visit over the following weekend. Over and over and over, the words rang in my head, "I want to lose weight."

I remembered well that once I had completed the patient's history and believed that He/she had undiagnosed diabetes, I settled on treating her/his diabetes and unintentionally ignored the patient's desires. I was certain that the patient had diabetes; which she/he did. And, I was determined to give the patient excellent care; which I didn't. Rather than explaining to the patient why I don't treat weight loss with Ionamin, thyroid and diuretics, I just ignored her/his goal.

Because I ignored the patient's goal; the patient ignored my plan. I saw him/her on a Monday; I called him/her on a Tuesday. I had our Care Coordination team call him/her on Friday. And he/she said, "I enjoyed the visit; I will return, but I am not going to… and listed every element of my plan of care. Four years ago, I and my staff tried to locate the patient without success, I realized that while I would have labeled the patient "non-compliant" using ICD-9, ICD-10 or SNOMED codes for that diagnoses; the real diagnosis should have been "failure to communicate," "non-patient-centric care," "failure to activate the patient," and/or "failure to engage the patient."

The fault was not the patient's; the fault was mine. What if I had engaged the patient in a conversation about weight reduction? What if I had discussed with the patient, the reasons why I don't prescribe Ionamin, thyroid medicine and diuretics for weight reduction? What if I had walked the patient through SETMA's Adult Weight Management program? What if I had said, "While we are helping you lose weight, we can also help you control your diabetes?"

Until that moment four years ago, my memory of this patient's care was that of excellence and of the sad rejection of that care by the patient. Today, I remember this patient's care as my failure due to the hubris of "my thinking that I knew better." If my goal had been to help this patient and it was and is, then I should have met the patient's needs and expectations in order to gain the opportunity to meet the patient's real health needs. As it turns out, I have the opportunity to do neither.

The recognition of having made a mistake

Plutarch said, "To make no mistakes is not in the power of man; but from their errors and mistakes the wise and good learn wisdom for the future." My mistake can be forgiven if I learn from it. And, how will I evince that learning?

I think I shall never see a patient without asking the question, "What is your goal?" "What do you want to achieve in this visit and in the care you will receive from this clinic?" That question

is partially answered when the patient-encounter record documents the patient's "chief complaint."

But to make it more explicit, we are today adding a comment box to each disease management suite of templates and to each suite of templates. It will be labeled: "Patient Goal." It will be expressed in the patient's words." While we want to use structured data fields, this may be one case where structured data fields obscure the issue. As we have more experience with shared-decision making, we will clarify this data field more precisely.

But, we will never ignore a patient's personal goal again. And, if the patient's goal is something which is inappropriate, or which can't or shouldn't be done, we will address that directly and frankly, rather than just by ignoring it.

I hope I get to meet this patient again. And, if I don't, I shall see her/him in the face and eyes of every patient I see, as I focus upon their goals and desires in order to have the privilege and opportunity to meet their real health needs.

Our stories are the means for remembering and by remembering we improve. (see: Medical Home - The Story and the Ideals for more "stories and ideals.")

Continuity Creativity Consistency
Part IX Care Coordination and Convenience
By James L. Holly, MD
Your Life Your Health
The Examiner
February 16, 2017

As we approach the conclusion of this ten-part series on PC-MH, each of which parts relate to continuity of care, creativity of solutions and consistency of performance, we come to "care coordination." While this seems so obvious to us now, soon to be ten years into our PC-MH pilgrimage, it has not always been obvious. The following is what we have learned.

In addition to the *SETMA Model of Care* (see: The SETMA Way - SETMA's Model of Care Patient-Centered Medical Home: The Future of Healthcare Innovation and Change), there are many activities which relate to the "heart of patient-centered medical home." Care Coordination is among them. Addressing the fourth goal of the 2011 National Priorities Partnership, in their report to HHS, the National Quality Forum stated that in regard to care coordination: "Healthcare should guide patients and families through their healthcare experience, while respecting patient choice, offering physical and psychological supports, and encouraging strong relationships among patients and the healthcare professionals accountable for their care… Focus in care coordination by NPP are the links between: Care Transitions— …continually strive to improve care by … considering feedback from all patients and their families… regarding coordination of their care during transitions between healthcare systems and services, and…communities. Preventable Readmissions— …work collaboratively with patients to reduce preventable 30-day readmission rates."

The principle tool of Care Coordination at SETMA is 'The Baton."

This is a framed copy of "The Baton," which is a representation of the patient's "plan of care and the treatment plan." This is the instrument through which responsibility for a patient's health care is transferred to the patient. Framed copies hang in the waiting room of and hall way of every public place in SETMA. A poster copy hangs in every examination room. The poster declares:

Firmly in the providers hand
--The baton – the care and treatment plan
Must be confidently and securely grasped by the patient,
If change is to make a difference
8,760 hours a year.

The poster illustrates:

1. That the healthcare-team relationship, which exists between the patient and the healthcare provider, is key to the success of quality healthcare.
2. That the plan of care and treatment plan, the "baton," is the engine through which the knowledge and power of the healthcare team is transmitted and sustained.
3. That the means of transfer of the "baton" which has been developed by the healthcare team, including the patient, is a coordinated effort between the provider and the patient.
4. That typically the healthcare provider knows and understands the patient's healthcare plan of care and the treatment plan, but that without its transfer to the patient, the provider's knowledge is useless to the patient.
5. That the imperative is that the plan - the "baton" - is transferred from the provider to the patient, if change in the life of the patient is going to make a difference in the patient's health.
6. That this transfer requires that the patient "grasps" the "baton," i.e., that the patient accepts, receives, understands and comprehends the plan, and that the patient is equipped and empowered to carry out the plan successfully.
7. That the patient knows that of the 8,760 hours in the year, he/she will be responsible for "carrying the baton," longer and better than any other member of the healthcare team.

The genius and the promise of the Patient-Centered Medical Home is symbolized by the "baton." Its display will continually remind the provider and will inform the patient, that to be successful, the patient's care must be coordinated, which must result in coordinated care. Coordination begins at the points of "transitions of care," and the work of the healthcare team - patient and provider - is that together they evaluate, define and execute that care. The most common and frequent transition of care is when the patient leaves the provider's office.

As the Baton is the "tool" of coordination, the philosophy of coordination is contained in the statement that, "Convenience Is The New Word For Quality."

At the HIMSS Leaders & Innovators Conference held at Amelia Island in November, 2011, Mark Bertolini, Chairman, CEO & President of AETNA said, "Convenience is the new word for quality." The statement on its face seems an oversimplification. How can doing things, the way patients want, when they want, where they want and how they want, contribute to the achievement of quality outcomes?

In 2009 and 2010, as SETMA became a Tier III, PC-MH, and as we struggled with the concept of "care coordination," we prepared over 50 articles on PC-MH. On August 18, 2011, three months before Bertolini's addressed, SETMA published an article entitled: *Medical Home Series III Part VII Care Coordination" (see:* Medical Home Series Two: Part VII Care Coordination).

This article in part stated, "As with most issues of quality care in the 21st Century, a **process** has an **outcome** and a metric may measure one or the other." **The article continued: Coordination of Care** is the process an organization goes through to assure that patients receive the care they

need and **Coordinated Care** is the outcome, i.e., the experience and perception the patient has when the care has been organized for continuity, for convenience and for compliance."

Care Coordination involves the following five elements:

- Collaboration
- Convenience
- Comprehensiveness
- Connection
- Communication and Continuity

Initially, the idea of **convenience** in the scheduling of multiple appointments at the same time was the extent of SETMA's understanding of this element of coordination. Eventually, "convenience" was translated into the understanding that **coordinated care** means more than just making patients comfortable; it meant and it resulted in:

1. Convenience for the patient, which
2. Results in increased patient satisfaction, which contributes to
3. The patient having confidence that the healthcare provider cares for the patient personally, which
4. Increases the trust that the patient has in the provider, all of which
5. Increases compliance (adherence) in the patient obtaining healthcare services recommended, which
6. Promotes cost saving in travel, time and expense of care, which
7. Results in increased safety, quality of care and cost saving for the patient.

This requires intentional efforts to identify opportunities to:

1. Schedule visits with multiple providers on the same day, based on auditing the schedule for the next 30-60 days to see when a patient is scheduled with multiple providers and then to determine if it is medically feasible to coordinate those visits on the same day.
2. Schedule multiple procedures, based on auditing of referrals and/or based on auditing the schedule for the next 30-60 days to see when a patient is scheduled for multiple providers or tests, and then to determine if it is medically feasible to coordinate those visits on the same day.
3. Scheduling procedures or other tests spontaneously on that same day when a patient is seen and a need is discovered.
4. Recognizing when patients will benefit from case management, or disease management, or other ancillary services and working to provide the resources for those needs.

Convenience is a process, not an outcome of coordination of care. Therefore, SETMA formed a Department of Care Coordination and created a convenient method for enlisting that department in a patient's care.

This template allows the provider and/or nurse to send an e-mail to the Department of Care Coordination, which helps find resources for a patient's special needs. Several functions are included with this template:

If a provider completes three or more referrals in any given encounter, an e-mail is automatically sent to the Director to allow for the coordination of those referrals to increase convenience and compliance.

It was only through this analysis that we accepted "convenience" as a worthy goal of quality care as opposed to it only being a means of "humoring" patients. This fulfilled SETMA's goal of ceasing to be the constable, attempting to impose healthcare on our patients; and, to our

functionally becoming the consultant, the collaborator, the colleague to our patients, empowering them to achieve the health they have determined to have.

Continuity Creativity Consistency
Part X The Place and Spirit of Accreditation Activities for Improving Healthcare which is Sustainable
By James L. Holly, MD
Your Life Your Health
The Examiner
February 23, 2017

This is the final part of this 2017-ten-part summary of SETMA's PC-MH pilgrimage. The entire series consists of the following:

I. The Less Initiative
II. PC-MH
III. Auditing for Quality and Safety
IV. Team Work: The Key to Excellence in Healthcare
V. Organizational Philosophical Foundation
VI. Producing a Sustainable Health Quality Model of Care
VII. The Patient-Centered Conversation
VIII. The Power of Story Tell
IX. Care Coordination and Convenience
X. Place & Spirit of Accreditation Activities for Improving Healthcare

This is a good summary of the crux of SETMA's PC-MH. Along with the over 150 articles at www.setma.com on PC-MH, SETMA's journal is well documented. The following links on SETMA's website give further guidance to our understanding of PC-MH:

- Senior Medical Student Externship - SETMA's MS4 Patient-Center Medical Home Selective Syllabus
- Medical Home
- Transforming Your Practice

This last part of this most recent series on PC-MH addresses SETMA's understanding of the value of accreditation in the PC-MH transformation process. To that end, on November 18, 2015, SETMA had a conversation by e-mail with a member of a PC-MH accreditation body. Because accreditation is an important part of excellence in healthcare organizations, in oversight, in compliance functions and in quality improvement, SETMA believes the spirit of accreditation surveyors should be collegial and collaborative. If accreditation and/or oversight deteriorates

into an adversarial dynamic, the positive effects of that oversight can and will be lost. This is true for accreditation organizations and for compliance officers, whether governmental or other.

The Question posed by the accreditation executive was, “You note that ‘The provider must be an extension of the family. This is the ultimate genius behind the concept of Medical Home, and it cannot be achieved by regulations, restrictions and rules.’ Are you implying by this statement that there is no role for "regs, rules, and restrictions", or simply that they are insufficient to sustain long-term change?”

SETMA responded, “No doubt, as our accreditation efforts suggest, we believe that there is a key place for standards and guidelines. The point of SETMA’s comment is directed at the government’s preoccupation with creating ‘change’ with demands and dictates. SETMA has said to the Office of National Coordinator often, ‘if you demand that everyone must do the same thing, the same way, every time, you will eliminate creativity, generative thinking and transformation. Tell us what you want done and let us demonstrate our unique way of doing it. Then evaluate and find the ‘best practice or best solution’ and promote that.’”

When change is driven only by external demands, it is not sustainable and will become dependent upon rewards to drive improvement. But when change is driven by internalized values and vision, being self-sustaining and generative in nature, it is sustained not by financial or other rewards, but by the passion of the participants. For change to be permanent, it must be driven by transformation rather than reform. Transformation is driven by internalized value and vision. Rules, regulations and requirements can be part of an external standard against which you can measure yourself, but they will never become a part of the energy which sustains change.

The executive’s second question was, “Also, would you consider ‘standards’ (such as those that certain accrediting bodies use) to be equivalent to “regs, rules, and restrictions’, or do you see them as having value because they offer a blueprint that describes a desirable future state that is worth attaining/maintaining?””

SETMA responded, “As implied above, we think standards are important guideposts in starting us on our pilgrimage and in giving us guidance in what to do, and, often, even, in how to do it. Remember Lincoln’s famous quote in his 1858, “House Divided Address” to the Republican National Convention. He said, “If we can first know where we are and whither we are tending; we can better judge what to do and how to do it.” A healthcare GPS must tell you where you want to go – that is often expressed in standards, evidenced-based goals and quality outcomes – but if the GPS does not also tell you where you are – how far you are from where you want to be -- you can never get to where you want to be.

Standards are what we measure ourselves against, as we create our future. Remember Peter Senge’s great comment in *The Fifth Discipline* as he addresses “creative tension,” which is the difference between your “reality” and “your vision.” The “tension,” which cries out for resolution is created by standards which you have not yet met, but which you embrace as “the good.”

Yes, we believe in standards, that is why we sought accreditation and why we will renew it. That is why we objected to the original spirit of the surveyors as they announced in their first sentence, "If you are doing something wrong, we will find it." It was a threat, when in fact that is why we sought accreditation in the beginning – to tell us both what we are doing wrong but more importantly to tell us what we are not doing right.
We WANTED to be measured by the standard; to discover we needed improvement was not a threat, it was an expectation. The worst experience of bringing in a practice consultant is that after you have paid him/her $10,000, you are told, you are doing everything perfectly and we can recommend no improvement. You have just wasted your consultation fee. If, however, you are told, we can show you how to really improve. That has great value.

In Senge's work, the interesting thing about "creative tension," as it drives you from your "reality" to your "vision," is that as you approach your "vision," and as your "vision" increasingly becomes your "reality," you discover that your "vision" expands and when you "arrive" at your former "vision," it having become your "new reality," is challenged by a new and larger and more comprehensive "vision." That should always be the goal. I would hope that when we are reaccredited by the that we will have corrected the very few things which you pointed out before but that you will find subtler and perhaps even more important things we can improve. That is not failure; that is progress and that is a dynamic for success.

Because SETMA believes in Accreditation, we have sought and achieved accreditation and/or recognition from the following:

SETMA's Recognitions and Accreditations

• **NCQA – PC-MH Tier III**	**2010-2019**
• **NCQA – Diabetes Recognition**	**2010–2019**
• **NCQA – Heart And Stroke Recognition**	**2013-2019**
• **NCQA – Distinction in Patient Experience Reporting**	**2014-2015**
• **AAAHC -- PC-MH**	**2010-2017**
• **AAAHC -- Ambulatory Care**	**2010-2017**
• **URAC -- PC-MH Advance Certification with EMR**	**2014-2017**
• **The Joint Commission – PC-MH**	**2014-2017**
• **The Joint Commission – Ambulatory Care**	**2014-2017**
• **The Joint Commission – Clinical Laboratory Services**	**2014-2016, 2016-2018**

Any organization serious about transformation needs the stimulation and evaluation of multiple accreditation experiences. However, achieving these benchmarks was not the end of our journey but only the end of the beginning. The dynamic process of PC-MH transformation continues. Daily, SETMA recognizes the value of our journey. We recognize that this was the right course to take. We realize how far we have come but we also recognize that we will always be

"becoming a PC-MH" and never finally reaching the end point. This is not frustrating nor discouraging; it is challenging and encouraging.

Learning from Patients: Diabetes or Not
By James L. Holly, MD and Jaweed Akhter, MD
Your Life Your Health
The Examiner
March 2, 2017

Our recent series of articles on Patient-Centered Medical Home included a discussion of the value of "story telling." With the patient's permission, today we are telling the story of a patient who has been seen at SETMA over the past several years. His identify will not be disclosed but he will know that this story is about himself.

The intent of telling his story is to identify how it is sometimes difficult to come to the right conclusions immediately and why it is important to keep asking questions and to discuss those questions with the patient. Ultimately, the right answer can be found. In reviewing a case, it is possible to identify how things could have been done better and how the right diagnosis and treatment was ultimately found. Additionally, the lessons learned in this process can benefit others. It has been my experience that patients appreciate when a healthcare providers tells them that the provider does not know what the problem is but will keep seeking the answer. Also, it is far better to admit when you don't know than to pretend that you do.

Our patient was first seen in July, 2015. Due to his age, in addition to screening for cardiovascular risk, an initial screening for diabetes was completed. At that visit, he had a fasting blood sugar (FBS) of 131 mg/dl which is high but his Hemoglobin A1c was 5.1%, which is normal. His urine was negative for glucose (sugar). No intervention was made at that time. Ideally, he would have been given a follow-up appointment in three months to evaluate his blood sugar.

SETMA has created extensive tools for support in the management of diabetes including:

Pre-Diabetes: EPM Tools - Diabetes Prevention Tutorial
Diabetes: EPM Tools - Diabetes
Insulin Resistance: EPM Tools - Cardiometabolic Risk Syndrome Suite of Templates Tutorial

Many of the questions raised by this case study, including the definitions of pre-diabetes, diabetes and insulin resistance can be found in the above referenced material, all of which is posted on SETMA's website at www.setma.com.

Patient Presenting With Symptoms of Possible Diabetes

The patient's next visit was July 25, 2016. He was treated for a minor condition. No blood sugar was done at that visit but he did have a significant amount of sugar in his urinalysis. This should have been addressed but was not until the patient was seen one month later, at which time he was complaining of classic symptoms of diabetes, increased thirst (polydipsia), increased appetite (polyphagia) and increased urination (polyuria).

At the August, 2016 visit, the patient had a Hemoglobin A1c of 10.2%. No blood glucose was done but with the 10.2 Hemoglobin A1c, it would be expected that the patient would have had a blood glucose of 296 mg/dl. Among the lessons learned from this patient's care are: always follow up sugar in the urine with a blood glucose and while it is early in the treatment of a patient with diabetes always match the Hemoglobin A1c with a serus blood glucose measurement. The importance of that will be discussed shortly. The patient was appropriately referred to diabetes education and was placed on a diet, exercise program and oral medication.

The patient had an adverse response to the high dose of diabetes medication and developed diarrhea. The medication was stopped. He was seen again on September 14, 2016, but no blood sugar was done. On September 19th, he attended diabetes education classes. He rigorous perused a low carbohydrate, low calorie diet, exercised and lost weight. He was seen again on November 11, 2016 but no laboratory studies were ordered. On November 30, 2016, he was seen by a diabetes specialist and his Hemoglobin A1c was 5.0% which is normal, but no blood glucose or urine was done.

His next visit was December 20, 2016, at that visit his blood sugar was 103 mg/dl, which is almost normal but in the range of early onset pre-diabetes, and his urine was negative for sugar. Because of the recent Hemoglobin A1c it was not repeated. On January 30, 2017, the patient was seen again and this time he was seen by the same person who saw him in July, 2015.

Here is where the Mystery Unfolded

Here is where the "mystery" began to unfold. This visit was made for "weight loss and ankle pain." The patient was on no medication for diabetes at this visit. After reviewing the entire record and not only each lab test but the sequence of those tests, a number of questions arose about this history.

The patient had had four Hemoglobin A1C tests. Three were completely normal but one was very high (July, 2015, 5.1%; August, 2016, 10.2%, 5.0% November, 2016; 4.8% January, 2017). The patient had had three blood sugars which were mildly abnormal (131 mg/dl in July, 2015; 104 mg/dl in December, 2016; 113 mg/dl in January, 2017). There was no blood sugar to correlate with the 10.1% hemoglobin a1c value.

1. Does the patient have diabetes?
2. Was the August, 2016 Hemoglobin a1c Value a laboratory error?
3. Does this patient have an hemoglobinopathy, in which case the Hemoglobin A1c cannot be used to follow the patient's blood sugar history?
4. How should the patient be treated?

All of these questions were discussed with the patient. And, the history and questions where discussed with the diabetes specialists. To get the answers, additional laboratory tests were done. The results and discussion are:

1. Urinalysis shows no glucose in the urine
2. Hemoglobin A1c is 4.8% (normal is below 6.0%; pre-diabetes is 6.0 – 6.4%; diabetes is 6.5% and higher)
3. Fasting Insulin was done and is 8 UIU/ml (normal is 2-19 UIU/ml
4. Fructosamine was done 209 UMOL/ml (normal is 190-270 UMOL/l
5. A 2-hour glucose tolerance test was done

    - Fasting 112 mg/dl
    - 30 minutes 194 mg/dl
    - 60 minutes 193 mg/dl
    - 2 hour 176 mg/dl

    (Note: Normal fasting blood sugar is below 100 mg/dl; pre-diabetes is a fasting blood sugar between 101-125 mg/dl; diabetes is a fasting blood sugar over 126 mg/dl. In the case of a "casual" blood test, i.e., not fasting normal is below 140 mg/dl; pre-diabetes is 140-199 mg/dl; diabetes is greater than 200 mg/dl))

    Urine glucose negative for all samples

6. HOMA-IR 2.3 (normal is less than 2.0)
7. Triglyceride/HDL .71 (normal is less than 2.0)
8. Cardiometabolic Risk Syndrome Assessment -- negative
9. Hemoglobin electrophoresis was normal

With this information, it is possible to answer all of our questions and to treat this patient properly. The one question which is impossible to answer definitively is whether or not the August, 2016 hemoglobin A1c of 10.1% is real or whether it represents a lab error. It is probable that we will never know, but the lesson to be learned is that a blood sugar and a urinalysis should always be done when evaluating a patient in the early stages of treatment for diabetes, pre-diabetes or insulin resistance.

First, remember the August 19, 2016 visit. When the patient's hemoglobin A1c was 10.1% a blood sugar and a urine for glucose should have been done. This is not a new revelation; it is a reminder that new and more exotic test do not take the place of simpler older tests. The patient did not suffer any ill-effects of this oversight but that is not an excuse. Second, the patient's clinical presentation was classic for diabetes which was shown by the 10.1% hemoglobin A1c.

Again, as in this case, while the state of the art in diagnosing diabetes is now defined as two successive hemoglobin a1cs above 6.5%, it can be important, as in this case, to measure the blood glucose with the hemoglobin a1c.

Third, when as in this case, there is doubt or questions about the hemoglobin a1c, it is possible to do a 2-hour glucose tolerance test and a fructosamin to correlate with the hemoglobin a1c. Fructosamine is another marker for abnormal blood sugar for the past 30 days. The hemoglobin a1.c correlates with the blood sugar for the last 90 days. Fourth, in January, 2017, this patient's glucose tolerance test shows pre-diabetes and not diabetes. That will become important in our following discussion.

Fifth, the fundamental metabolic flaw in Type 2 diabetes – formally and incorrectly called non-insulin dependent diabetes – is that the organs are insensitive to insulin. For instances, when the blood sugar goes up, the pancreas produces more insulin which signals the muscles to take up glucose and use it for producing energy. Insulin also signals the liver to stop producing more glucose from the proteins, fats and carbohydrates which have been consumed by the patient. When the patient's body loses its sensitivity to insulin, the glucose in the blood is not taken up by the cells and the liver does not stop producing 'new" glucose.

Insulin Resistance

There are five ways to assess insulin resistance. First, it is implied by the blood glucose, which when it is elevated suggests that the patient, if they do not have Type 1 Diabetes, has Type 2 which is based on insulin resistance. Second, the Triglyceride/HDL Ratio is a marker for insulin resistance. When that ratio is above 2.0, it is highly suggestive that the patient is insulin resistant. A third marker is increased fasting plasma insulin levels. The normal insulin level in a patient's blood is between 2.0 and 19.0 UIU/ml. Insulin normally go up after you eat, so it is very important to measure this level after you have fasted for 8-12 hours. Fasting Insulin levels are not often used in clinical medicine except in the unusual cases where it is hard to know if the patient has diabetes, pre-diabetes or insulin resistance. Fourth, there is a research computation which SETMA has incorporated into clinical medicine for unusually cases and that is the Homeostasis Model Assessment of Insulin Resistance (HOMA-IR). This is a calculation made with fasting glucose and fasting insulin values. If the value is above 2.0, it is diagnostic of insulin resistance.

The fifth way to access the presence or absence of insulin resistance is very interesting. It is a collection of conditions which together have been known as the:

- Syndrome X
- Insulin Resistance Syndrome
- Metabolic Syndrome
- Cardiometabolic Risk Syndrome

These are not four different conditions but different names which have been used at different times for the same condition. They move from earliest to the current designation. Through electronic algorithms, SETMA is able to complete three different computations for this

condition. This patient was negative for all three formulations of the Cardiometabolic Risk Syndrome which we measure.

In summary, our patient does not have diabetes but does have pre-diabetes (next week, we will discuss what that means). Our patient has mild insulin resistance but his markers for that condition are very mild. Because diabetes and pre-diabetes are progressive conditions, without life-style changes – all of which he has made – and often even with them, he will progress over the years to full-blown diabetes. We will never know if the August, 2016 hemoglobin a1c is an lab error or not but we do know that while in the early stages of diagnoses and treatment, we need all three evaluations, hemoglobin a1c, urinalysis and serum blood glucose.

After discussions with the patient we have decided to put him on a medication which improves insulin sensitivity so that he can forestall the development of diabetes. He will be rechecked in two month intervals for six months and after that as needed.

Next week, we will discuss insulin resistance in more detail.