What's Next?

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Like the talk given by Bill Riggs last time, tonight's talk is from a member of high school class of 1952. During that year at Southeastern High School in Detroit my choice was between Wayne University which meant living at home and the University of Michigan "going away" to school. It turned out to be the latter. I got my first choice. I was pretty much paying my own way anyway. For the record undergraduate tuition was $90.00 a semester and medical school just $300. After eight years at U of M, It was my privilege to enter the medical profession. Tonight is a reflection of 50 years in medicine, while asking the question the question what's next?

Fifty years seems to be a popular milestone for recognition of human endeavors. It's more like 100 years for inanimate objects like furniture and so forth, but for humans, antiquity comes sooner because of our mortality. Enduring to me means more than just surviving. That is what birthdays are for and even in humans it takes a hundred years to be a real accomplishment. The "counting" for enduring is what we do over and above simply surviving and keep a scorecard for. This usually starts with things done in adult life. In our culture we hear most about adult endurance in terms of those marriages that reach the 50-year mark. To accomplish 50 years in marriage and really anything most human endeavor you must start early, choose wisely, and hang in; let's say starting in the 20's and lasting till the 70's and unique to marriage say "Yes Dear" a lot!

Today and maybe at any time to continue actively performing the same job for 50 years is rare and today, unless a person is self employed and stubborn, virtually impossible. Looking back, a century is a convenient time frame. For example the gasoline internal combustion engine celebrated at 100 years in the late 20th century, and there are many other centennials and not so long ago our countries bi-centennial. Dealing with the shorter terms of human endeavor what occurred to me is that I worked at Indiana School of Medicine 40 years, and this is as long as it took for heavier than air aviation to progress

from Wilbur and Orville flying a few hundred feed at Kitty Hawk in 1903 to trans-ocean air travel in 1943. What happened during the 40 years at IU and in the 10 years of practice since in the field of medicine?

Not every activity deserves a nostalgic look back just because it survived half a century. Some are best left alone and others may be only of limited interest, involving those closely associated. The upcoming 50th reunion of the medical school class of 1960 from the University of Michigan School of Medicine that I will be attending falls into the latter category. I will be there, God willing, and so will many of the 155 members of the class. No big deal!

However, something unsettling has occurred during this span of medicine. This is the hue and cry, voiced by politicians and the public, saying that the United States has a health care system that is "broken". The term "broken" has been aimed mostly at insurance companies and the high cost of medicine, but also blamed are doctors who perform unnecessary tests, and those who "over specialize" while ignoring the everyday needs of the population, including public health, and preventive medicine. Other problems include the high of medicines, over-prescription of these medicines, doctors guilty or accused of malpractice to name a few. This attitude is exacerbated by some who laud the health care in other parts of the world including the Scandinavian countries, Canada, and even Cuba, while others promote "medical tourism" especially to India.

Looking forward with satisfaction and a sense of accomplishment to be celebrated at the 50th a question arises. What is my own reaction to and responsibility for the state of medicine today, and where will this all lead us?

Starting at the beginning; I officially became a doctor started on a Saturday afternoon in June 1960 when I received my diploma. The event for me contained a sober note. Listening to the address to the graduating class delivered on the field of the University of Michigan Stadium, later dubbed by the brotherhood of sportscasters as the "Big House", the speaker, whose name I have forgotten or more

likely probably never knew, railed on at one point in his speech saying what a wonderful country the United States was. It had wonderful people who had accomplished great things. Hearing this made a person proud. This was followed by his statement, "It's hard to believe half of you are below average!" I am not sure what point he was making beyond the obvious. In any continuum this will be true. Was he telling us as individuals to aspire to greater heights or was he telling us that no matter how we behave or what we accomplish for the group we choose, half of us would make up the lower half. Was it another way of saying the "the poor will always be with us"? Was he calling us to service? I'll never know; it is obvious I have not forgotten what he said.

What healthcare system like when my classmates and I enter back in 1960? It existed and had a character, but the likely answer is that we were thinking about the big picture; instead our thoughts focused on July 1, 1960, the day our internship would begin. For me it was "please God don't let me be assigned to the emergency room duty on July 4th". The rest I thought I could manage. For the record, He had other plans for me and yes I did work July 4th in the emergency room. Some very good things and some probably not so good things happened during that year. We were paid over $4,000 for the year. Great! We got free food. I gained 15 pounds, not great. I took double dinner every night and my wife paid for only a salad. We split my bountiful tray at the table. Good. We were required to wear starched pants, short white coats, usually a white shirt, and tie. Good, It gave the feel of being part of a team. As the pounds were added, the stiff pants cut into my waist more and more. Bad. We worked 24 four hours every three days. Strangely this was Good, I thought fraternity hazing was "rinky dink, contrived, and borderline sadistic" In contrast the hospital routine was more like being a Marine. It made you proud to endure and this was Good. At that time we interns were frequently called on to carry out tasks that we not capable of. This along and with sleep deprivation led to selective under performance. Not so good.

There were lighter moments. I was on medicine call in July when I got a call at 2 AM to go to the ward. St. Joseph Mercy Hospital in the shadow of the University of Michigan Hospital and affiliated with it had more than 400 beds and provided full service. We had 11 interns who were the first call responders. If we encountered something we felt we could do we did it. If not we called a resident. If they needed help a staff doctor was called. When I got to the ward was to pronounce a patient dead. That was a task considered in my "pay grade. " Although I had never actually done this before, this task seemed straightforward. If people are dead they are dead. To do it in "life", no pun intended, can be something else. After a quick review of the patient's chart, I went to the room to see a still, elderly woman. I used my stethoscope to listen for any breathing; none. Heartbeat; none. I shined a light in her eyes; response no. I stood a few minutes and concluded that she was indeed dead. Returning to the nursing station I phoned her husband with a call he had been expecting. Completing the paper work, I heard a young student nurse announce that Mrs. Blank, who I had just pronounced dead, had asked for a glass of water. With an incredible sinking feeling I returned to the room and repeated my earlier ritual confirming that Mrs. Blank was indeed dead. Upon returning to the nursing station, where the student nurse was charting her evening rounds, I asked when Mrs. Blank has asked for the water. After some figuring the young nurse said, "that was one of the first rooms I went in on my night rounds so it must have been about two hours ago". With that I said, I was going to change the cause of death, "*Died of thirst*". The student nurse did not react!

That year 1960 was the last time I was involved in general medicine, except for an 18-month stint as an Armed Forces Induction Center Examiner that took place during a two year hiatus in my residency. At the conclusion of the internship I entered training in ophthalmology and still later trained as a pediatric ophthalmologist. That I suppose makes me guilty of "overspecialization".

In 1960, heart surgery was in its infancy. Our class in medical school went to the Detroit institute of arts to watch a live broadcast of heart surgery done by a well-known surgeon, Dr. George Bailey, of Philadelphia, who had recently been featured on the cover of Time. This demonstration included a panel of expert surgeons and cardiologists including Dr. Paul Dudley White who had became famous as President Eisenhower's cardiologist. We were there to witness coronary artery bypass surgery. During surgery that was shown live, in black and white, on a huge screen in the museum auditorium, a scene occurred where the surgeon's voice raised and became high pitched saying repeatedly "will anybody help me?" The chest cavity, where we had been observing the heart, filled with a dark fluid, blood, obscuring all detail. The scene immediately switched to the panel where the doctors talked in more or less generalities ignoring what had just occurred in the operating room. A short time later the screen returned to the operating room. We again saw a heart that appeared to be beating. The surgeon made a few comments and that was it. We were never sure of the outcome, only that it didn't look like the procedure was perfected and that performing surgery live for an audience could be scary business. I have done this many times as an international volunteer on the ORBIS Flying Eye Hospital. It can be scary business.

The summer between the sophomore and junior year I worked as a substitute intern at Receiving Hospital in Detroit (actually I was a scab). A resident asked me to help dismantle a sigma motor pump so that it could be sterilized. The device that had been developed in the dog lab was intended for use in an upcoming surgical procedure to correct an aortic aneurysm. We tested the pump, and concluded that it wouldn't work as intended. We shared this information but to no avail. The next day, as observers in the crowded operating room, to our alarm, but not surprise, did not work. It had been primed with what seemed like gallons of blood but it simply would not pick up the fluid. The surgery was well underway by the time the non-performing pump was ready for attachment. The procedure was aborted. The patient survived this, but I don't know what the final outcome was. With

so many new things happening during this stage, we tended to look ahead and not backward especially since we had no chance to influence.

Fifty years ago, at least some parts of medicine could be compared to the" wild, wild west". Doctors at times seemed to "shoot from the hip". Research was being carried out without obtaining consent from the patient and without the oversight of the now operational institutional review boards. This is a subject that has been addressed with this group recently by Steve Jay. My mentors, even the most distinguished, revered, and ethical would; for example. Do one procedure to alter the effect of an eye muscle on one eye and a variation on the other eye; the aim being to determine which worked best. Either procedure could be considered safe enough to perform if done on both eyes but with slightly different result. However, since symmetrical rather than absolute results were more important, patients were put at risk to receive a less than optimal binocular result and some did. To be sure clinical "researchers" observed closely and acted promptly, but the basic methodology of this type of clinical research was flawed. Fortunately it is no longer done.

Fifty-two years ago, polio vaccine was introduced. During my junior year in school I walked by Hill Auditorium as the announcement was being made. I wondered why all of the media equipment, but my mind was on the Nu Sigma Nu kitchen and my job as a cook's helper.

These are just a few small events that stand out for me personally. But, what are the significant changes in health care overall that have taken place over the past half century and what has occurred in the area of my specialty, medical, optical and surgical care of the eye?

Here are my nominations for major changes in the last 50 years. Others who have practiced medicine for 50 years and longer may have a slightly different list, but there is also likely to be some agreement. Patients will also have their own ideas but I will limit my observation to those of the doctor/provider.

The changes that I have observed have not been all advances are listed, and are not necessarily in order of importance.

1. Heart surgery including, bypass, stents, valve replacement, and management of arrhythmias
2. Newer anesthesia agents propophal, and Versed along with better monitoring
3. Laproscopic surgery
4. Robotic surgery
5. Joint replacement
6. A wide array of new medicines both for health and for enhancement of lifestyle
7. Discovery and mapping of the human genome
8. Imaging with CT, MRI, and ultrasound
9. Shorter hospital stays, leading to more out-patient events
10. Information technology for records and education
11. Wider array of specialization and sub-specialization
12. Advertising by physicians, hospitals, and pharmaceutical companies
13. Escalation of aggressive mal-practice advertising including class action suits recruiting
14. Medicare
15. Medicaid
16. Women in medicine

17. Increased efficiency with patient management by technicians and support staff at all levels
18. More government involvement at all levels of practice with reimbursement, records, and more
19. De-deification of the doctor
20. Introduction of tax free self funding of retirement plans
21. International volunteerism (local too)
22. Disappearance of the "house call", advent of the "doc in the box", and rise of "boutique" medicine
23. The "emergency room" specialist
24. More group practice both single and multiple specialties
25. More doctors functioning as employees of hospitals and clinics
26. Tissue cultures starting with the HeLa cells
27. Stem cell research/use

These and other changes have altered the landscape of medicine tremendously over the past 50 years. Are these all improvements? Probably not! What types of changes are most likely to be positive? It is hard to ignore the increased length of life. The obituaries and death notices today list many people in their 90s. A big change from the 60s. It is likely that health care delivery is responsible for most of this.

My professional life has been in eye health care working as an ophthalmologist dealing mostly with children. Tremendous. These can be ranked at advances have occurred. These include:

1. Total change in management of cataract: surgery is done now virtually "on demand", is 98% successful (the most successful major surgery in health care), surgery time ranges from 2 ½ to 12 minutes, intraocular lenses are the rule with some being multifocal eliminating the need for reading glasses, Patients spend 2 to 3 hours in the facility. No stitches are used. I had dinner in a restaurant with Marilyn Glick the day of her cataract surgery!

2. All areas of the eye and central nervous system can be imaged with MRI, CT, MRA, A-Scan, B-Scan, and Ocular coherence tomography. This is like performing an autopsy in vivo!

3. Contacts lenses that are disposable, cheap, and suitable for extended wear.

4. Refractive surgery (incidentally this procedure not covered by insurance is experiencing drastically lower prices dictated by the market!)

5. Botox discovered for ophthalmology and used in initially for purely medical reasons is now used mostly for aesthetics and is the leading product of the largest providers of ophthalmic pharmaceuticals in the world.

6. Sub-specialization into 8 distinct ophthalmic subspecialties

7. Synthetic absorbable suture (doesn't seem all that important but a huge improvement over cat gut or collagen)

8. Out- patient surgery

9. Auto-refraction, computerized visual field testing, computerized eye pressure testing tonometry

10. Medicare and Medicaid

11. And if I might add, Teleophthalmololgy providing high level patient care consultation and education available offered to doctors in the developing world entirely free of cost

What has been the result of these changes over this half century? First of all, the doctor and the health care team have the resources to do a better job for their patients and they probably are doing just that. Evidence of this is that people are living longer and from my perspective seeing better. There is also a good chance that quality of life for our patients has improved.

Of note, while cataract surgery is so successful in the United States and other developed economies. Cataract remains the leading cause of blindness in the world with most of the18 million cataract blind in developing countries. In the US, the American Academy of Ophthalmology offers any American 65 years and older an eye examination from a member ophthalmologist and cataract surgery if indicated at NO COST. Of course, all of these people are covered by Medicare so this is primarily a way to make the process easier because it is already affordable.

All of the foregoing paints a pretty positive picture of what has been accomplished in the past 50 years, on my watch so to speak. But all is not upbeat, positive, and reason for optimism. What is wrong?

The answer is that many people see an extremely serious, virtually life and death problem facing us because THE HEALTH CARE SYSTEM in the United States is considered by many as being BROKEN!

What does the Health care system look like to one who has been in the system continuously for a full 50 years? I will share my view, but at the outset, state this disclaimer. I am not an expert in public health, health care financing, and certainly not politics. I am a participant, observer, and lately a consumer.

To start the main complaints I hear are:

1. **Health care costs too much and**

2. Health care is not "accessible" with the second problem likely a variation of the first and possibly with the understanding that accessible may be defined differently.

Some thoughts about why this has happened

1. **We all have more health care to choose from**: This includes new interventional procedures, new medicines, advanced diagnostics not dreamed of 50 years ago

2. Pressure from the consumer "ask your doctor if (you can fill in the blank) is right for you?" The public is bombarded with advertising urging them to find out if they would benefit from taking medicine to improve satisfaction in life , get stronger bones, clear their arteries, slow the progression of dementia in a loved one, and on and on.

3. There are more consumers at the higher "end". Americans are living longer. The number of seniors is increasing and this is the group who require the most medical care paid for mostly by the government in the form of Medicare. And for children who qualify, disabled Americans, and soon as many as 15 million of any age who are otherwise uninsured there is Medicaid a mostly state funded mandate that is the responsibility by state government that must balance the budget and can't print money. *All of this change is confounded by yet another thing that has occurred in the last half century and more. In 1900 33% of all deaths were in children under age 5 years. Now that number is less than 2%. This means more people and begs the question does it cost more to keep a child healthy than to bury him? These children grow up and live longer with a financial burden per capita at age 85 and older that is nearly 6 times that of age 50 to 54. The per capita burden at age 85 is 75% higher than at ages 75-79. An escalation of cost of simply surviving with aging compounded by the cost of prevention of further deterioration increases with age. Five years before the year of death the cost for individual health care is virtually the same as*

with all annual Medicare costs per capita. By two years before death, the cost rises about 60% and in the year of death the annual costs exceeds the average by more than four times. Further, the cost incurred in the last two years of life account for 40% of all Medicare expenditures. In 1900 deaths of people 65 years and older was 18%. Today this number is 75%. There is no denying that staying alive while growing old is expensive.

4. Defensive medicine: Doctors have a double whammy in this area. First they are concerned about being "second guessed" and even found negligent if they fail to order a test. Second, the younger doctor has studied or practiced in an environment of what could be called "over testing", and knows nothing else. There is a dying breed of doctors who remember making a diagnosis or ruling out disease without CT scan, MRI or coronary angiography. Even for this older "wiser" doctor, it is not acceptable to refuse a new expensive test and miss the diagnosis. I have never heard a patient say thank you for saving money.

5. Health care is a right (Some people call these entitlements): The country has already traveled quite far down that path. If you are over 65, through Medicare, your health care is more or less a right requiring some but not great financial input from the individual. If you are a child and your family has income below a certain level health care is available through Medicaid. If you are disabled at any age you can become eligible for Medicaid. And regardless of who you are, even if in the country illegally, health care can be obtained at no cost in an emergency room.

6. Priorities are important. Healthy young individuals are likely to put lots of other things ahead of paying for health care out of their discretionary funds. However they are pleased to receive health care benefits in their paycheck. We could consider people from the time they are off coverage on their parents insurance until the time they start a family to be in the "doughnut hole" of life. What do younger people elect to spend their money on? In 2007 250 Million cell phones were in service in the

U.S. The number of things we can spend money on instead of health insurance has increased tremendously in the past 50 years probably led by electronic communication and entertainment, and "eating out". . If you are young, perfectly healthy and likely to remain so, it is easy to understand why an IPod has it all over an insurance policy.

7. Life Style covers a wide range. Smoking was labeled as a health hazard by the surgeon general nearly 50 years ago but smoking remains widespread especially in the young. Americans are such voracious unhealthy overeaters that this a multibillion dollar" indigestion industry" has developed. The national Football League promotes a program pleading with children to exercise 60 minutes a day. Fifty years ago parents would plead with their children to break off their play to come in for dinner or to bed. It has been reported that 26% of those young men presenting for physical examination for military service fail for physical reasons. The government is active in this area with rules like no smoking in bars and no trans-fat in New York City. An interesting response to edicts like this begin with "outrage" and then settle into compliance. When the government makes a rule depriving freedom of action, the public gets used to it in time.

8. Leadership is as an increasingly important factor in the spectrum of health care. This should reflect the will of the people.

8. Medicare, Medicaid and the Doctor In the area of medical practice, a huge change took place in the mid 1960's, it was Medicare. The most visible change for the physician has been a coding system that rates complexity of an interaction and assigns a relative cost value to it. This system codes every diagnosis and treatment plan and grades the complexity and cost of care provided as low, medium, and high for purposes of reimbursement. These codes are a means for c*ontrolling virtually every aspect of the delivery of medical care. Every" provider"* (Formerly called a doctor) is paid the same enabling the "payer", often but not exclusively, the government to maintain some control over each unit of activity.

This leaves a variable, how many people will receive the services and how often can it be done. To add more stability for the payer it is further stated that the amount paid by the government is the maximum amount that can be charged for a given service. The doctor cannot charge more expecting the patient to pay out of pocket, but at the same time must send a bill to the patient for a co-pay in some cases. The doctor must comply with all of the rules to remain a Medicare provider while being either all in or all out. Since many areas of medicine deal only or primarily with patients over 65, nearly all doctors are enrolled as Medicare providers .In contrast many doctors who deal with children have opted out of Medicaid because they actually lose money on Medicaid patients. Others continue with Medicaid patients out of a sense of duty to provide care for those in need. While incomes of doctors have leveled off and even declined in the past decade, those in practice who I have talked to tend to be more annoyed with regulations than with income.

9. Should we in the United State look to other societies to see really good health care? This is an issue that deserves a careful look. There is a certain glamour associated with how the Scandinavian countries manage health care. Sweden, Norway, Denmark have a combined population of 19 M similar to New York State and much less than California at 36 M. The United States population is estimated at 308 M. Two states have a population larger than Norway and Sweden combined and there are more people in Indiana than in Denmark! Two of the Scandinavian countries already have universal health. Is social management easier in a smaller and more homogenous population? More of a concern is the way some people praise the "free for everyone" health care system as it is managed in Cuba, suggesting that many in Cuba are better off than many in the U.S. During six visits to Cuba between 1998 and 2004 I had the opportunity to observe first-hand the level of care in that country. It was at a very low level with inadequate facilities, lack of both diagnostic and surgical equipment, scarcity of medicine and doctors who were deprived of many educational opportunities. The level was so low that I had to carry out two return trips in the six weeks after my first visit bringing medical supplies and instruments to complete

the surgical schedule planned for me. This experience led to the establishment of a telemedicine consultation and education program for ophthalmologists in Cuba that continues today, 13 years later.

Beginning in 1985 I have visited 45 countries, most in the developing world, as a volunteer physician seeing patients in a clinical outpatient setting, teaching , and performing surgery in 15 countries. Beginning in 2000, after becoming emeritus at the IU School of Medicine, I have worked full time expanding the telemedicine program that started in Cuba For the last ten years we have worked directly with doctors exclusively in the developing world assisting with the diagnosis, treatment, and follow up wide variety of patients in more than 30 countries from Afghanistan to Vietnam.

You have heard my view of what was and what is now. What's Next? Your guess may be as good as mine, but here is my best guess..

1. The government will become increasingly involved in health care first controlling expenditures and then the actual practice leading to universal health care with just a few patients and providers opting out

2. Emphasis on prevention of disease and encouragement of healthier life styles will increase with combined government and public involvement

3. There will be a significant slowing of innovation and new discoveries as we concentrate on how to deliver methods already available to an increasing patient load. We have an example of this type of "new direction" with the reduction in the US space program.

4. Medical schools will have fewer applicants. The number of women in schools will probably not exceed the nearly 50% current levels. Entrance and graduation standards will go down. Simulation will play a bigger role in student education and schools will work toward lowering the cost of educating a student

5. More health care delivered by people who have intense but limited training leading to competence in specific areas. This will enable them to provide suitable but less expensive care. There are many examples including nurse anesthetists, nurse practitioners functioning in more independent roles, and a wide array of medical technicians, who have competence in a limited area.

6. There will be more "vanity" procedures requiring "self pay". That is likely result cutting the cost of procedures. An example of this already is refractive surgery that is priced well below the level at its introduction.

7. There will be more controls and restraints on the "quantity" of care provided to older individuals. It will not be called rationing but it will look like that to those affected.

8. Many health care providers "doctors" other than the MD who has11 to 16 years of training will increase efforts to expand their scope of practice with promises of providing the "same" care at a lower price.

9. Information technology will be utilized to compile and make available patient records so that a lifetime of care will be readily available to all patients and their physicians.

10. Telemedicine (medicine at a distance) will make the highest level of medical care available to just about anybody regardless of their location essentially providing triage so that patients are more likely to receive the right care form the right provider lowering costs by establishing centers of excellence.

11. Each of you can compile your own list maybe with some agreement and maybe taking an entirely different tack. I guess that's what guessing is all about.

Thank you