

HEART ATTACK TREATMENT — THEN AND NOW

Molly M

Not long after I opened my medical practice in northern New Jersey fifty years ago, one of my favorite patients was a cheerful woman by the name of Molly M. She may have been in her 70s but seemed very old to a 30 something young doctor. One day Molly came in for her annual “complete examination” and afterward, when I told her that everything was normal, she confided that when she was much younger - perhaps in her thirties - she’d suffered a heart attack. It would have been unusual for a woman that young having a heart attack and having just checked her normal electrocardiogram, I was surprised and asked for more detail. She said that when she’d developed some chest pain she went to her doctor who examined her and, like me, assured her that she was fine. I knew that her former physician, Dr. Samuel Alexander, had practiced between 1911 and 1952, was well respected by colleagues and beloved by patients. As Molly related the story, when the doctor reassured her that all was well, she’d replied, “Thank goodness. I thought that I had a heart attack.” The doctor gave her a long look and then said, “Let me listen again.” He applied his stethoscope (through her clothing) listened carefully and said, “You know, I believe that you were right. You did have a heart attack. You must go home and stay in bed for six weeks.” That encounter must have taken place sometime during the 1930s when doctor’s “orders” were taken seriously so Molly did what she was told and now, so many years later, she was convinced that Dr. Alexander had saved her life! After all, she’d recovered hadn’t she? I replied, “Yes, he must have been a very wise doctor.” But I snickered to myself that was a great example of the so-called “art of medicine” that was all the old-timers had to offer. Perhaps she may have thought, “They don’t make them like they used to.”

Louise B

At about the same time another older woman presented who had a different kind of tale to tell. In June 1941 she’d visited a friend at Holy Name Hospital in Teaneck who had a real heart attack and whose subsequent death was attributed to a three-week delay in hospitalization. Her physician confirmed that there was a shortage of beds in Bergen County. Why? Because most beds in the county’s three acute-care hospitals were filled with patients recuperating from heart attacks, the conventional length of stay being six weeks. Louise was outraged and became an annoying gadfly, visiting local politicians and doctors and organizing a woman’s auxiliary to raise funds for a new hospital. She gathered enthusiastic support and although the onset of World War II caused a temporary setback, afterward the availability of Federal funds plus local contributions resulted in an 80 bed facility Pascack Valley Hospital which opened in 1959 and that’s where I cared for my patients throughout my long career.

ARMCHAIR TREATMENT

Before my time, medical tradition held that patients who sustained heart attacks (more properly called myocardial infarctions) were confined to strict bed rest for four to six weeks. That's why Louise B's friend couldn't find an empty bed. Sitting in a chair was prohibited and patients were not allowed to turn from side to side without assistance. During the first week they were fed; moving their bowels or urinating required a bedpan; some physicians prohibited their patients from listening to the radio or reading a newspaper and visits by family members were strictly limited. Patients were heavily sedated, there was a sense of hopelessness and depression and about one in three died, many from blood clots migrating to the lungs. Yet physicians convinced themselves that all this was the price of survival - and physician's judgments were trusted.

But by the 1950s cardiology practice was beginning to change. Dr. Bernard Lown, then a cardiology fellow at Peter Bent Brigham Hospital under the mentorship of Dr. Samuel Levine, suggested to his boss that they experiment by permitting newly admitted patients after heart attacks to spend increasing amounts of time in a chair starting on the third hospital day. Writing nearly six decades later, Dr. Lown recalled the initial reaction:

Although I knew the project would be a chore, I didn't expect it to be an act of martyrdom. Little did I realize that violating firmly held traditions can raise a tsunami of opposition. The idea of moving critically ill patients into a chair was regarded as off-the-wall. Initially the house staff refused to cooperate and strenuously resisted getting patients out of bed. They accused me of planning to commit crimes not unlike those of the heinous Nazi experimentations in concentration camps. Arriving on the medical ward one morning, I was greeted by interns and residents lined up with hands stretched out in a Nazi salute and a "heil Hitler!" shouted in unison.

(Lown, B. *The Lost Art of Healing*, Ballantine Books 1999)

Despite dire predictions of serious complications, Lown and Levine's patients did remarkably well. Compared with recumbent patients they needed fewer narcotics, sedatives or hypnotics; moods improved and they began to harangue their doctors to let them walk and pressed for early discharge. Their radical "Armchair Treatment" was published in 1952 (*JAMA*, 148: 1365) and within a few years bed pans were abandoned, walking was permitted earlier, hospital mortality fell by about a third and the period of hospitalization was cut in half. Bed rest had seemed a logical treatment to reduce the burden on the damaged heart. (Yet such simplistic reasoning also has been

responsible for blood letting, X-ray treatment of peptic ulcers and lobotomies for the mentally ill.⁰ Lown quoted the theologian Reinhold Niebuhr who wrote, "We mean well and do ill, and justify our ill-doing by our well-meaning." Dr. Lown observed that when good answers are unavailable, bad answers may replace them:

When a new paradigm takes hold in medicine, its acceptance is extraordinarily rapid. Few acknowledge that they once adhered to a discarded method. This was succinctly captured by the German philosopher Schopenhauer. He maintained that all truth passes through three stages; first, it is ridiculed; second, it is silently opposed; and finally, it is accepted as having always been self-evident.

Nevertheless, when President Eisenhower (a four pack a day smoker) had a heart attack in 1955 at age 64, his doctors consulted Harvard's Paul Dudley White who favored his colleague Sam Levine's chair rest treatment. Soon after Ike was lifted into a chair there was a recurrence of chest discomfort, the approach was abandoned and he was returned to bed. At least Eisenhower took the advice of Dr. White, who famously advocated a vigorous life style, so the president was spared a life of invalidism.

LENGTH OF STAY

In 1974 my partner and I published a review article about the treatment of acute myocardial infarction (*Medical Clinics of North America*, March, 1974) in which we noted that responses to a questionnaire sent to 2,206 American physicians indicated that the median hospital stay for all patients after uncomplicated myocardial infarction was 21 days with a median time to return to work of 2 to 4 months. But we also cited a more recent prospective study which found that the duration of bed rest after infarction prescribed by various physicians varied widely from 7.4 to 15.2 days. No clear reasons for this disparity were detected and we concluded:

It is likely that many patients are kept in bed for excessive and arbitrary periods of time that are not dictated by known facts about the course of the disease....many reports have advised reduction of the duration of bed rest ...and it is our opinion that in patients with uncomplicated infarction, permission to sit in a chair may be granted during the first week. Chair time is gradually increased thereafter and followed by progressive ambulation, with hospital discharge generally between 2 and 3 weeks.

In 1983 I published another article with what I thought was a bold declarative title: "Optimum length of hospitalization for uncomplicated myocardial infarction is *ten* days." (*J. Med. Soc. New Jersey* 80: 421, 1983.) However, throughout the 1980s and

90s and into the 21st century studies from around the world showed a progressive decline in length of hospitalization. By 2003 a report concluded that extending hospitalization beyond day 3 was of negligible benefit but added much cost. By 2011 a study of more than 1,500 patients with a first heart attack found that the average LOS was down to 2.9 days. Indeed it concluded that discharge of low-risk patients “at day 2 or sooner” in low-risk patients was the new standard of good care. (*Amer J. Cardiol.* Feb 15, 2018) Quite a change from four to six weeks in bed!

VALUE VS. VOLUME

The dynamic between doctors and patients used to be highly personal - very different than today’s depersonalized business oriented culture. The current state of health care economics is based on the still unproved premise that unnecessary hospitalization can be avoided at great cost saving without sacrificing efficacy or safety.

Let’s start by considering some statistics from 2013 - which reflected the situation just before the Affordable Care Act was implemented. Although total health care expenditures have maintained a relatively stable share of GDP, currently a little more than 18%, the largest single component is hospital care. Although only about 7% of the population are hospitalized each year, the mean cost for each stay is more than \$18,000. Payment for more than 36 million hospitalizations was Medicare 39%, Private Insurance 30%, Medicaid 21%, Uninsured/Other 10%. The challenge was how to incentivize providers (both doctors and hospitals) to maintain or improve quality of care while reducing systemic costs. This led to experiments with alternate payment models, including bundling everything into a single package that would incentivize economy and efficiency. The industry’s new mantra became “value over volume.” But true value is in the eye of the beholder - patient, doctor, hospital, insurer, pharmaceutical company, government - who may not see eye to eye.

A recent study from Duke University (*JAMA* 2/20/18) evaluated the administrative cost of complying with insurance-related activities. To use just one example, for a single primary care office visit the estimated cost for billing and insurance-related expenses was \$20 - the figures for inpatient services were exponentially higher. It cost a typical primary care practitioner \$100,000 a year merely to get paid for their work. Despite the highly touted electronic medical records that presumably reduce documentation requirements, administrative time and cost for billing has increased and frustration associated with the electronic medical record is one of the major causes of physician “burn out” and early retirement.

THE FINE ART OF MEDICAL CODING

Now let's consider the arcane world of medical billing. If your mind is already spinning, try to understand the difference between DRG, ICD-10 and CPT coding. Don't bother. Hospitals and offices employ squads of professional coders in order to squeeze every penny they can out of each patient service. There's a constant tug-of-war between providers and payers who negotiate, deny, justify and compromise. The system invites shading the truth, yes, it's all based on what the doctor's notes say, but then the pros get to work - "up-coding" or using "strategic billing."

Again, let's use chest pain as an example. Every year more than 750,000 Americans suffer a heart attack. Acute coronary artery disease (including myocardial infarction and coronary atherosclerosis) is among the most expensive hospital conditions. In 2013 they accounted for 3% of admissions and cost more than \$22 billion (MI \$12 billion, ASHD \$9 billion). Other causes of chest pain were far down the list. Until relatively recently, when a patient developed acute chest pain and heart disease was considered to be a possible cause, the default reaction was to hospitalize for observation until a myocardial infarction was ruled in or out. There was no agonizing about details, r/o MI was enough. Reimbursement both to the doctor and the hospital was based on what services were provided and how long the patient remained in house - so-called "fee-for-service." That was easy and understandable, but it contributed to rising costs and was a perverse invitation to game the system - just stay a few more days to be sure and we'll do a few more tests. The patient rarely minded - better to be safe than sorry and, after all, someone else was paying.

However, there is often a gray area when distinguishing between those well enough to go home but not sick enough to be admitted. Because insurers and Medicare/Medicaid (CMS) were concerned that under the old payment system doctors and hospitals were abusing the option, the rules of play and pay have changed. Now when a patient presents to an emergency room with chest pain of uncertain cause, they may be admitted to a holding unit for two midnights where appropriate tests are performed to rule out an incipient heart attack. However, for patients who are in this diagnostic limbo, Medicare will reimburse only as an *outpatient* service, meaning that they might be responsible for sizable co-payments and for whatever the hospital charges for medications (hugely inflated) that they usually take at home (they can't bring their own.)

Some would argue that this is a good thing because unless patients have "skin in the game" they will always choose the more expensive option. Hospitals have developed their own strategies about how to compensate for new regulations and either employ or

contract with coding specialists to craft the most favorable combination of diagnostic codes - what's called "strategic coding." However, in the ensuing tug-of-war with CMS and insurers, the physician's clinical judgement and the patient's best interest, as they understand it, are likely to get lost - or so says this medical dinosaur.

Starting in 2000, CMS got smart and changed the financial incentives. They began a so called Prospective Payment where hospitals received a predetermined fixed price for the entire hospitalization based on the national average of resources expended for the same condition in the same age group. It was based on some 600 DRGs - diagnosis related groups. No longer were hospitals paid more the longer patients stayed and the more things they did to them.

For acute myocardial infarctions there are six DRGs depending on whether or not the patient died in the hospital or complications. The DRG basic DRG is 280 for which the average payment to the hospital is slightly over \$10,000. Just to give you an idea let's compare the 2016 data for our two local acute hospitals for DRG 280 an uncomplicated myocardial infarction that did not require invasive surgery.

	<u>Hospital Charge (avg)</u>	<u>Total Received</u>	<u>Medicare Payment</u>
Good Sam (49 cases)	\$70,021	11,937	11,152
Nyack (27 cases)	\$63,001	12,287	11,480

Discrepancies in charges for the same procedure in different areas of the country and even between neighboring hospitals is common and almost inexplicable. Countless studies but no clear reason - true sometimes was fraudulent billing but that can't account for all the differences. But without delving too deeply into how these numbers were derived which is virtually impossible, note that hospital charges far exceeded what Medicare considered to be reasonable - in this case by a factor of five or six fold. Incidentally, average cost for comparable condition in Canada is 40% what it is here - \$6,181 vs 15,631.

Patients experiencing an emergency are particularly at risk of landing in an out-of-network hospital and, increasingly, people are learning to their dismay that their local community hospital may no longer accept their insurance. Currently Nyack Hospital is one of eleven acute care hospitals in Montefiore's management system which recently was dropped from Aetna's network because the Montefiore and Aetna were unable to agree upon what constitutes a reasonable fee. Although several states (including New

York) mandate protections to shield consumers from surprise bills, particularly for emergency care, these safeguards generally don't apply if they have employer health benefits.

How hospital bills derived is a mystery beyond the comprehension of most well-educated people? But what if a patient with employment provided health benefits is treated at Nyack Hospital and their insurance is provided by Aetna? They can't be turned away from the ER - although they may be transferred out ASAP. Would they be subject to the same shock as the Texas school teacher described above? Perhaps some accommodation might be made - or not. Sometimes it may depend on how aggressively they contest the bill. But Is this a rational system?

In April 2017 a 44 year old high school history teacher in Texas developed severe chest pain while at home and a neighbor rushed him the nearby emergency room of a nearby hospital which wasn't in the school district's health plan which was provided by Aetna. An acute myocardial infarction was diagnosed and emergency surgery performed that implanted four stents. He worried about whether the hospital would accept his insurance and was reassured that there would be no problem. Then the bills came. The total bill for a four-day hospital stay, most of the time in an ICU, was \$164,941 including \$42,944 for four stents and \$10,920 for room charges. His insurer paid \$55,840 and the hospital billed the patient the unpaid balance of \$108,951 which is twice his annual pay as a teacher. Independent estimates suggests that an appropriate charge would be about \$36,800.

Hospital CFOs are scared of mega mergers such as Walmart/Humana or CVS/Aetna which are designed to shift to cheaper care at clinics and pharmacies which would cut into spending on hospital services. Feeling the pressure, most hospitals are investing in expanded outpatient services but throughout the country hospitals are cutting back staff, many are going bankrupt and not just vulnerable rural hospitals but prestige such as NY Presbyterian and the Cleveland Clinic. Their revenues may be up but can't keep up with expenses. A recent study (8/18) found 450 hospitals of 6000 US hospitals at risk of closure - that's about 15% of all US hospitals.

CONCLUSION

Obviously there've been tremendous advances in medical knowledge and treatment with reductions in mortality and greater longevity since the days of Molly M and Louise B. I remain nostalgic for an era when doctor-patient relationships were more personal and the practice of medicine was less bureaucratic and business oriented.

