Improving Cardiac Care at Parkland

Lessons Learned from the Quality Improvement Front Line

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This is to acknowledge that Sandeep Das, MD, MPH has disclosed that he does not have any financial interests or other relationships with commercial concerns related directly or indirectly to this program. Dr. Das will not be discussing off-label uses in his presentation.

Purpose and Overview

The purpose of this presentation is to enable the practicing clinician to better understand the practical impact of efforts to measure and improve health care quality, using illustrative examples from Parkland's Cardiology Quality Improvement Group. This presentation will define quality in the health care context, explain the relevance of quality improvement to modern medicine, and describe the challenges inherent to improving quality. Using the Parkland Myocardial Infarction Quality Initiative as an example, this presentation will describe how continuous quality improvement is applied to improve process of care metrics. Next, using the Parkland Heart Failure Readmission Reduction Initiative, this presentation will describe the strengths and weaknesses of targeting readmissions as an outcome metric, and the quality improvement financial drivers that influence practice in this area. A detailed walk though of how data are used in the context of understanding the way we provide heart failure care at Parkland will then introduce some of the ongoing collaborations aimed at improving heart failure care at Parkland. Finally, the ideal quality improvement leader of the future will be described, along with current efforts within the cardiology Division and the Internal Medicine Residency Training Program to develop and mentor future leaders in quality improvement.

Objectives

1. To describe how quality of care in Cardiology is currently being measured and used.
2. To describe a continuous quality improvement program aimed at improving process of care measures for patients with myocardial infarction.
3. To describe the complexity of heart failure readmissions both conceptually as a quality of care outcome metric and practically as a clinical target.

Biosketch

Dr. Das is an Associate Professor of Internal Medicine in the Cardiology Division at UT Southwestern, and has been a member of the faculty since 2007. He received his undergraduate degree with honors from Wesleyan University in Middletown, Connecticut, graduating in the top 1% of his class. He went on to graduate from Hahnemann University School of Medicine in Philadelphia, where he was elected to membership in Alpha Omega Alpha, the national medical honor society. Dr. Das did his Internal Medicine residency at the University of North Carolina in Chapel Hill, where he also earned his Master of Public Health degree. He then came to Dallas, and after completing his cardiology fellowship at UT Southwestern, he stayed to join the Cardiology faculty. In his role as Associate Chief Quality and Safety Officer for the Parkland Health and Hospital System, he is committed to improving cardiovascular outcomes, safety, and quality of care for the urban poor population served by Parkland. Dr. Das is also formally trained in epidemiology and has been a productive researcher. His 2012 paper on outcomes and process of care after acute myocardial infarction for the extremely obese received the Parmley Award as the top paper by a young investigator in the Journal of American Cardiology. He is able to leverage this expertise in epidemiology and clinical outcomes research to marry the practical clinical quality efforts at parkland and a rigorous scientific approach to hypothesis-driven research in order to improve patient care and outcomes.

What is quality and why does it matter?

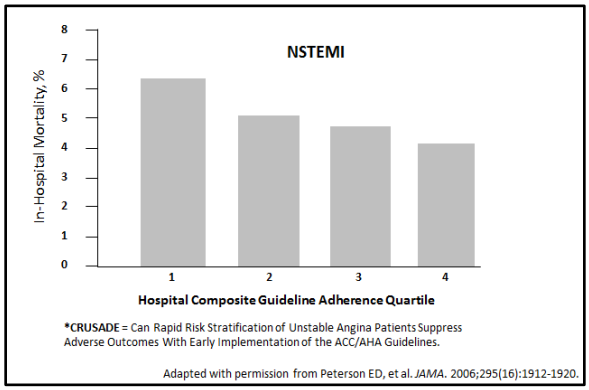
The famous quotation from Justice Potter Stewart's decision in *Jacobellis v Ohio*, 1964: "I shall not today attempt to define…and perhaps I could never succeed in intelligibly doing so. But I know it when I see it" was not referring to health care quality, but it could easily have been. The Institute of Medicine in its landmark 2001 report, Crossing the Quality Chasm, defined health care quality as "The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge." The Center for Medicare and Medicaid Services (CMS) went on to come up with a more concise and elegant restatement in its 2007 roadmap to quality: "The right care for every person every time."

These working definitions have been created by academics and officials and may be abstract to the practicing clinician. However, the clinician has an empiric reason to provide optimal care. First and foremost, improving patient outcomes is the right thing to do. But there are other ways quality impacts the practicing clinician. In an era of increasing heath care costs, there are enormous societal and political pressures to reform health care delivery. To date, the major drivers of reform have been political. Physicians were late to the table and need to become fully engaged quickly and effectively if we want a say as to how medicine will look in the future. In addition, physicians have an opportunity to attempt to properly align financial incentives with what we see as worthwhile goals for patients. Finally, in the modern era there is increasing public awareness of purported health care quality data.

The Truth is out There: Measuring Health Care Quality

A large amount of descriptive data on hospitals and physicians is already being collected and reported. The dominant influence comes from the Center for Medicare & Medicaid Services (CMS). CMS via its hospital compare web site reports process and outcome data for Medicare patients at US hospitals. CMS also collects hospital level core measure data which impacts reimbursement significantly. In addition to the government, private groups are also in the business of collecting and reporting health care quality data. The Leapfrog Group is a consortium of payers such as large self-insured employers and insurance companies. Seeing a need for better data on quality in order to inform the business case for where to spend health care dollars, they began collecting and publicly reporting data on individual hospitals. Medical specialty societies are also firmly in the picture, via large national registries. In cardiology alone, there are registries for myocardial infarction (MI), implantable defibrillators, cardiac catheterization and coronary intervention, percutaneous valves, carotid revascularization, congenital heart disease, outpatient care, heart failure, and cardiothoracic surgery. These are generally voluntary, and allow hospitals to benchmark their care nationally, but require significant infrastructure support and commitment from institutions to be used effectively. Most of the tracked measures are structural or process-oriented, but there are reports, (1) admittedly subject to confounding, showing an association between scores on these metrics and patient outcomes (**Figure 1**).

Figure 1. The association between hospital guideline adherence and in-hospital mortality from the Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes With Early Implementation of the ACC/AHA Guidelines (CRUSADE) registry.



In 2014, CMS began using mortality rates for three conditions as a measure for determining hospital payments through its Value-Base Purchasing program. (2) The three conditions were acute myocardial infarction, congestive heart failure, and pneumonia, which together account for 13 percent of all elderly hospitalizations. (3) High performance on these three conditions closely predicted mortality rates across other medical and surgical conditions. (4) There are major challenges in implementing successful risk adjustment in order to correct crude mortality and readmission rates for patient severity of illness. (5)

Challenges in Improving Quality: Changing How We Think

There are multiple roadblocks to improving health care quality. Perhaps most important is the dependence on physicians to drive change. Conventional wisdom in the absence of data can be a powerful influence, and these highly skilled professionals may be difficult to engage in QI efforts if they believe the numbers do not reflect things that are important. Without buy-in from physicians, there is no substantive prospect for improvement, so CMS has determined buy-in can be achieved secondarily through strong financial incentives. Next, American medicine tends toward a culture of blame, with an emphasis on tracking individual failure and responding to it by pressuring individuals to improve their own practice. There is also a belief that some errors are unavoidable, since individuals are fallible. Another challenge to improving quality in the US is the medical-legal aspect, which can adversely impact ideals such as disclosure and transparency, and can lead to defensive medicine where providers practice based on fear of litigation rather than what is best for their patients. There is also a significant cost associated with quality improvement. Accurately measuring quality of care is expensive. Cheaper solutions, for example relying solely on electronically abstracted data, can easily lead to erroneous conclusions. Individually collected or adjudicated data are potentially much more reliable, but are also much more difficult and expensive to obtain. A good example of this is seen in Parkland's efforts at using the National Cardiovascular Data Registry's (NCDR®) Acute Coronary Treatment and Intervention Outcomes Network Registry-Get With the Guidelines (ACTION Registry®-GWTG™)(6). Our data were initially obtained without the involvement of cardiologists or other physicians. These initial data incorrectly appeared to show Parkland as one of the worst performing hospitals in the nation. Once cardiology became involved, further investigation revealed that the automated extraction had been

capturing the wrong patients. Once this was rectified, our numbers were revealed to be similar to comparable hospitals across the US, and could then be used as our means of measuring improvement. The cost of improving quality is not easy to calculate, however, with very low direct expenditure on clinical QI likely exposing the hospital to excess risk of failure resulting in harm to patients or CMS financial penalties. As expenditures on QI efforts increase, the cost of high-intensity interventions may not be justifiable financially, although it is important to differentiate cost impacts in monetary terms from impacts on patient health outcomes. Finally, in its appropriate role as a watchdog for the public interest, the media pays close attention, especially to hospitals like Parkland which play such a unique role in the local community. However, the media may not have a complete understanding and tends to highlight the exciting rather than the mundane, so reports of hospital practice may pick selected examples rather that give a distorted picture of care. This can have a harmful effect on practice if hospital leadership is overly influenced by aversion to bad publicity.

Academic medical centers have additional specific challenges in balancing multiple missions: research education, and clinical care. Managing trainees specifically involves trade-offs between the education mission, where allowing trainees more autonomy is essential to their development into independent practitioners, and the clinical care mission, where trainees, through their relative lack of experience, may be more likely to make errors compared to more senior clinicians. Other relevant factors in the modern era of graduate medical education such as the need to limit resident duty hours and the corresponding increase in patient handoffs and fragmentation of care can adversely impact quality. Finally, hospitals like Parkland deal with high complexity patients, both in terms of their medical issues and in terms of psychological or social factors.

The traditional model of the physician quality improvement (QI) leader was the master clinician, who modeled ideal behavior through his or her own practice, thereby stimulating others to improve by example. This model is being overturned by the influence of paradigms which have been brought over from other industries that deal with large size, high complexity, time pressure, and high risk but that are unwilling to tolerate failure. Examples include air traffic control or nuclear power. The new paradigm of QI involves creating resilient systems that expect individuals to make mistakes and are built not to allow mistakes to propagate through to actual failure. While high performing hospitals spend some effort on fall-outs as they occur, they focus heavily on developing predictable processes that assure 100% compliance as soon as measures are identified as relevant. The new leaders are no longer recruited solely from the best clinicians. Rather they are clinicians who are familiar with collecting and analyzing high quality data. The new leader also needs to build collaborative partnerships, since programs are now so complex that no one individual can manage all aspects. Quality and safety must be addressed as system properties and must adopt system-level approaches. In sort, to be truly successful, hospitals must be transformed and their culture recreated.

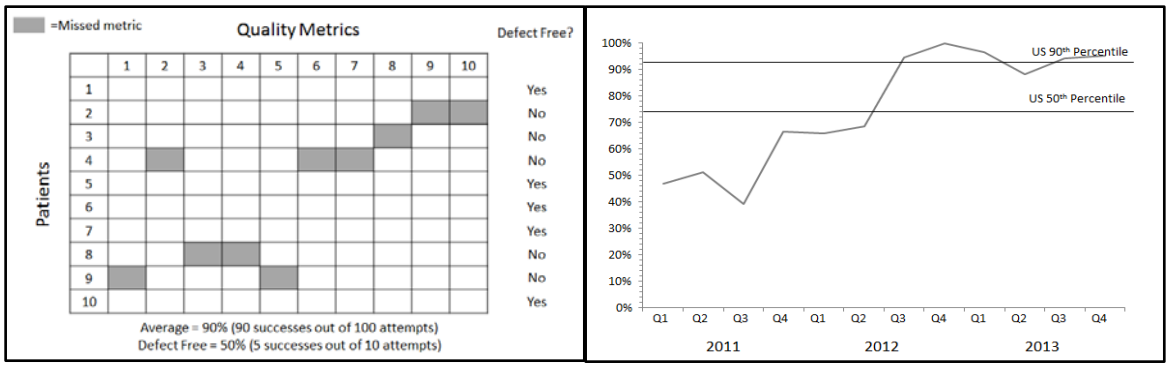
Improving Process Measures: Parkland MI Quality Initiative

Many conceptual models have been adapted from the quality world to medicine, such as “lean”, “six sigma”, “Define, Measure, Analyze, Improve and Control (DMAIC)”, or “Plan Do Study Act (PDSA)”. Applying the PDSA conceptual framework to the Parkland MI initiative, we began by gathering a

multidisciplinary team and formulating a plan to improve MI process of care metrics (Plan). We then implemented an EMR-based intervention (Do) and monitored the response using data from the NCDR ACTION registry (Study). Based on what we learned from our intervention, we identified an area for further improvement: improving the fidelity of the coding diagnosis of MI and are developing the next round of intervention (Act).

Patients admitted with acute myocardial infarction (MI) may benefit from electronic medical record (EMR) based interventions or checklists designed to support treatment as outlined in national guidelines. (7-12) All patients hospitalized with the international classification of disease (ICD-9) code of STEMI or NSTEMI at Parkland are included in the registry; those with demand cardiomyocyte necrosis secondary to other conditions in which MI guideline based care would be inappropriate are excluded. All patient data was collected by trained personnel using individual chart review. A multidisciplinary team of nurses, pharmacists, echocardiogram sonographers, information technology (IT) programmer/analysts, and cardiologists met to design an EMR intervention focused on providing guideline indicated care. Aggregate summary data are reported, benchmarked to all US hospitals and to comparable hospitals. The EMR intervention went live with the new academic year at the start of Q3 2012. After implementation, monthly reminders to encourage use were provided for the medical trainees and staff. Measures of quality were compared before and after the intervention; significant improvements were observed in left ventricular function assessment before discharge (71.3% vs. 96.8%, P<0.001), smoking cessation counseling (90.0% vs. 100%, P=0.017), cardiac rehabilitation referrals (72.0% vs. 100%, P<0.001), serum cholesterol assessment (85.1% vs. 93.6%, P=0.034), excessive initial unfractionated heparin use (69.0% vs. 17.5%, P<0.001), and P_2Y_{12} receptor antagonist prescription in medically managed patients (50.0% vs. 86.7%, P=0.034). This resulted in an improved overall acute MI ACTION Registry®-GWTG™ composite score (90.3% vs. 98.6%) and rate of defect free care (53.1% vs. 90.4%). Note that the MI composite is an average across care opportunities, while defect free care is a much more conservative patient-level metric (**Figure 2**).

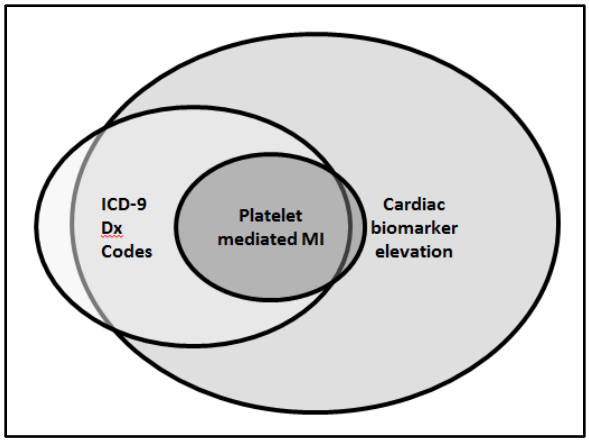
Figure 2. (Left panel) Defect free care compared with the average (composite) quality of care across a hypothetical 10-patient sample. **(Right panel)** Defect free care over time at Parkland pre- and post-intervention (intervention occurred between Q2 and Q3 2012.



Our experience also demonstrated that order set availability did not translate into automatic physician utilization. At Parkland, the electronic ordering system contained hundreds of order sets, the majority of which were rarely used. As a teaching hospital, a continuous turnover of trainees created a challenge, and frequent reminders to admitting physicians of order set availability and encouragement of their use was required. In patients admitted with acute MI, the use of an EMR based intervention significantly improved adherence to national guidelines and MI process based metrics, at Parkland. One limitation of any study involving quality improvement metrics is that evidence of a relationship with clinical outcomes is not clear. Some studies have demonstrated improved clinical outcomes in hospitals more adherent to guideline based care. (13-15) However, others have reported differential exclusion of patients from registries that may imply an attempt to manipulate the result. (16) Although we cannot confirm a benefit with regard to clinical outcomes, our single intervention was inexpensive, educational, and effective on process measures, making the disadvantages of implementing such a measure low. Further study of the impact of these types of interventions on clinical outcomes is needed.

One thing we discovered as part of this process was that the diagnosis of MI is not straightforward. Although elevation of cardiac enzymes is a necessary component of the diagnosis, not all cases of troponin elevation indicate a platelet mediated ACS event (**Figure 3**).

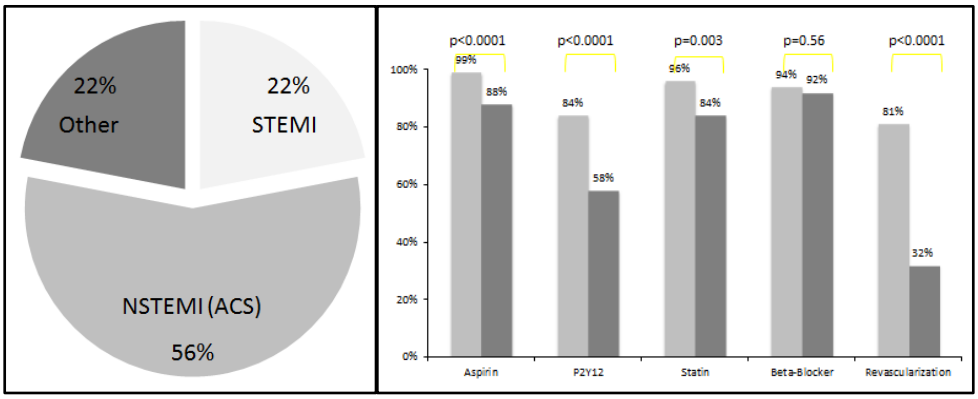
Figure 3. Venn diagram of ICD-9 MI codes, cardiac biomarker elevation, and true platelet mediated MI



Initial strategies at Parkland begun without the involvement of physician champions or cardiology used a broad ICD-9 code based definition of MI. Even when the relevant ICD-9 codes were narrowed down to coded MI, there were still residual problems. MI in the clinical sense differs from MI in the CMS/coding definition. The challenge was how to handle cases of troponin elevation that are not consistent with acute coronary syndrome (ACS). This includes things like stable chronic low-level troponin elevation, such as that seen in LVH and CKD. It also includes more classic rise and fall patterns of troponin that indicate some level of cardiomyocyte necrosis but do not indicate platelet mediated ACS. Examples of this include myocarditis or supply/demand mismatch due to high demand states such as sepsis or malignant hypertension in the absence of acute platelet-mediated coronary event.

Discrepancies exist between the clinical and coding diagnoses of acute myocardial infarction. Not all coded MI encounters are clinically considered MI, in fact, over 20% of coded MI at PMH in 2013 were not clinically considered MI (**Figure 4**). Among those patients with a coding diagnosis of MI, those with clinically suspected ACS appropriately got different care, with fewer than half of the non-ACS patients coded as MI receiving revascularization compared with most of the true ACS patients (81% vs 32%, p<0.0001) (**Figure 4**). Unfortunately, since quality metrics like CMS core measures are based on coded diagnoses, these patients who received clinically appropriate care in the absence of ACS were technically deemed to be quality failures in terms of process of care measures for MI, with corresponding impacts on the hospital through public reporting and value-based purchasing (VBP). Although the sample size was too small to demonstrate differences with statistical power, it is likely that patients who are coded as an MI without ACS differ from those with ACS, for example by having more significant comorbidities.

Figure 4. (**Left panel**) Proportion of ICD-9 coded MI by clinical adjudication. (**Right panel**) Rates of MI guideline based care provided to patients with (light gray) and without (dark gray) ACS.



The causes of the discrepancy between clinicians and coders are varied. Perhaps the dominant contribution comes from inaccurate or imprecise documentation. Although many clinicians are unaware of this, the coders are limited very strictly in how they are required to code based on clinician documentation and they are expressly forbidden from inferring (**Table 1**), for example from lab results or results of invasive testing. Often clinicians write diagnoses that are medically correct and easily understood, but which the coders are prohibited from abstracting correctly, examples include “HFPEF” where CMS requires the older “diastolic” terminology, and “Type 2 MI” when referring to non-ACS myocardial injury, where CMS requires this code be mapped to the same code as true ACS and where the less intuitive to clinicians diagnosis of “demand ischemia” would allow the coders to abstract more in line with the clinicians’ intent.

Table 1. Comparison of clinician's intent with required coding diagnosis for MI and HF

What you write	Coder must code	What you might have meant
Type 2 NSTEMI	Acute MI	Demand Ischemia
Unstable Angina	Intermediate Coronary Syndrome	Chest pain Demand Ischemia Acute MI
+ troponin	Abnormal Lab Value	Demand Ischemia Acute MI (ACS)
HFpEF	Unspecified Heart Failure	Acute or Chronic Diastolic Heart Failure
EF 20%	Cannot be coded	Acute or Chronic Systolic Heart Failure

There are also common examples of inaccurate documentation, and perhaps the greatest culprits are "copy forward" progress notes, where the documentation does not evolve to reflect changes in physician understanding of a case. There are also tricky issues with language, for example a "rule out MI" must be followed by the phrase "MI has been ruled out" in order to not be coded as ACS, where clinical practice sometimes deals with this situation by simply dropping mention of MI. There is also a conflict with the educational mission, where trainees are encouraged to describe a broad differential to demonstrate the robustness of their underlying knowledge base, but then many elements are never explicitly mentioned as "ruled out" and thus may end up viable coding diagnoses. The practical solution is to make sure that clinicians understand how coders will interpret their documentation, to encourage more precise language, and to make sure that excluded diagnoses and contraindicated treatments are described explicitly. Our next phase MI initiative involves improving this aspect of documentation. Our recently released intervention is an EPIC NoteWriter template that specifies language, allowing increased accuracy of diagnosis, Capture of relevant comorbidities and complications, which in turn drive severity of illness, and risk of mortality, and capture relevant process metrics.

Improving Outcomes: Heart Failure Readmission Reduction Initiative

Due to the financial incentives of the CMS VBP program, rehospitalization within 30 days after a hospitalization for heart failure has emerged as one of the most important current quality metrics. (17) Patients with heart-failure (HF) have a high rate of post-discharge events, with hospitalization and/or mortality affecting approximately 33% of patients within 90 days. (18) However, whether an isolated improvement in readmissions results in benefit or harm to patients is unknown. In the most basic sense, hospitalization is treatment not an outcome. (19, 20) Using hospitalization in the sense CMS does is using the fact that someone is re-hospitalized as evidence of a worsened clinical outcome. However, it is also reasonable to see readmission as a marker for the underlying substrate. End stage heart failure patients or those with major comorbidities or impairments of social or psychological function are likely going to be admitted more often, regardless of how good the care at the index hospitalization is. In fact,

a paradoxical relationship has been reported between readmission rates and mortality, with the "best" hospitals in terms of HF mortality having relatively high readmission rates (**Table 2**).

Table 2. Comparison of HF mortality and readmissions at hospitals included vs excluded from the *U.S. News Best Hospitals*.

30 Day Mortality Rate			
	U.S. News Best Hospitals	The Rest	P-Value
AMI	11.4%	21.2%	<0.001
CHF	8.1%	12.0%	<0.001

30 Day Readmission Rate			
	U.S. News Best Hospitals	The Rest	P-Value
AMI	26.3%	24.9%	0.47
CHF	30.9%	26.5%	<0.001

To some extent these hospitals may be the victim of their own success, as it is possible we are seeing the impact of the sickest patients. If they survive the index hospitalization, then the hospital has low mortality and high readmission, while if they die during the index hospitalization, the reverse is true. Socioeconomic status (SES) has also been shown to relate to readmissions and to readmission penalties. If low SES patients can be expected to have higher readmission rates than high SES patients, then hospitals that care for a disproportionate share of lower SES patients will perform worse on measures that don't explicitly account for SES, education, or the other factors that accompany it. Even accepting readmission as a metric, CMS uses all-cause readmission which is further problematic, because not all readmissions are modifiable.

Regardless of potential problems with readmissions as a metric, the financial reality is that the CMS Readmission Penalty Program is expanding. Current potential financial impact to PMH is impressive. Up to 3% of total Medicare Fee for Service (FFS) payments (~$1.8M) are potentially at risk through CMS disease-specific targets for HF, MI, pneumonia, COPD and total hip and knee replacement. In addition, up to 2% of total Medicaid FFS payments (~$2M) are at risk through the Potentially Preventable Readmissions program. Those numbers pale, however, compared with the new federal 1115 Waiver program which puts ~$50M at-risk through FY16 based on overall all-cause readmissions. These penalties are especially troubling to Parkland because of the emerging body of literature suggesting that minority-serving hospitals tend to have higher admission rates due to barriers such as scarce resources, greater patient needs, and more challenging care transitions once discharged. (21-24). These hospitals are more likely to be penalized under the Hospital Readmissions Reduction Program. (25) Evidence suggests a high intensity, and therefore high cost, intervention such as a dedicated multidisciplinary heart failure clinic or home visitation program can reduce all-cause readmission and mortality, while less intensive, cheaper, interventions do not. (26, 27)

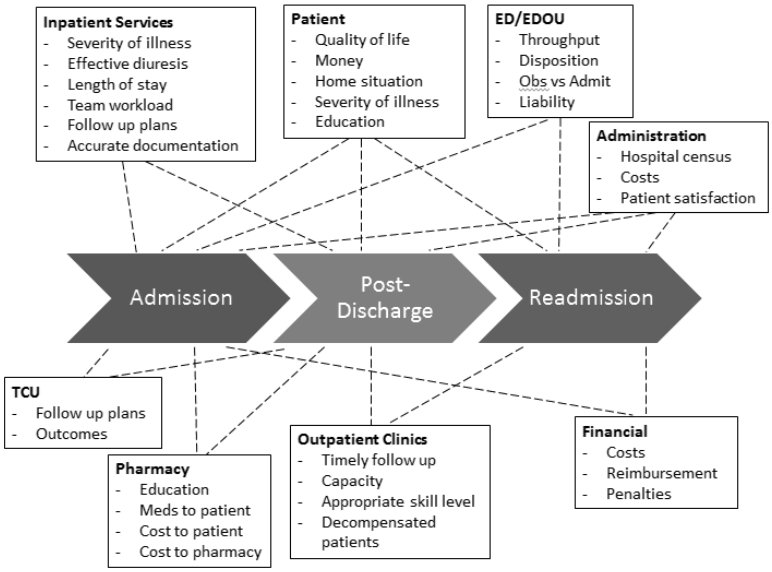
Clinicians should agree, however, that preventing <u>unnecessary</u> readmissions is good for patients, starting from the simple premise that people prefer not to be in the hospital, but going beyond that to actual financial cost to the patient and family, risk of iatrogenic harm, and indirect costs due to things

like missed work. Hospitals also have penalties for unnecessary readmissions, both through the penalties described previously and through direct cost of uncompensated care. Using our CMS-derived outcome data are publicly available from CMS hospital compare, we set the target of a 2% absolute reduction in HF readmissions without an increase in mortality.

Understanding how we provide HF care

Issues surrounding heart failure readmission are complex and involve many stakeholders as shown below (**Figure 5**).

Figure 5. Diagram of contributing factors to HF readmissions

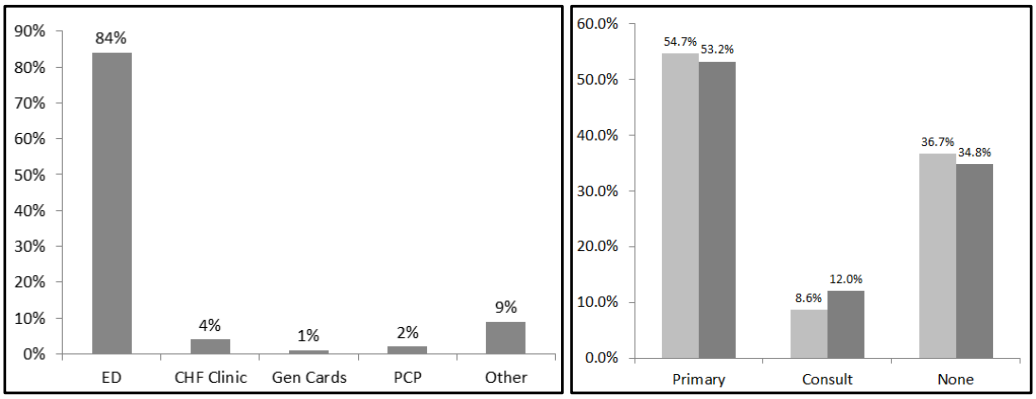


In order to understand to what extent readmissions might be modifiable, we undertook a detailed review of all 1343 cases coded as primary HF admissions in 2013. There were 267 all-cause readmissions to Parkland within 30 days, just over half with HF as the primary diagnosis for the readmission. We also randomly selected an unmatched, non-readmitted control group of 267 for comparison. Similar to what we saw with MI, the chart review by cardiologists did not confirm the HF diagnosis in all patients, with approximately 15% of patients readmitted within 30-days felt not to have HF at their index admission, instead having conditions like severe kidney or liver disease. Interestingly almost 1 in 5 of the readmitted patients stayed in house less than 48 hours for the second admission. This, combined with the fact that mean weight on readmission was merely one pound higher than discharge weight suggest that a subset of patients may have benefitted from some additional diuresis during the index stay.

The primary route for readmission was via the ED (**Figure 6**), indicating that any intervention to modify readmissions should closely involve the ED in order to change the culture from one that favors admission as the most effective disposition to one of collaboration and shared management, a process that other centers are currently grappling with. (28-32) Solutions we are currently exploring include an aggressive IV diuresis protocol for the ED observation short stay unit, appropriate use of observation status for patients who do not warrant readmission, and exploration of the possibility of an ED rapid

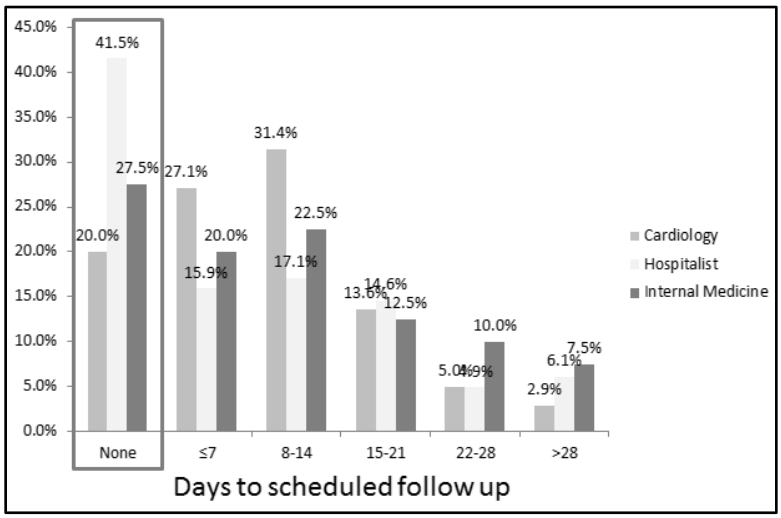
response nurse who can facilitate acute HF management and reduce time to treatment. We also found that almost half of the HF patients were managed on non-cardiology services and 1 in 3 patients were managed without any cardiology involvement at all (**Figure 6**).

Figure 6. (**Left panel**) Sources of entry for readmitted HF patients. Note that patients referred from the outpatient clinics to the ED are counted as clinic admissions. (**Right panel**) Involvement of cardiology in inpatient HF care at Parkland for 2013 for readmitted (light gray) and non-readmitted (dark gray) patients.



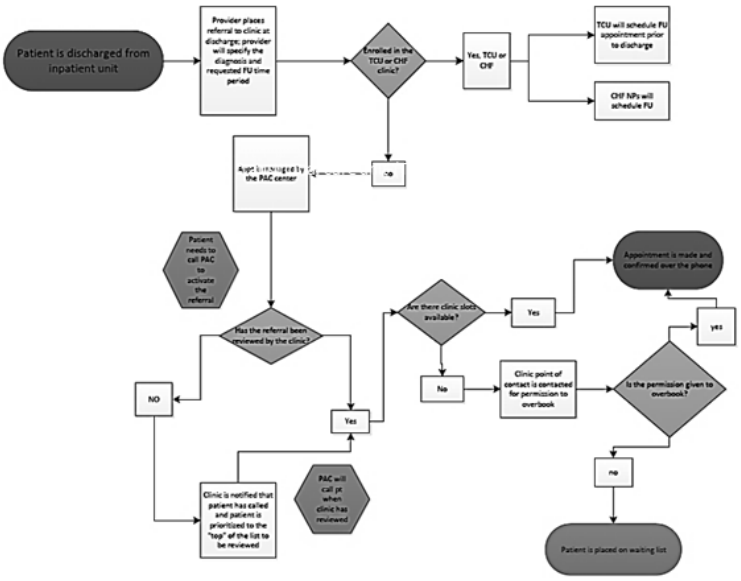
In addition, we were surprised to find that more than half of all patients admitted with HF had a normal LV ejection fraction. So, our perception of HF readmissions being driven by the severe systolic HF patients currently managed by the Transitional Care Unit (TCU) and CHF Clinic was inaccurate, and our intervention needed to target HF patients with normal EF managed on the medicine services. On further investigation, we found that almost half of the patients eventually readmitted after a HF stay on the hospitalist service left the hospital from their index admission without a scheduled follow up appointment within 4 weeks of discharge (**Figure 7**).

Figure 7. Time from initial discharge to scheduled follow-up for HF patients readmitted within 30 days.



This likely reflects the fact that the hospitalists had no pre-existing outpatient care program to refer into. Furthermore, the discharge process for patients not enrolled in the TCU or the CHF clinic was complex and challenging for our patients to navigate (**Figure 8**).

Figure 8. Discharge process for HF patients.



This has initiated several other collaborative efforts. In our hospitalist collaboration, we have opened up access to the CHF order set and NoteWriter template we use within cardiology, we have promoted the new Parkland Acute Response Clinic (ARC) as a natural partner to the inpatient hospitalist service for these patients, and we are working to make arranging post-discharge follow up process easier for house staff and patients. Several studies have looked at the potential role of dedicated transitional care units in post-discharge management. (33-36) The Parkland Transitional Care Unit (TCU), a component of the effective HF readmission reduction program run by the PCCI, has historically only enrolled patients with systolic dysfunction, based on the PIECES™ model for readmission risk. They are now working on a plan to initiate the screening process earlier in the admission, expand the scope of TCU screening to include patients with normal EF, facilitating appropriate follow-up via the ARC for patients not formally enrolled in TCU.

We have begun collaborating with Parkland Pharmacy regarding consultation for medication teaching, delivery of medications to patients before discharge, and understanding and improving medication adherence, and recruiting a cardiology specialty pharmacist to work together with our QI group. Based on the recent CMS approval of HF as an indication for cardiac rehabilitation, the Parkland Cardiac Rehabilitation program is developing protocols to enroll heart failure patients post discharge in order to give patients frequent post-discharge points follow up, volume status monitoring, and medication titration along with the other expected benefits of cardiac rehabilitation. Finally, we are collaborating with the Palliative care program to ensure that patients with more advanced HF have the opportunity to discuss goals of care and to make advanced directives.

Lessons Learned and Future Directions

Data are already being gathered on you by both public and private entities, but you have some control over what these data show both by ensuring your actual practice pattern is in accordance with guidelines and by better understanding how your documentation will be interpreted by coders and chart abstractors. Although seemingly peripheral to the practice of medicine, in the foreseeable future this will only become more important. CMS will continue to aggressively look to recoup funds from hospitals and physicians based on perceived quality. Hospitals and physician practices must be able to compete in the marketplace on value, and providing cost efficient care will be vital.

Of the types of measures currently being reported, structural factors are largely dependent on hospital resources and priorities and is largely outside the scope of the individual clinician. Process measures mandate that high fidelity data is recorded, and despite an unclear relationship with outcomes, the ease with which these data can be extracted from the EMR makes this a tempting way to measure quality as opposed to outcome measures. Reducing readmissions is a poor quality metric and in the case of HF seems to be inversely related to mortality. However, clinicians can avoid the feeling that the numbers are becoming more important than the patients by maintaining a focus on reducing unnecessary readmissions. To meaningfully impact this, however takes a collaborative effort involving integrated systems of care.

Finally, we want to train the QI leaders of the future. The Cardiology Division, in concert with the internal medicine training program, is committed to an integrated program of didactics and mentored practicum experience to support this by building solid clinical skills, the abilities to collect and analyze data correctly, to collaborate with IT, to understand relevant financial implications, and to collaborate effectively in teams. We look forward to the continued success and growth of the Parkland Cardiology QI program.

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