Readmission
Disclosures and CME Question

• Disclosures: Incurable Detroit Lions fan. Perennial Cracker Barrel yes-vote. No financial conflicts to reveal… Emoluments just ain’t what they used to be.
• Question: Which of the following interventions has shown >1% risk reduction for hospital readmission (in patients with heart failure, but these results may be extrapolated):
  • A) Partnerships with outpatient providers to reduce readmission
  • B) Multi-hospital readmission reduction collaborations
  • C) RN medication reconciliation initiatives
  • D) Arrange follow-up appointments (date/time/location in DI) before discharge
  • E) Automatic mail/fax/email of discharge summary to primary care provider
  • F) Assign staff to follow up results that return after discharge
  • G) All of the above
  • H) None of the above
This is your hospital on DRGs

1965: Amendments to the Social Security Act create Medicare and Medicaid

1974: Wilbur Cohen, one of the architects of Social Security and Medicare, admits that Medicare’s lack of cost controls has triggered massive inflation of health care expenses

1980: Fetter and Thompson publish their description of the first DRG system, developed at Yale in the late 1970s

1983: HCFA (CMS predecessor) begins the Prospective Payment System using DRGs to fix hospitalization costs on a per-case basis

1990: DRG reimbursement is widely adopted by private payers

2007: CMS replaces existing DRGs with severity-indexed DRGs

2012: CMS introduces Readmissions Reduction Program
Readmissions Reduction Program

• “CMS chose to measure unplanned readmission within 30 days instead of over longer time periods (like 90 days), because readmissions over longer periods may be impacted by factors outside hospitals’ control like other complicating illnesses, patients’ own behavior, or care provided to patients after discharge.”

• How RRP works:
  • Hospital’s readmission rate is compared to CMS’s estimate of the national average; if it exceeds this average, hospital pays a penalty up to 3%  
  • Because the reference frame can change, penalties may significantly exceed the actual cost of a given hospital’s readmissions
RRP Changes Over Time

- **2012**: Acute MI, heart failure, pneumonia; penalty max 1%
- **2014**: Formula adjusted to account for planned readmissions; penalty max 2%
- **2015**: Added COPD and elective hip and knee arthroplasty; penalty max 3%
- **2016**: Pneumonia definition expanded to include DRGs for aspiration pneumonia and sepsis (if pneumonia coded on admission)
- **2017**: Adding CABG
Readmission Demographics (1)

- 2007-2012: 18-20% of all hospitalized Medicare beneficiaries readmitted within 30 days of discharge (1.8 million admissions)
  - As opposed to 8-10% for privately insured

- Current annual cost associated with readmissions is estimated at roughly $26 billion dollars
  - Medicare total payments = ~$600 billion
  - Medicare hospital inpatient services payments = ~$140 billion
Readmission Demographics (2)

- Medicaid patients are more likely to be readmitted
- Very young and very old patients are more likely to be readmitted
- Mentally ill patients are more likely to be readmitted

- 10-12% of readmissions are attributable to socioeconomic status, with employment being the biggest factor
  - MedPAC has suggested a sliding scale for penalties based on socioeconomic factors of a hospital’s patient population

- 20-30% of readmissions are to a “non-index” hospital (“v” turn instead of “u” turn)
Quality Implications of Readmission

- Implicit in the notion of penalizing hospitals for excess readmissions are the following propositions:
  - A substantial portion of hospital readmissions are preventable
  - Hospital readmissions reflect:
    - Provision of inadequate care during the index hospitalization
    - Shortcomings in the hospital’s approach to care transitions, specifically discharge

- Are these propositions true?
How preventable is readmission?

• Estimates of readmission preventability range from 5-80%
• The number that gets tossed around is 75%, coming from a MedPAC report in 2008 that analyzed data from 2005 Medicare claims
• What was the definition of “preventable?”
  • “readmission diagnosis is reasonably likely to be connected to index diagnosis”
• A systematic review of studies of readmission preventability suggested 25% as a better estimate
  • ...and furthermore noted that studies using clinical data estimated readmission preventability at 12%, compared to 59% in studies using claims data alone
Is the index admission to blame?

• A 1997 meta-analysis suggested that quality of care predicted hospital readmission, however there are a couple concerns about this conclusion:
  • Confidence intervals included 1, i.e. no increased likelihood
  • The marquee conclusion was actually a comparison of two non-significant likelihood ratios
  • The meta-analysis authors included their own studies in the meta-analysis, suggesting an increased risk of confirmation bias

• A more recent study, in 2014, looked at more than 200,000 readmissions and found only 42% were clinically related to index admission; preventability was not specifically addressed
Readmission and Patient Satisfaction

• Does patient satisfaction influence the likelihood of readmission?
  • One large study of approximately 2000 hospitals was able to demonstrate a statistically significant association, but the effect size was small (a 1-3% difference in readmission rate)

• Interesting result:
  • Patients giving the highest marks for “help after discharge” were actually more likely to be readmitted
  • Correlates with a large VA study from the 1990s that found that improving access to primary care actually increased hospital readmission rates
Treatments for Excessive Readmission Syndrome: When?

• Evidence suggests that seven-day readmissions are more preventable than 30-day readmissions
  • Of readmissions over a six-month period, 16% were deemed “avoidable,” and a substantial majority of these occurred within 7 days of the index hospitalization

• Timing of intervention is as yet uncertain. However, real-time data on readmission rates should be achievable with existing EMR technology and would assist in a more proactive approach.
Treatment: What?

• Post-discharge telephone calls
  • Show an effect, however...
  • Propensity score matching suggests that the majority of the observed effect was ascribable to patients being able to answer the phone!

• Discharge navigators
  • Show an effect, however...
  • Only using a composite endpoint of ER visits and readmissions, which basically counts “treatment successes” twice (and the same, in many cases, for “treatment failures”), magnifying the significance of the intervention
Treatment: What (and where)?

• Medication reconciliation QI
  • The Care Transitions Intervention (2006), a randomized controlled trial of a discharge navigation “package” including extensive navigator/patient interaction across multiple settings, demonstrated a 3% absolute risk reduction in 30-day readmission
  • With research funding, they were able to do this for about 350 patients
  • Inclusion criteria: patient has a telephone (!); no mental illness; no dementia... basically, the study population was composed of patients most likely to benefit from the intervention
    • On the other hand, the same intervention suite in a higher-risk population might show even more benefit (or it might be the VA study all over again, where improving access to care increases readmission, a la the “home health HTN urgency ER visit and admission”)

Potential Novel Therapies...

- According to one recent study, as many as 7% of readmissions were assessed as not medically necessary
  - Is the first admission medically necessary!?  
  - Collaboration with emergency medicine providers to identify patients who can adequately be managed in an observation unit
    - More robust observation capacity!
  - Collaboration with primary care physicians:
    - Non-admission alternatives for expedited workup
  - Collaboration with referral centers:
    - Outreach programs, enhancements to local outpatient resources
  - Nursing facilities: bring into the accountability loop
Potential novel therapies...

- Augment patient communication modalities
  - Prepaid phone?
  - Alternatives to phone communication

- Supplemental outpatient care delivery
  - Post-discharge clinic
  - Care provider home or ECF visits

- Technologic tools
  - Wearable monitors of various types
  - Implantable lab monitoring devices
That question again...

- **Question:** Which of the following interventions has shown >1% risk reduction for hospital readmission (in patients with heart failure, but these results may be extrapolated):
  - A) Partnerships with outpatient providers to reduce readmission
  - B) Multi-hospital readmission reduction collaborations
  - C) RN medication reconciliation initiatives
  - D) Arrange follow-up appointments (date/time/location in DI) before discharge
  - E) Automatic mail/fax/email of discharge summary to primary care provider
  - F) Assign staff to follow up results that return after discharge
  - G) All of the above
  - H) None of the above
Obstacles

• Patient preference for readmission
• Patient flow pressures
  • ER would rather readmit than increase ER LOS (and that may, overall, be the right move, at least financially)
• Physician time/attention constraints (it may be easier to readmit a patient than to work with referrer to prevent the readmission)
Conclusion

• The future:
  • Expect payment adjustments to increase, although CMS adoption of other cost control measures may forestall to some extent
  • Prospective trials of targeted interventions pre-discharge utilizing EMR chart flagging

• The goal:
  • Consensus guidelines for transition of care best practices
  • Beyond individual readmissions to population outcomes