



Reducing Avoidable Hospitalization

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Objectives of This Presentation

- Identify factors associated with hospital transfers from nursing homes
- Identify considerations that could help reduce need for hospital transfers
- Identify how proper care delivery process could help prevent hospitalization
 - Based on effective clinical problem solving and decision making



Summary

- Transitions of care has drawn much attention
 - Many initiatives at present
 - Many proposed solutions
 - Not clear whether some key issues have been adequately identified and discussed



Summary

- These issues are not new
- Transitions reflect many challenges related to care both before and after a transition
- Most complications related to transitions can be anticipated
 - If not preventable, then at least possible to plan ahead to deal with them



Summary

- Care transition analogous to a relay race
- Both sending and receiving setting have responsibilities
 - Some shared, some unique to the setting and situation



Summary

- Certain information is critical to safe transitions
 - Not just facts and conclusions, but basis for those facts and conclusions
 - Facts and conclusions without rationale often still leads to a guessing game



Summary

- Organization of information is critical
 - Things happen in sequence, not randomly
 - Physical, functional, and psychosocial
 - Linking causes and consequences
- Transition information should tell a story
 - Not just provide data, however nicely organized
 - Summarizing story vs. consolidating data



Summary

- Much of the work related to subsequent transitions can be done by improving approaches to arranging and interpreting information
 - Thereby, improves both current and subsequent care



What is a Transition of Care?

- Various definitions
- A discrete shift in health and personal care services between settings or levels of care
- Transitional Phase
 - Latter part of care in the originating setting
 - Movement between settings
 - Early part of care after admission to the receiving setting



Why Are Transitions of Concern?

- Transition of care often a high risk event
 - Many risks and complications to individuals in a transitional situation
- Key objectives
 - Try to ensure optimal outcome
 - Minimize preventable complications
 - Facilitate assumption of care by others



Scope of Transitions Issue

- Study by Coleman et al
 - Tracked post-hospital transitions for 30 days in a large, nationally representative sample of Medicare beneficiaries
 - Transitions defined as transfers to or from an acute hospital, skilled nursing or rehabilitation facility, or home with or without home health care



Scope of Transitions Issue

■ Results

- 12 to 25 percent of all care patterns were categorized as complicated, requiring return to higher intensity care settings
- Overall, 46 unique care patterns were identified during the 30-day period
- 61% of care episodes resulted in one transition, 18% in 2 transitions, 9% in 3 transitions, 4% in 4 or more transitions, and 8% resulted in death
 - Coleman EA, Min S, Chomiak A, Kramer AM. 2004. Post-hospital care transitions: patterns, complications, and risk identification. *Health Services Research* 39:1449–1465



Other Transitions Data

- Twenty-three percent of hospitalized patients over the age of 65 are discharged to another institution, and 11.6 percent are discharged with home health care
 - Agency for Healthcare Research and Quality (AHRQ). 1999. Outcomes by Patient and Hospital Characteristics for All Discharges. Available at: <http://www.ahrq.gov/HCUPnet.asp>



Other Transitions Data

- Estimated 19% of patients discharged from a hospital to a skilled nursing facility (SNF) are readmitted to the hospital within 30 days
 - Kramer A, Eilertsen T, Lin M, Hutt E. 2000. Effects of nurse staffing on hospital transfer quality measures for new admissions. Pp. 9.1–9.22. Inappropriateness of Minimum Nurse Staffing Ratios for Nursing Homes. Health Care Financing Administration



Other Transitions Data

- Transfers from nursing homes to acute-care hospitals: 8.5% of all Medicare admissions to acute-care hospitals
 - About 40% of these hospitalizations occur within 90 days of nursing home admission
 - 84% of these patients are discharged from hospital back to nursing home of origin
 - Hutt E, Ecord M, Eilertsen TB, et al. Precipitants of emergency room visits and acute hospitalization in short-stay Medicare nursing home residents. J Am Geriatr Soc 2001; 50: 223-229

Transitions Are Like a Relay Race

Race





Passing the Baton

- Recipients must hit the ground running with care of a transfer
- Recipients must use all pertinent information to help clarify issues about individuals they are receiving
 - To provide safe and effective care
- Desirable transfer of information
 - Comparable to handing off baton in a relay race in a coordinated fashion
 - Next runner can take off knowing just what to do and how far and fast to go



Passing the Baton

- Poor transfer of information
 - Like fumbling or dropping the baton in a relay race where the baton recipient doesn't even know key details of the race (e.g., how far or fast to go)
- Transition risk and efficiency varies
 - Depending on how much recipient has to backtrack to try to sort out the details

What Are Some Risks Related to Transitions?



- Many factors can increase risks associated with care transitions
- Some of these risks are common but not commonly acknowledged



Challenges Preceding the Transition

- Increasing discharge of unstable or minimally stable patients
 - Financial pressures to limit hospital stays
- Difficulty in adequately managing or stabilizing a medical or psychiatric condition
- Unclear or inadequate rationale for treatments, including medications



Challenges Preceding the Transition

- Inadequate identification for the recipient of all key issues
 - For example, diagnoses, complications, prognosis, advance directives, other wishes and goals
 - “We only get paid to do so much”



Challenges After the Transition

- Inadequate preparation or capacity to provide essential care
- Rush to accept admissions in order to fill the beds
 - Pressure not to ask too many questions
 - “If we don’t take them, someone else will”
- Failure to seek, clarify, and use all pertinent information received about the individual



Challenges After the Transition

- Inadequate understanding of the meaning and implications of various information
- Erroneous assumptions about the adequacy, rationale, pertinence, and efficacy of interventions that were initiated prior to transfer



Challenges After the Transition

- Inadequate inclusion of the patient and/or substitute decision maker in evaluating and planning care
- Inappropriate labeling (e.g., “IV,” “rehabilitation,” “wound care” patient)
 - Resulting in limited approach to care until predictable or potentially preventable complications occur
- Many tasks involved for new transfer



Challenges on Arrival: Examples of Complex Tasks

- Get patient situated
- Discuss and explain situation to patients and families
- Perform multiple assessments
- Discuss goals and objectives
- Determine and review prognosis
- Define patient and family understanding and expectations



Challenges on Arrival: Examples of Complex Tasks

- Establish degree of medical stability
- Identify any recent changes of condition
- Address advance directives
- Review existing treatment regimen
- Establish a plan of care
- Obtain and implement medications and treatments



Sender's Advantage

- Often already have (or should have) much of the information that recipients need to provide safe and effective care
- Recipients should not have to speculate about why they did not get certain information
 - For example, absence of information about complications during a stay is not equivalent to confirming that none occurred



Analogy: Car Repair

- Take car in for a brake job
- Mechanics notice radiator leak
- Only fix brakes
- Don't tell you the radiator is leaking
- Car breaks down on the highway



Analogy: Patient Transfer

- Patient admitted for pneumonia
- Symptoms of delirium, medication complications, anorexia
- Only pneumonia is treated
- Treating facility does not identify on discharge that other key comorbid conditions exist
- Patient breaks down in next setting



What Do We Mean By the “Big Picture?”

- Most post-acute care complications can be anticipated
 - Based on understanding risks of the setting and the population, and knowing patient
- Greater comorbidity burden increases likelihood of such complications
 - Bernardini B, Meinecke C, Pagani M, et al. Comorbidity and adverse clinical events in the rehabilitation of older adults after hip fracture. J Am Geriatr Soc 1995;43:894-898

Table 2. Characteristics of the Most Frequent ACEs in Older Adults with Hip Fracture

Involved System	Class A (n = 88)	Class B (n = 242)	Class C (n = 54)	Class D (n = 49)	Total (n = 427)
Musculoskeletal (n = 63)	Pain (10)	Pain (6)	Pain (9)	Prosthetic luxation or loosening of fixation (16)	(15)
		Periarthritis (5) Backpain (4)	Synovitis (4) Fistula (4)	Osteomyelitis (2)	
Cardiovascular (n = 53)	Postural hypotension (2)	Superficial phlebitis (4)	Deep venous thrombosis (4)	CPE (14)	(12)
	Sinus tachycardia (1)	CPE (3)	Unstable angina (2)	Myocardial infarction (8) Atrial fibrillation (6) Acute arterial occlusion (6)	
		Angina pectoris (2) Hypertensive crisis (1) PSVT (1)			
Gastrointestinal (n = 50)	Nausea and vomiting (9)	Fecal impact (6)	Diverticulitis (1)	Acute hepatitis (2)	(12)
	Diarrhea (4) Abdominal Pain (3)	Gastritis (2) Colicky Pain (1)			
Urinary (n = 48)	Oliguria (4)	UTI (8)	Haemorrhagic cystitis (5)	Stable incontinence (2)	(11)
	Hematuria (4)	Urinary retention (3)	Acute renal failure (4) Pyelonephritis (3)		
Respiratory (n = 40)	Dyspnea (3)	Bronchitis (8)	Pneumonia (17)	Pneumonia (6)	(9)
	Common cold (1)	Asthmatic crisis (2)	Pleural effusion (2)		
Neurological (n = 31)	Confusion (7)	Headache (3)	Delirium (4)	Stroke (6)	(7)
		Dizziness (2)	Herpes zoster (2)		
		TIA (1)	Trigeminal neuralgia (2)		
		Delirium (1)			

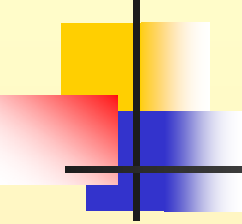
Percentages in brackets for each ACE class.

UTI = Urinary tract infection; PSVT = Paroxysmal supraventricular tachycardia; CPE = Cardiogenic Pulmonary Edema.



Passing on Burdens and Risks

- Endpoint of care at the sender can influence results at the recipient
 - Results can include occurrence of complications and ultimate outcomes including length of stay and costs of care
- Key factors
 - Degree of medical instability
 - Burden of active illness
 - Complications (problems) present upon transfer



Passing on the Burdens

- Unstable or more complex patient
 - May take longer to achieve desired outcomes at recipient site
 - Complications may be more likely
 - Rosenthal et al. Predictive validity of the nursing severity index in patients with musculoskeletal disease. *J Clin Epidem* 1995;48:179-188.

Factors Influencing Subsequent Events

Table 4. Mean length of stay and total hospital charges according to admission Nursing Severity Index scores among medical and surgical patients

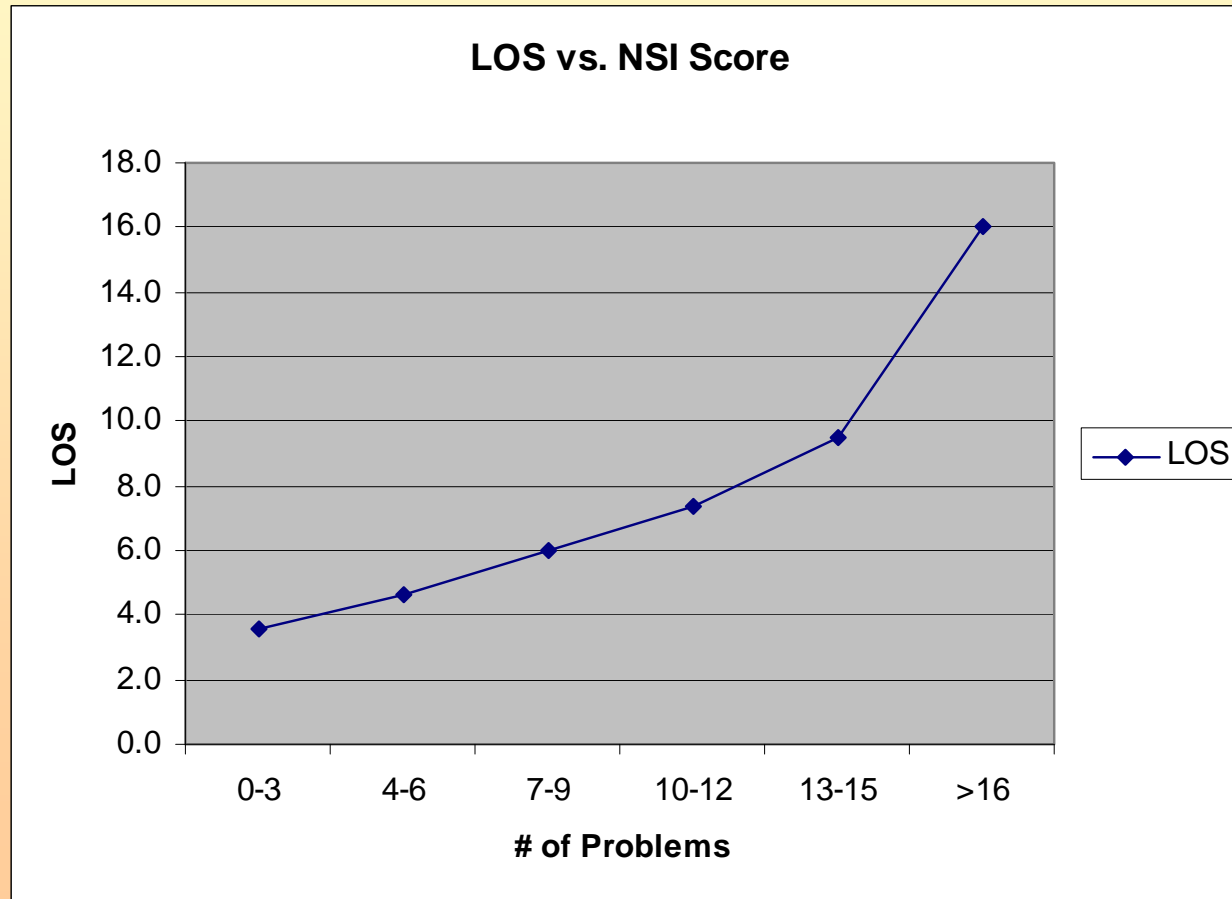
Strata of Nursing Severity Index scores*	Medical patients		Surgical patients	
	Mean length of stay (days)†	Mean charges (\$)†	Mean length of stay (days)†	Mean charges (\$)†
0-3	3.6	4245	7.8	11,565
4-6	4.6	5218	9.1	14,103
7-9	6.0	6461	10.2	15,831
10-12	7.4	8001	11.1	17,650
13-15	9.5	10,797	13.1	18,597
≥16	16.0	27,373	21.9	35,052

*Nursing Severity Index scores were collapsed into six strata, as described in the Methods.

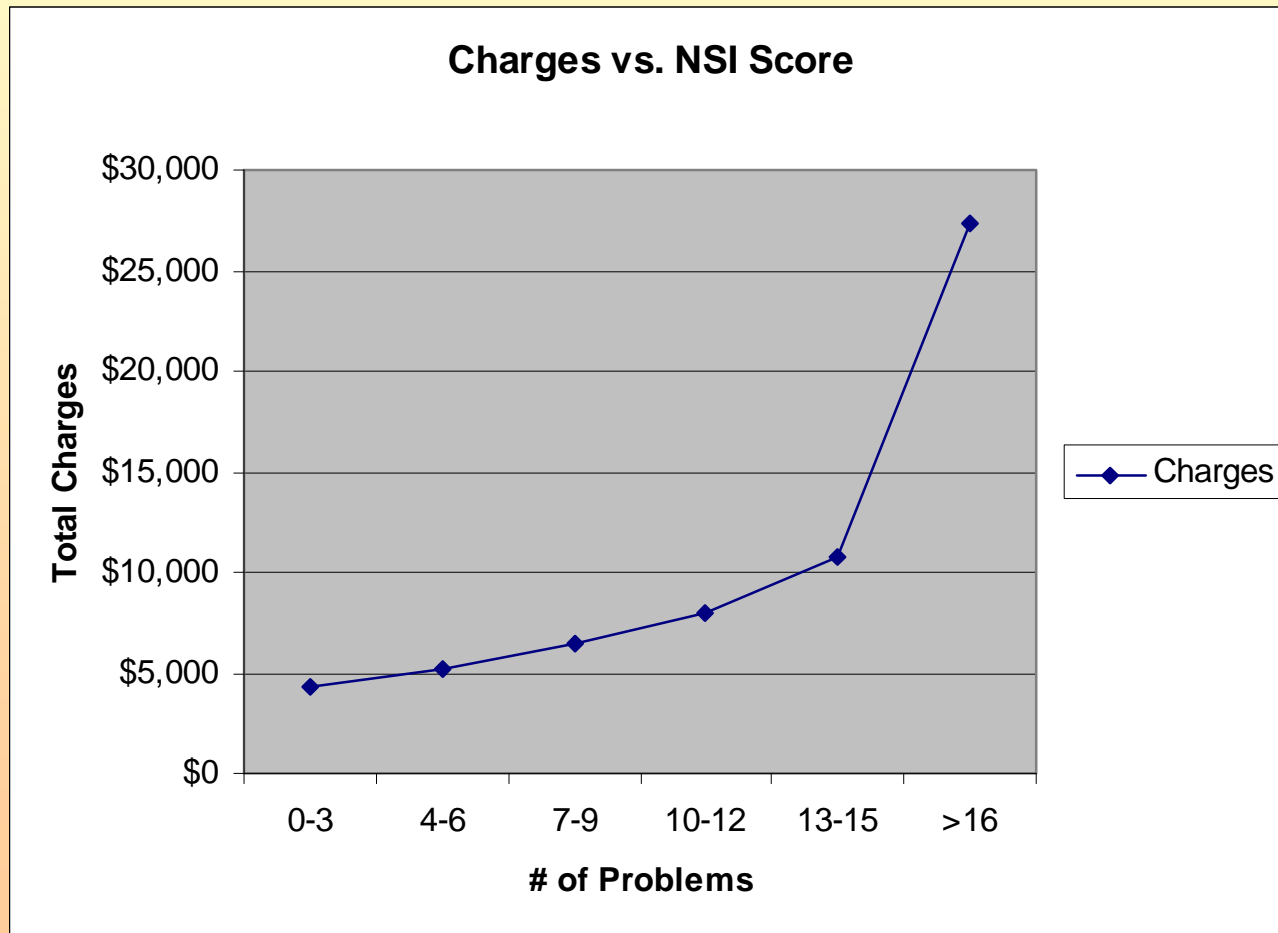
†The relationship between the Nursing Severity Index strata and length of stay or total hospital charges is significant, $p < 0.001$.

- Rosenthal et al (1995)

Impact of Total Problems on Length of Stay



Impact of Total Problems on Costs of Care





Sender and Recipient

- Endpoint of care at the sender influences results at the recipient
 - Can include occurrence of complications, prognosis, and ultimate outcomes including length of stay and costs of care

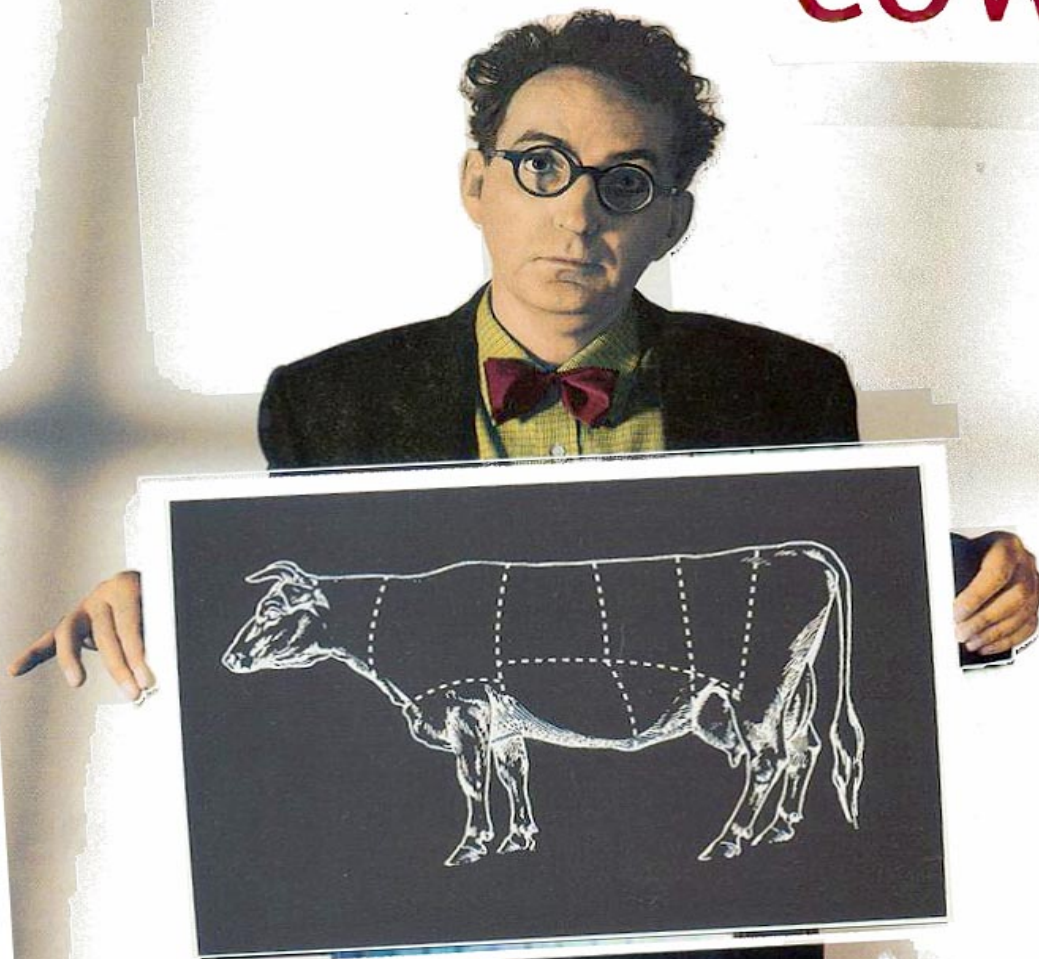


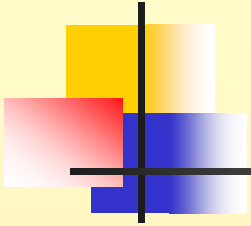
Sender and Recipient

- For example, for any primary diagnosis (stroke, pneumonia, fracture)
 - Patient arriving with 6 active comorbidities and 8 problems is likely to have more challenging course compared to patient with same primary diagnosis and 1 or 2 minor comorbidities and/or complications
 - Rosenthal et al. Predictive validity of the nursing severity index in patients with musculoskeletal disease. J Clin Epidem 1995;48:179-188

This is not a

COW.







Key Strategies Based on Understanding Key Principles

- Respect for basic biology
 - Good / Patient-Centered
 - Coordinated care of individuals with [A+B+C+D+etc]
 - Discipline (or Provider)-Centered
 - [Care for condition A] + [Care for condition B] + [Care for condition C] + [Care for condition D] + [etc.]



What Information is Critical?

- Many proposals for transfer documents
- Often focus on descriptive data (diagnoses, function, and interventions)
- Two critical elements often under emphasized
 - The “story”
 - The rationale



Critical Importance of the Story and the Rationale

- “Why” is as Important as “What”
- The story reflects key biological reality
 - Things happen in sequence
 - Knowing the sequence reveals much about what is needed for safe and effective care



Things Happen in a Sequence

- Symptoms (including those related to medications often part of a cascade of problems
 - Medication → lethargy → decreased oral intake → fluid/electrolyte imbalance → further lethargy → weight loss → skin breakdown
 - Pneumonia → confusion → medication → lethargy → skin breakdown



Data vs. Rationale

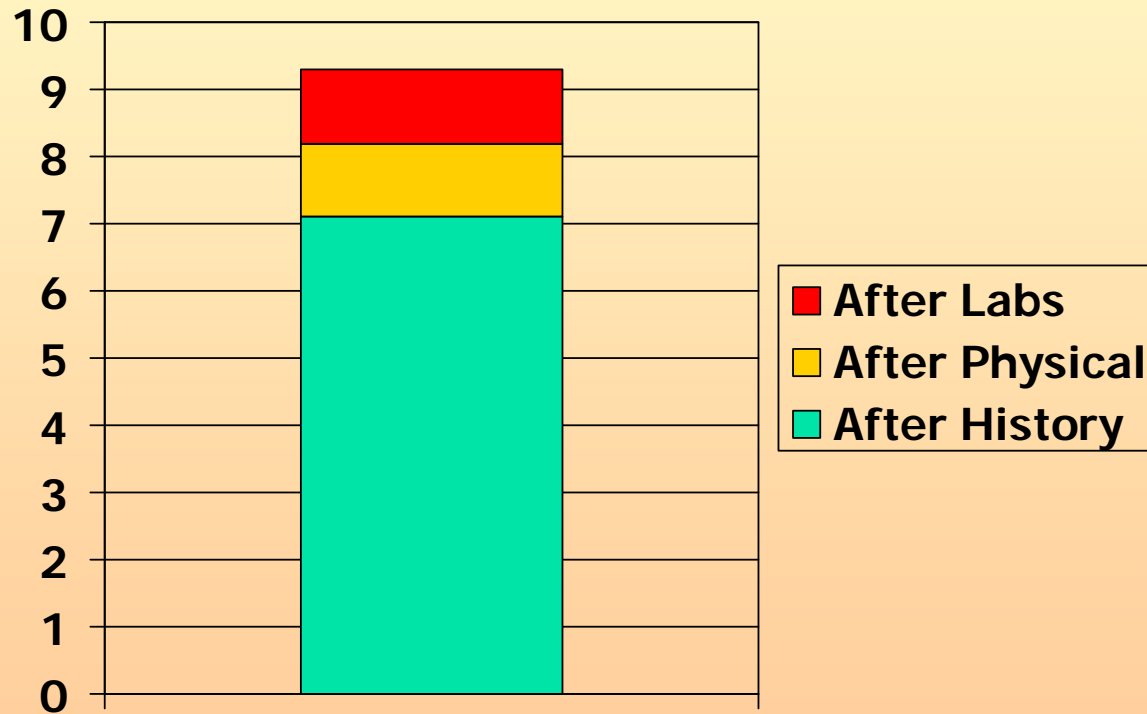
- Data

- Patient has a feeding tube, and here are the parameters

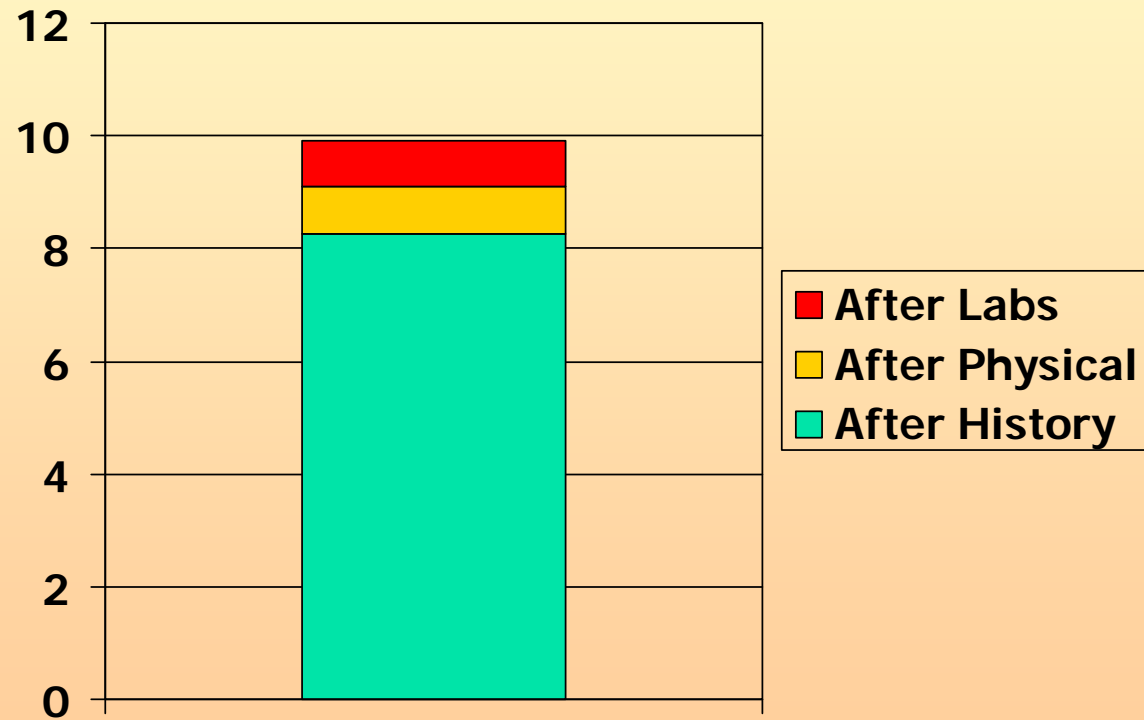
- Rationale

- Why does the patient need a feeding tube, to begin with?
- How will we know when the patient no longer needs one?
- Truth often is either they don't need it or no one really knows for sure

History is Most Important (1992)



History is Most Important (1975)





Basic Information is Important

- Information about patients may represent raw or interpreted data
 - Raw data (for example, key test results and vital signs) are useful
- Difficult to interpret most raw data adequately without a context
 - For example, temperature alone may suggest, but does not define, the presence of infection



Basic Information is Important

- Interpreted data is based on analyzing information and drawing conclusions
 - Examples of information based on interpreted data include prognosis, decision making capacity, diagnoses, and rationale for treatment



Receiving Sites Need More Than Raw Data

- Treatments (including medications) are based on interpretations of information
- What is wrong with the individual, and what caused the problems
- What is needed to correct problems



Receiving Sites Need More Than Raw Data

- Need interpreted data and the basis for those conclusions
 - Otherwise, they have to figure it all out themselves
 - Often wastes resources
 - Can be very unsafe if they don't understand or guess wrong



Receiving Sites Need More Than Raw Data

- Fixed data sets such as those proposed as transfer documents
 - Appealing for research, reimbursement, and quality measures
 - Not as useful for providing clinical care
- Some fixed data is necessary
 - More of it is not necessarily better
 - What is the best use of time and expectations for transfer information?



Basic Information is Important

- Example: Nursing home Minimum Data Set [MDS] has lots of data, but little context
 - That is, it does not link causes and consequences or show how symptoms or problems evolved over time
 - For example, information that someone is dependent in three ADLs or has an abnormal test result does not indicate the origins and implications of these results for the patients



Receiving Sites Need More Than Raw Data

- Why benefits outweigh risks
- Treatments (especially, medications) may be initiated or continued
 - Without a clear rationale
 - Based on erroneous interpretation of symptoms or problematic selection
 - Excessive and unwarranted modification of food texture; for example
 - Failure to recognize medication risks or actual adverse consequences

Name LL

Age 74 Doctor-

Conf. Date-

RELATIONSHIPS BETWEEN PROBLEMS, DISEASES, TREATMENT/CARE

PROBLEMS

Group 1-Overall health
Potential for injury
Infection/contagion
Prolonged disease/disability
Instability
Impaired life support systems

Group 2-Nutrition/metabolism

Excess fluid volume
Fluid volume deficit
Bleeding
Altered nutrition status
Impaired skin integrity
Altered oral mucous membranes
Altered body temperature

Group 3-Urinary/fecal function

Urinary incontinence
Other altered urinary elimination
Constipation
Diarrhea
Bowel incontinence

Group 4-Activity and exercise

Activity intolerance
Ineffective airway clearance
Altered breathing pattern
Impaired gas exchange
Decreased cardiac output
Altered health maintenance
Impaired mobility
Self-care deficit

Group 5-Psychosocial concerns

Disturbed self-concept
Depression
Dysfunctional grieving
Altered family process
Social Isolation/Leisure activity intolerance
Impaired verbal communication
Ineffective individual coping
Family coping: potential growth
Spiritual distress

DIAGNOSES

Urinary tract infection
Pneumonia
Septicemia
Acute respiratory failure

Dehydration

L Hypokalemia

Delirium

Gastritis

L GI bleeding

Atrial fibrillation/SVT

Congestive heart failure

? brain abscess

Antibiotic-induced

colitis

L Diarrhea

? Hypernephroma, R kidney

TREATMENT/CARE

Rocephin
Ritampin

endocarditis
L embolus, L big toe

KCl

? Risperdal
propracid
(Carafate)
(Pepcid)

? Amiodarone

Lasix

? Vasotec

Inderal

Fhogl

Cardura

Ecotrin

Vit C

Multivit.

Mini-mental score

24

Ativan



Your Opinion

- Agree or disagree?
 - Patients discharged from the hospital come with a clear, clinically pertinent rationale (not just diagnosis) for every medication that they were given in the hospital
 - Hospital-based practitioners who prescribe medications for hospitalized patients know how to prescribe medications and understand their indications and potential adverse consequences



Treatments Are Based on Interpretations of information

- What is wrong with the individual?
- What caused the problems?
- What is needed to address or correct problems?



Treatments Are Based on Interpretations of information

- Why benefits outweigh risks
- Treatments (especially, medications) may be initiated or continued
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Challenges to Receiving Information



- Receiving sites may wish that all interventions developed elsewhere
 - Are based on thoughtful analysis and correct decision making
 - Have a clear and enduring basis
- This is often not the case
- Things often change
- Do settings learn about subsequent complications?



Importance of Reviewing and Understanding Information

- Recipients must review critically information that accompanies the patient, and should
 - Question anything for which there is not a clear rationale
 - Reconsider conclusions that are not verified by their own assessment



Importance of Reviewing and Understanding Information

- For example
 - Patient with delirium may have needed medication and a substitute decision maker while in one setting
 - These interventions may no longer apply after the delirium resolves



Validating Information

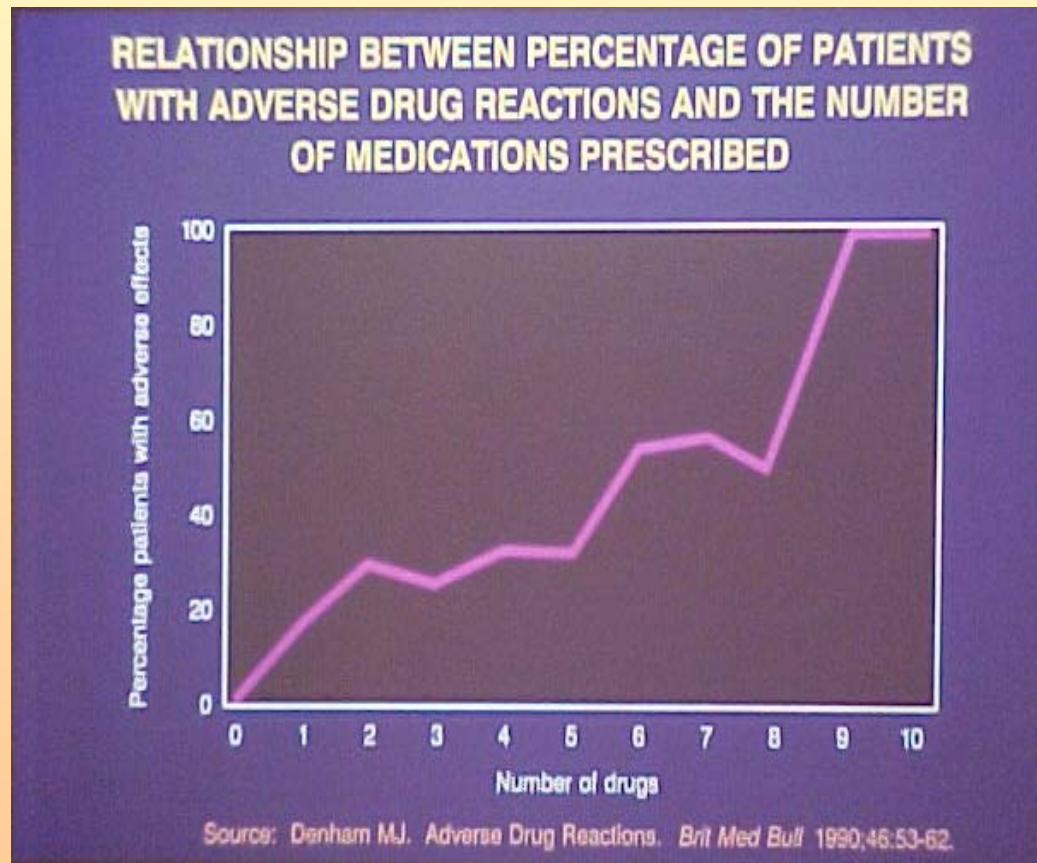
- What are some reasons why the alleged rationale for a treatment may be invalid?
- What are some reasons why the rationale for a treatment may have been correct but the intervention is no longer pertinent?



Validating Information

- Rationale may be invalid; for example, due to
 - Incorrect diagnosis
 - Failure to pursue cause of a symptom
 - Failure to identify appropriate indications for a medication
- Rationale may be correct but interpretation or intervention no longer pertinent because
 - Patient's condition or prognosis have changed
 - Underlying cause has resolved
 - Intervention may now be causing complications

Example: ADRs Increase With Number of Medications





Explaining Medications in the Transitioning Patient

- Key elements
 - Indications
 - Dose / duration
 - Monitoring
 - Adverse consequences
- Same issues as expected during the stay
 - Per F329

What Monitoring is Needed After Transfer



- If they were put on
 - Warfarin?
 - Warfarin + amiodarone?
 - Warfarin 7.5 mg + antibiotics?
 - Warfarin + Plavix + aspirin + lovenox + amiodarone + digoxin + antibiotics + fluconazole?



Why Do They Need

- Two broad spectrum IV antibiotics and a systemic antifungal for 2 more weeks for uncomplicated pneumonia and Candida colonization of the urine?
 - So that they can get c. difficile diarrhea, requiring expensive Vancomycin?
 - So they can then get VRE?
 - So that they can get anorexia?
 - So they can have a nice drug interaction?



Why Are They Still Getting

- Large doses of both phenytoin and lamotrigene
 - When they were started on them months ago for seizure prophylaxis after a stroke, but have never had a seizure?
- Diphenhydramine for itching
 - When there is no identifiable information that the patient has been worked up for underlying causes, including medications?



Why Do They Still Require

- A standing b.i.d dose of opioids for nonspecific, generalized pain
 - When they haven't been tried on a standing dose of acetaminophen?
 - When the cause of that nonspecific, generalized pain hasn't been identified?
 - When opioids are not the treatment of choice for nonspecific, generalized pain?



Why Are They Getting

- An “appetite stimulant”
 - When they are already on several medications that are known to adversely affect appetite?
- Finger sticks and sliding scale insulin
 - When their blood sugars have been stable for a year?
- A large dose of an antihyperlipidemic
 - When they are 87 and have not been eating well?



Why Are They Receiving

- Risperdal 1mg daily
 - When their delirium from the hospital stay has resolved and their MMSE score is 26?
- Metoclopramide q.i.d. for “nausea”
 - When the indications are strictly limited?
 - When they already have a history of seizures?
 - When their mental function is already compromised?



Why Are They On

- Three antihypertensive medications
 - When their BP is borderline low and they just had to be hospitalized because of recurrent falls that eventually led to a hip fracture?
- Lisinopril and guaifenesin
 - Despite no workup for causes of chronic dry cough?
- A PPI
 - When it was started while hospitalized 3 months ago for pneumonia, despite no history of GI problems
 - But patient was sent to us with a diagnosis of "GERD?"



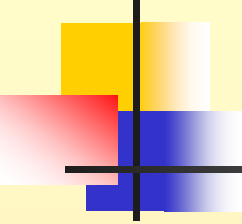
Transfer of Information

- Effort to improve transitions of care documents and transfer forms
 - Presently, transfer documents vary widely
- Mere redesign may not be enough
- More fruitful approach may be
 - Try to understand basis for content and organization of such forms
 - Recognize importance of clarifying and improving related care processes



Transfer Documents: Factors Affecting Value

- Content and organization of forms
- What exactly do they summarize
- Thought processes reflected by the information
- What they accomplish and what they omit



Importance of Details: Diagnoses

- Even lengthy diagnosis list has limitations, without more detail
 - What is active or inactive?
 - What is the severity of the condition and of its impact on the patient?
 - How do illnesses relate to one another?
 - In what sequence did they occur?
 - Which diagnoses are still contributing to a person's current condition or risks, and to what extent?



Implications For Improving Transitions

- All of the preceding has implications for improving safety, efficiency, and effectiveness of transitions
- What are some challenges

Challenges Related to Transitions



- Concerns about care transitions transfer reflect broader issues, for example
 - How much information should a transferring site be expected to provide to help someone else providing care?
 - Is providing adequate information at discharge or transfer a luxury or a necessity?
 - Is certain information critical or optional?

Challenges Related to Transitions



- Concerns about care transitions transfer reflect broader issues, for example
 - Is time and effort to provide adequate information for safe transitions extra?
 - Is it reasonable to pay a receiving site to redo work that is already been done?
 - Is it right to pay a receiving site for a complication that occurs because they didn't fully use, try to clarify, or understand the information they received?



Implications For Sending Sites

- Time and staff constraints
 - Support for transition can be very time consuming
- Discharge often abrupt and unexpected
- Most information needed at discharge should already be available, as it is pertinent to ongoing care
 - Challenges to find and organize that information



Implications For Sending Sites

- Implies need for a whole new way to look at keeping and organizing information during stay to minimize work load at time of transition
 - For example, keep a running summary (weekly or monthly) during a person's stay, which can then be aggregated on transfer
 - Have a consolidated discharge document, instead of several separate ones from diverse disciplines



Priorities in Approaching Transitions Issue

- Establish and improve communications and conveyance of key information across settings
- Improve quality and pertinence of information across settings



Priorities in Approaching Transitions Issue

- Identify and address root causes
- Improve ability to understand and interpret information
- Improve knowledge and skills related to clinical assessment and decision making



Conclusion

- Almost everything related to safe and effective transitions also relates to safe, effective, and efficient care while in each and every setting
- Most of the work related to subsequent transition can be done by improving approaches to arranging and interpreting information in all settings
- Widespread ethical responsibility to do it right