Managing Patient Care Transitions: How Health IT Can Reduce Unnecessary Re-Hospitalization

February 24, 2010

Presenters:

Stephen Jencks
Independent Consultant In Health Care Safety

Brian Jack
Department of Family Medicine at Boston University School of Medicine, Boston Medical Center

Terry Field
University of Massachusetts Medical School

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Transitional Care and Rehospitalization: Information Technology

Stephen F. Jencks, M.D., M.P.H.
Consultant in Healthcare Safety and Quality

Rehospitalization is often a symptom

- Many rehospitalizations result from care system failures in the transition from hospital to the next source of care.
- These care failures allow, and sometimes cause, the clinical deterioration that leads to rehospitalization.
- The failures reflect a lethal system design flaw.
- Our aim is to fix the system to prevent these care failures so the patient does not deteriorate and need rehospitalization.

Rehospitalization as a perfect crisis and opportunity

- Safety
- Cost
- Patient experience
- Urgency (trust fund bankrupt 2017)
- Growing momentum for change

Safety: A population at high risk

- 19.6% of live Medicare fee-for-service discharges are rehospitalized within 30 days.
- Two-thirds of Medicare fee-for-service medical discharges are rehospitalized or dead within a year.
- Half of surgical discharges are rehospitalized or dead within a year.

Cost

- At 30 days: about $17.4 billion trust fund dollars in 2004.
- Roughly 90% of 30-day rehospitalizations are unplanned and acute and therefore are targets for prevention.
- Achievable savings extremely uncertain, but clinical trials suggest 20-50% preventability.

Patient Experience

- Discharge-related elements get terrible scores on patient surveys.
- Surveys do not tell us exactly what happened, but they do tell us what the patient experienced.

Rehospitalization as an opportunity

- Fragmentation of care lies behind many failed transitions and many other system failures.
- This is a major opportunity to reduce fragmentation.
- If we succeed we have established a precedent for fixing other broken parts of the health care system.
- If we fail, not so good.

Evidence of growing momentum

- 250-400 hospitals engaged in projects to reduce rehospitalization
- 14 communities
- 3 states
- High likelihood of payment changes in Medicare to reward lowering rehospitalization rates.
- Growing recognition that this is not just a Medicare problem.

Four Goals:

At discharge:

1. Every patient/family knows what medication to take and can get it.
2. Every patient/family knows the signs of danger and who to call if they occur.
3. Every patient/family has a prompt follow-up appointment and can keep it.
4. Every patient/family understands and can follow their self-care program.

Uses for IT

- Transmit information
- Assess risk
- Instruct and assess patients
- Integrate patient and caregiver view into care planning
- Provide near-real-time feedback to providers

Thank you!

steve.jencks@comcast.net

Project RED: The ReEngineed Discharge

Brian Jack M.D.,
Associate Professor and Vice Chair Department of Family Medicine / Boston University School of Medicine

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“Perfect Storm" of Patient Safety

- **39.5 million hospital discharges per year**
- **Costs totaling $329.2 billion!**
- **Hospital discharge is not-standardized and marked with poor quality**
    - Loose Ends
    - Communication
    - Poor Quality Info
    - Poor Preparation
    - Fragmentation
    - Great Variability
- **19% of patients have a post-discharge AE**
- **20% of Medicare patients readmitted within 30 days**
    - **Only half had a visit in the 30 days after discharge[1]**

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But it is More than Patient Safety

- **"Hospitals with high rates of readmission will be paid less if patients are readmitted to the hospital within the same 30-day period saving $26 billion over 10 years"**

  Obama Administration Budget Document

- **MedPAC recommends reducing payments to hospitals with high readmission rates**

  MEDPAC Testimony before Congress March '09

- CMS: 14 Quality Improvement Organizations "Safe Transitions" demonstration projects
- CMS to release new payment scheme
- http://www.hospitalcompare.hhs.gov/

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RED Checklist

Eleven mutually reinforcing components:

1. Medication reconciliation
2. Reconcile dc plan with National Guidelines
3. Follow-up appointments
4. Outstanding tests
5. Post-discharge services
6. Written discharge plan
7. What to do if problem arises
8. Patient education
9. Assess patient understanding
10. Dc summary to PCP
11. Telephone Reinforcement

Adopted by

National Quality Forum

as one of 30

"Safe Practices" (SP-11)

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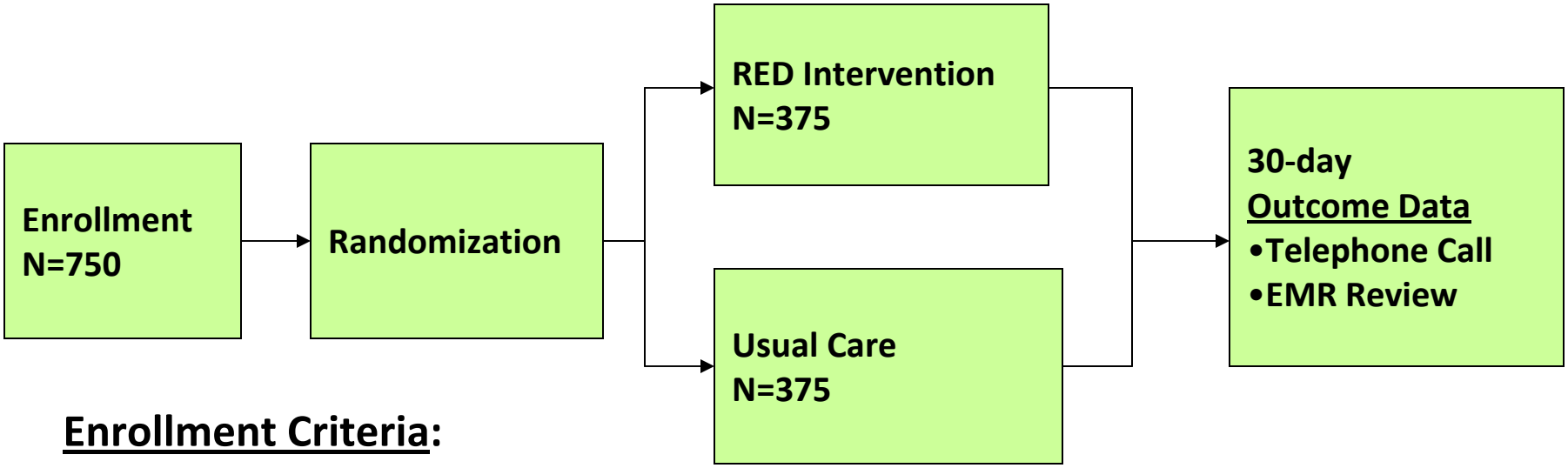
Methods- Randomized Controlled Trial



Enrollment Criteria:

- English speaking
- Have telephone
- Able to independently consent
- Not admitted from institutionalized setting
- Adult medical patients admitted to Boston Medical Center (urban academic safety-net hospital)

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After Hospital Care Plan

PROJECT RED
Re-Engineered Discharge

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After Hospital
Care Plan
for:
Maria Johnson

Discharge Date: October 25, 2005

Problem with anything in this packet?

Call Mary Goodwin: (617) 414-6210

Serious health problem?

Call your Doctor, Chris Manasseh: (617) 825-3400

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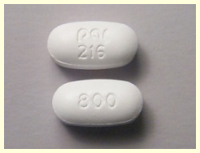
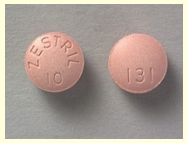
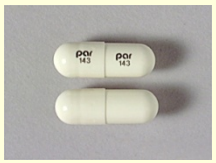
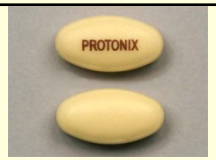
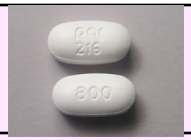
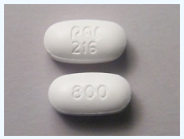
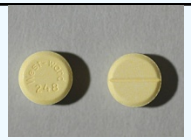
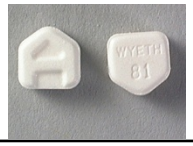
EACH DAY follow this schedule:

Medication Schedule for Maria Johnson

What time of day do I take this medicine?	Picture (the medication from the pharmacy may not look exactly like this)	Medication name Amount # of pills	How do I take this medicine?	Why am I taking this medication?
 Morning		Motrin© (Ibuprofen) 800mg **1 pill**	by mouth with food	pain
		Zestril© (Lisinopril) 10mg **1 pill**	by mouth	blood pressure
		Apresazide© (HCTZ) 25mg **1 pill**	by mouth	blood pressure
		Nifedical XL© (Nifedipine) 30 mg **1 pill**	by mouth	blood pressure
		Protonix© (Pantoprazole) 40 mg **1 pill**	by mouth	indigestion

 Noon		Motrin© (Ibuprofen) 800mg **1 pill**	by mouth with food	pain
		Flovent© (Fluticasone) 44mcg/puff **2 puffs**	by inhalation through mouth	help breathing
 Evening		Motrin© (Ibuprofen) 800mg **1 pill**	by mouth with food	pain
		Folic Acid 1mg **1 pill**	by mouth	vitamin
 Bedtime		Flovent© (Fluticasone) 44mcg/puff **2 puffs**	by inhalation through mouth	help breathing
If you need it for anxiety		Ativan© (Lorazepam) 0.5 mg **1 pill**	by mouth 1x each day if needed	anxiety

Problem with anything in this packet?



Call Your Discharge Advocate, RN – Lynn, Michael, or Mary: (617) 414-682

Serious health problem?

Call your Doctor, Chris Manasseh: (617) 825-3400

After Hospital Care Plan **Maria Johnson** **10/11/05**

*****Bring this Plan to each Appointment*****

MAIN PROBLEM:

Chest Pain

APPOINTMENTS:

Monday, October 31st at 1:30pm	Friday, November 4th at 10:00am	Wednesday, November 9th at 9:30am	Tuesday, November 15th at 11:00am
Dr. Chris Manasseh Primary Care Physician (Doctor)	Dr. Sheilah Bernard Consultant (Cardiologist)	Nutritionist	Cardiac Stress Test
at Harvard St. Community Health Center → John will drive	at Boston Medical Center; Doctor's Office Building - 642 → Take cab, use cab voucher	at Boston Medical Center → Take #1 bus	at Boston Medical Center 850 Harrison Ave 4th floor – Cardiac Station → John will drive; take parking sticker
For a Follow-up appointment	For a heart appointment	To help with food plan	To check your heart
Office Phone #: 617-825-3400	Office Phone #: 617-638-7490	Office Phone #: 617-555-1234	Office Phone #: 617-555-2345

Tests:

Lab test/Studies done in hospital. Waiting for results.

Lab test/ study name	Date done	Name of clinician to review/location	Day/Date subject will see clinician to discuss results?
Stomach biopsy from endoscopy (stomach test)	October 24, 2005	Dr. Manasseh at Harvard Street CHC	Dr. Manasseh will talk to you about results at your appointment with him on October 31, 2005.

November 2005

*****Bring this Plan to each Appointment*****

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	**2**	**3**	**4** Call cab at 9:15am Dr. Bernard at 10:00am at BMC	**5**
6	**7**	**8** Cardiac Stress Test at 11:00 am at BMC John will drive	**9** Nutritionist at 9:30am at BMC Take #1 bus	**10**	**11**	**12**
13	**14**	**15**	**16**	**17**	**18**	**19**
20	**21**	**22**	**23**	**24** BMC will call at 10am for study	**25**	**26**
27	**28**	**29**	**30**			

Primary Outcome:

Hospital Utilization within 30d after dc

	Usual Care (n=368)	Intervention (n=370)	P-value
Hospital Utilizations *			
Total # of visits	166	116	
Rate (visits/patient/month)	0.451	0.314	0.009
ED Visits			
Total # of visits	90	61	
Rate (visits/patient/month)	0.245	0.165	0.014
Readmissions			
Total # of visits	76	55	
Rate (visits/patient/month)	0.207	0.149	0.090

*** Hospital utilization refers to ED + Readmissions**

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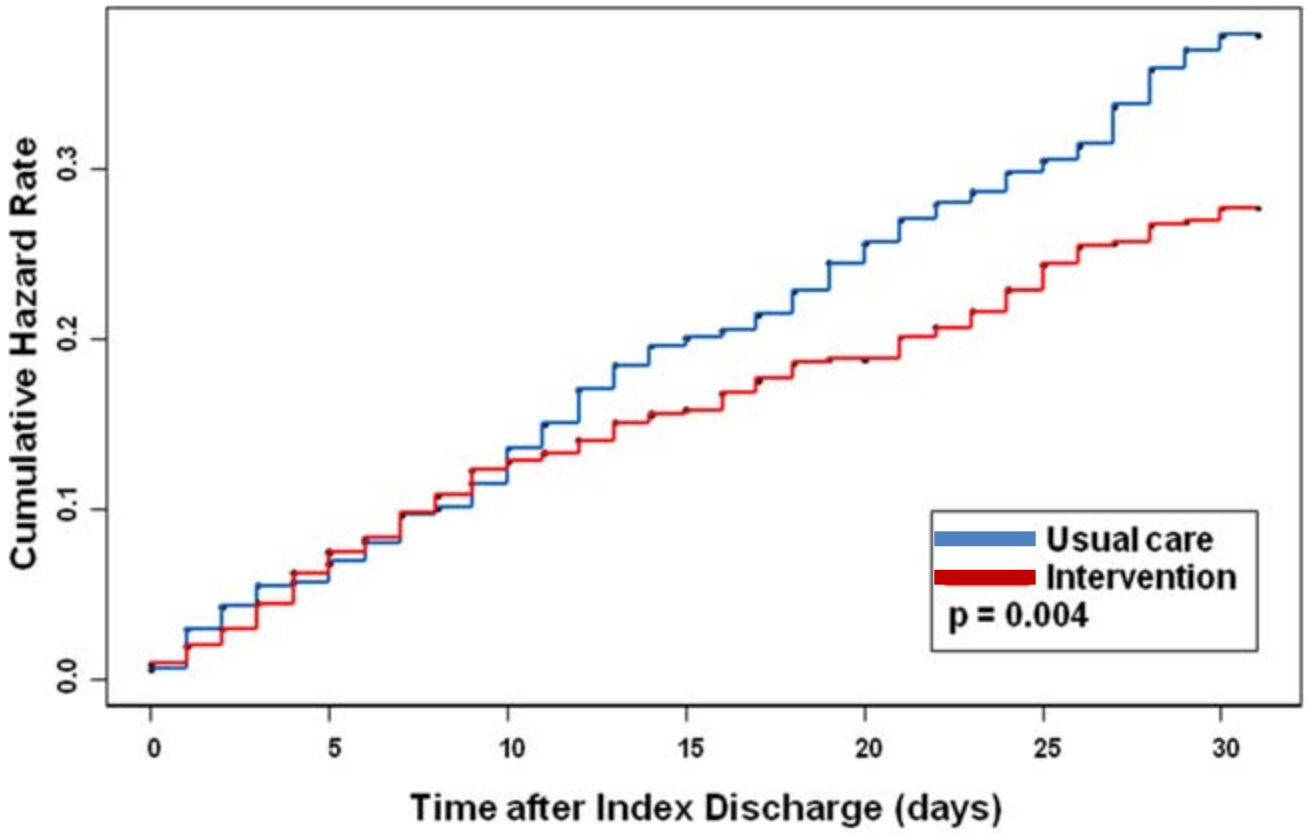
Cumulative Hazard Rate of Patients Experiencing Hospital Utilization
30 days After Index Discharge



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Outcome Cost Analysis

Cost (dollars)	Usual Care (n=368)	Intervention (n=370)	Difference
Hospital visits	412,544	268,942	+143,602
ED visits	21,389	11,285	+10,104
PCP visits	8,906	12,617	-3,711
Total cost/group	442,839	292,844	+149,995
Total cost/subject	1,203	791	+412

We saved $412 in outcome costs for each patient given RED

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Can Health IT assist with providing a comprehensive discharge?

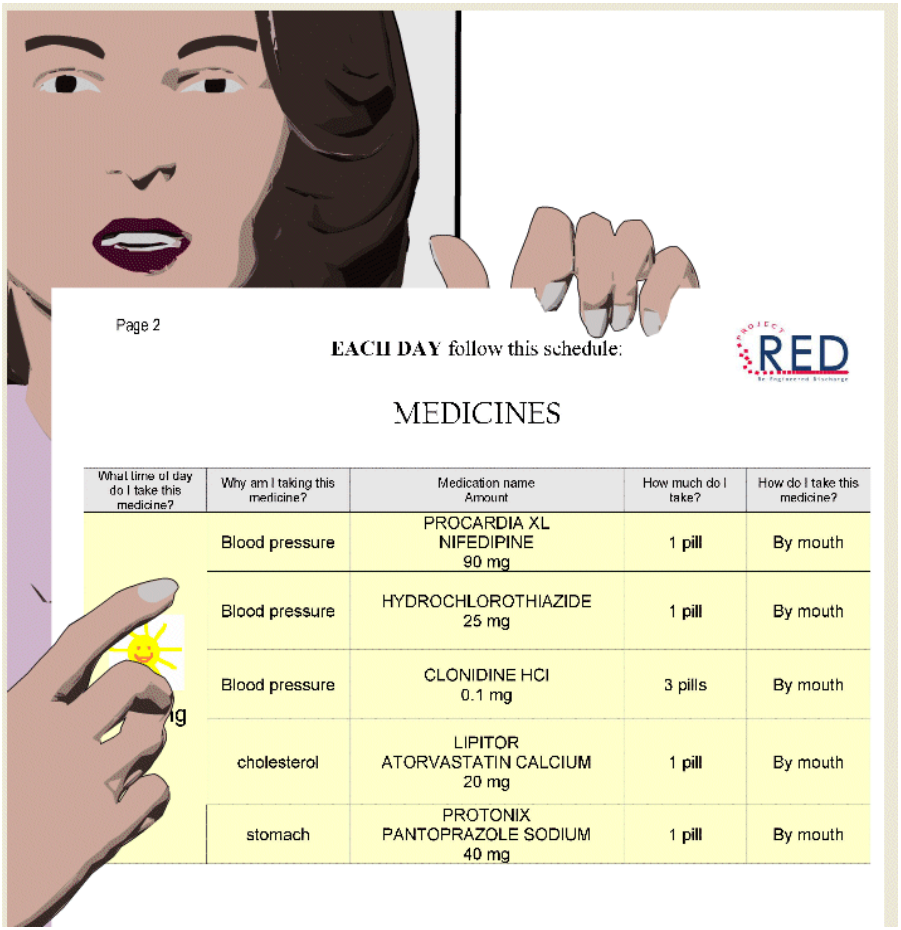
Using Health IT to Overcome Challenge of RN Time

Embodied Conversational Agents

- **Emulate face-to-face communication**
- **Develop therapeutic alliance using empathy, gaze, posture, gesture**
- **Teach RED**
- **Determine Competency**
- **Can drill down**
- **Maps of CHCs**
- **High Risk Meds**
  - **Lovenox**
  - **Insulin**
  - **Prednisone taper**

Characters: Louise (L) and Elizabeth (R)

Studies of Nurse-Patient Interaction



Page 2

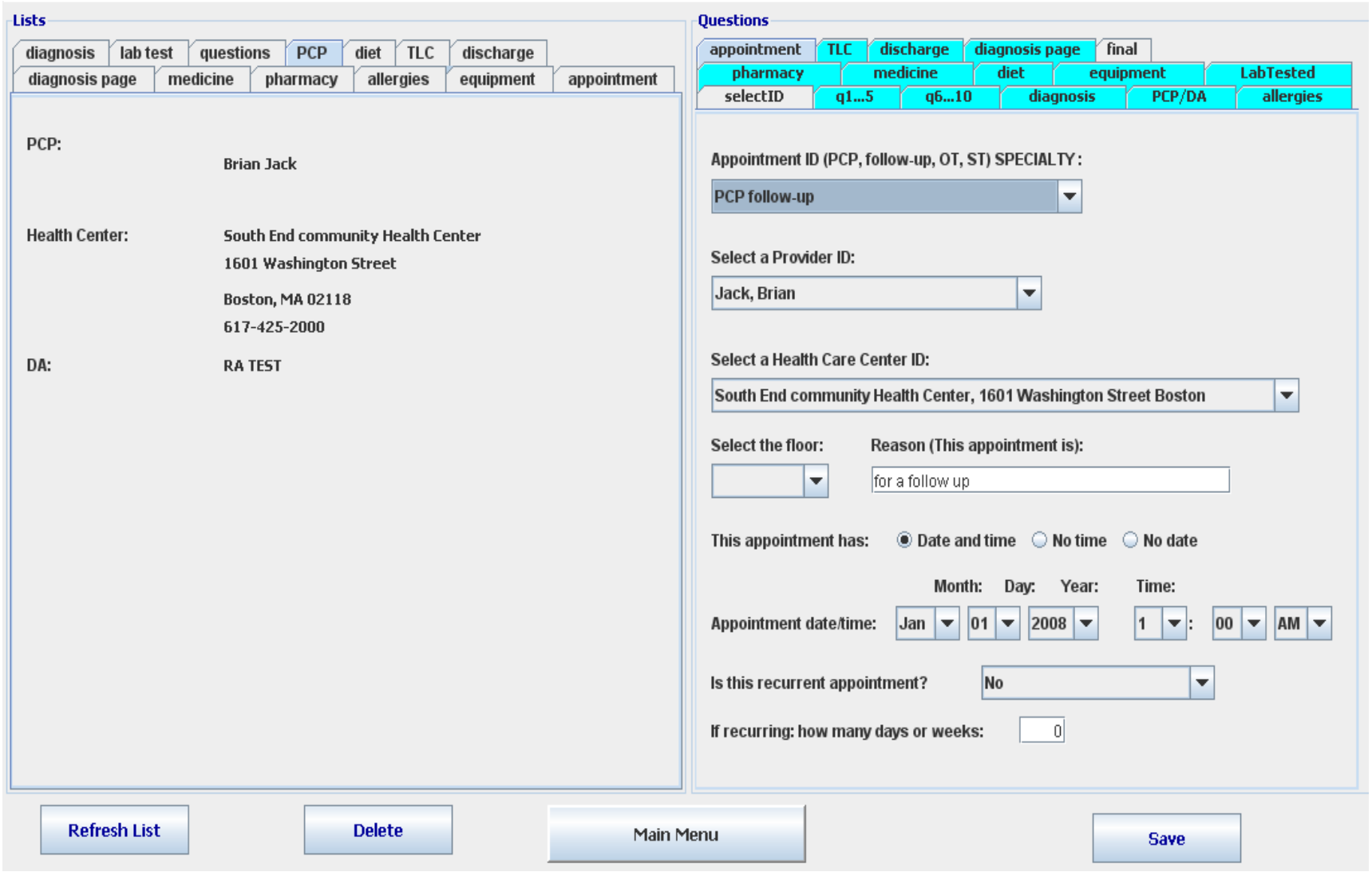
EACH DAY follow this schedule:

RED

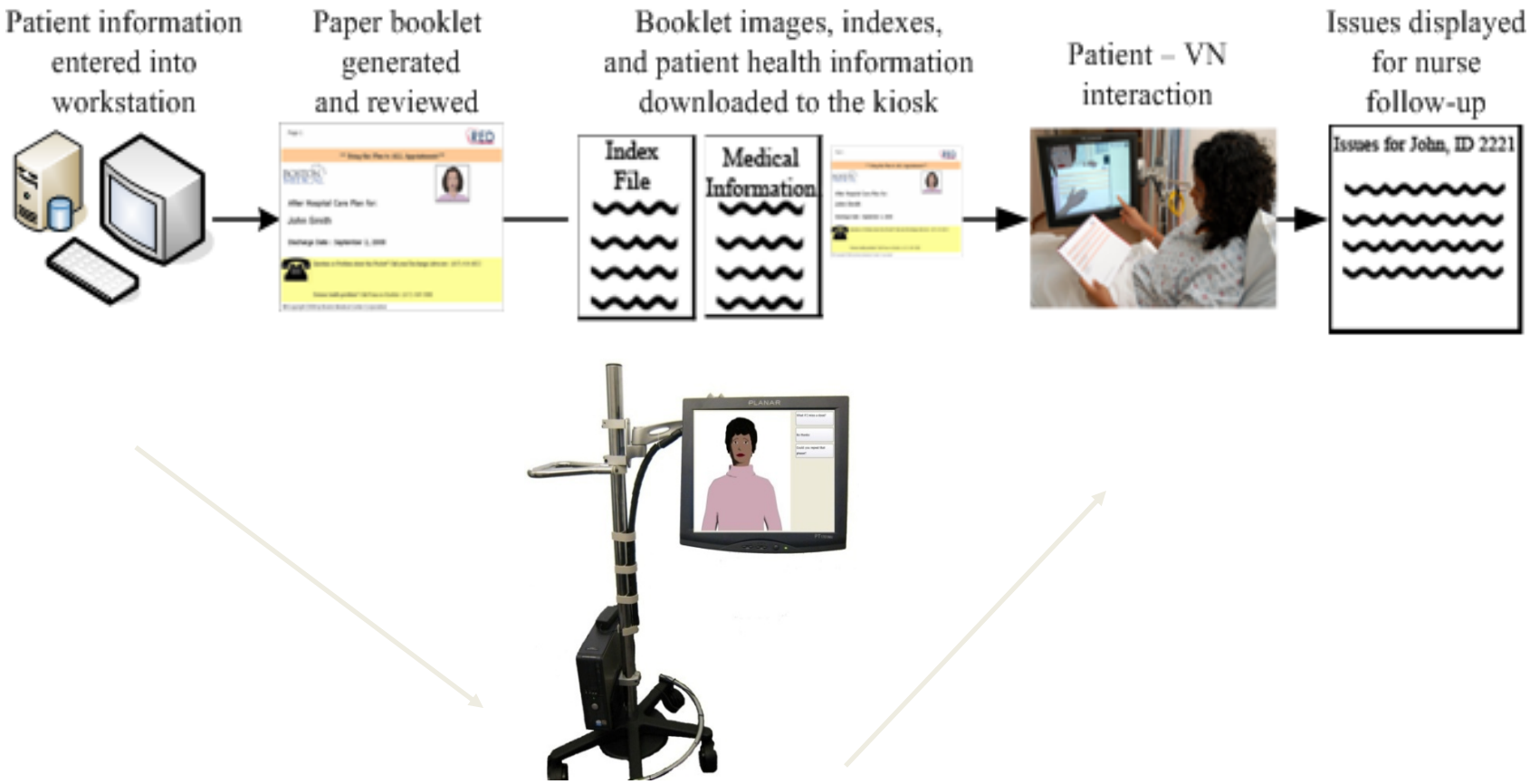
MEDICINES

What time of day do I take this medicine?	Why am I taking this medicine?	Medication name Amount	How much do I take?	How do I take this medicine?
	Blood pressure	PROCARDIA XL NIFEDIPINE 90 mg	1 pill	By mouth
	Blood pressure	HYDROCHLOROTHIAZIDE 25 mg	1 pill	By mouth
	Blood pressure	CLONIDINE HCl 0.1 mg	3 pills	By mouth
	cholesterol	LIPITOR ATORVASTATIN CALCIUM 20 mg	1 pill	By mouth
	stomach	PROTONIX PANTOPRAZOLE SODIUM 40 mg	1 pill	By mouth

Workstation for Data Entry



Automated Discharge Workflow



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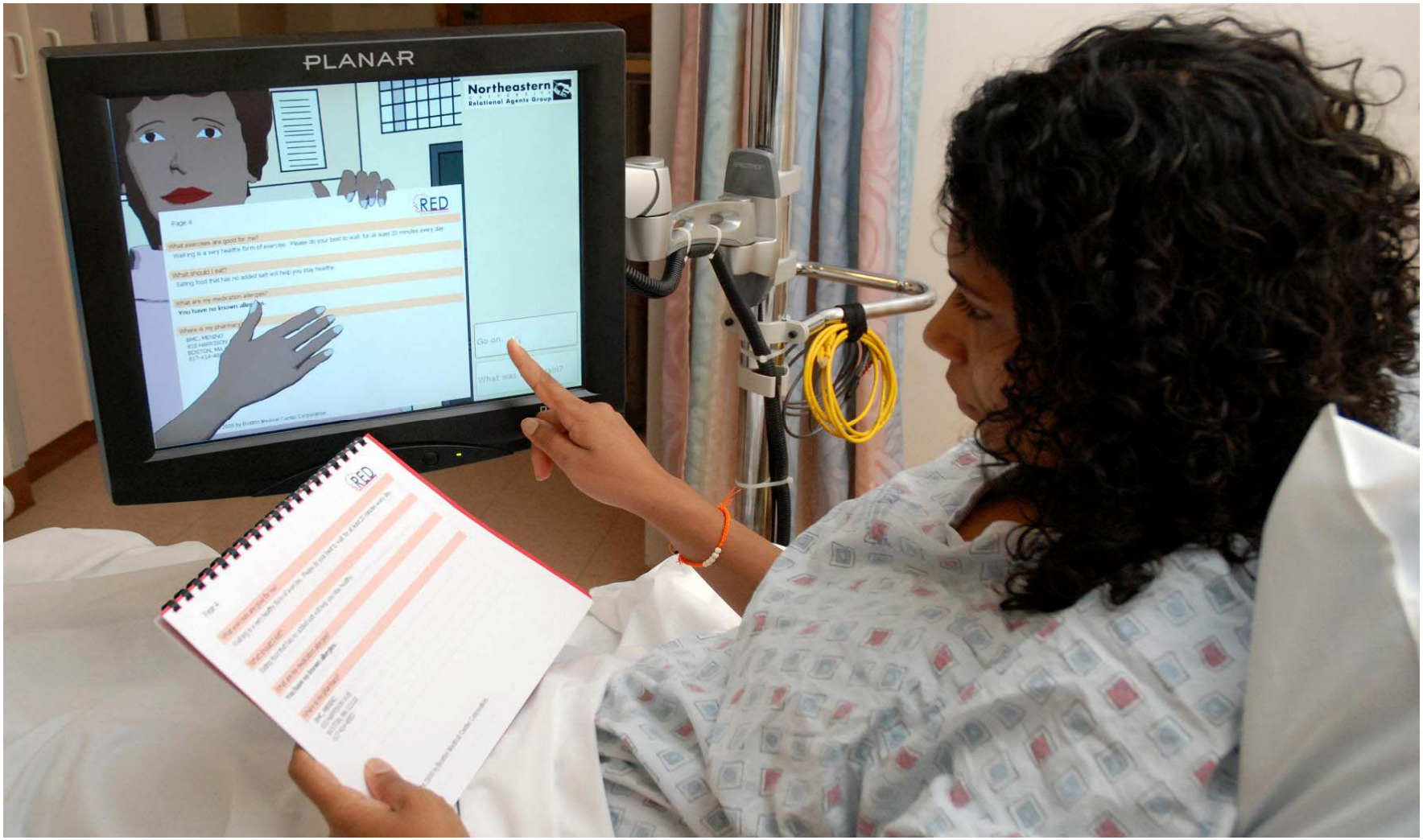
Patient Interacting with Louise



- For the next slide we would like to show a video clip of the “Embodied Conversational Agent” – we will need to organize how to do this for the webinar

Embodied Conversational Agent

http://relationalagents.com/red_demo_4545.wmv

Pilot Study: Self-Report Ratings of the Virtual Nurse (mean (SD))

QUESTION	Rating Scale		Study	
	1	7	First	Second
How *satisfied* were you with Louise	not at all	very	6.1 (1.2)	6.7 (0.7)
How *helpful* was Louise?	not at all	very	6.7 (0.7)	6.5 (0.7)
Was the information *useful*?	not at all	very	6.5 (0.8)	6.6 (0.8)
How *friendly* was Louise?	not at all	very	6.6 (0.7)	6.7 (0.7)
How *natural* was talking to Louise?	artificial	natural	5.4 (1.7)	5.8 (1.7)
How *informative* was Louise?	not at all	very	6.8 (0.6)	6.8 (0.5)
How *easy* was talking to Louise?	difficult	easy	6.4 (1.4)	6.8 (0.7)
How much do you *trust* Louise?	not at all	very	5.6 (1.4)	6.7 (0.8)
How much do you feel that Louise *cares* about you?	not at all	very	5.4 (1.8)	5.8 (1.8)
How did you feel about a computer character giving you health information?	not at all comfortable	completely comfortable		6.3 (1.1)
Would you rather have heard the information from a doctor or nurse?	definitely prefer doctor or nurse	definitely prefer Elizabeth/Louise		5.4 (1.9)
How much did you feel that your talk with Louise helped you get ready to leave the hospital?	not at all	very		6.5 (0.8)

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I'm sick

I hurt myself.

I'm tired.

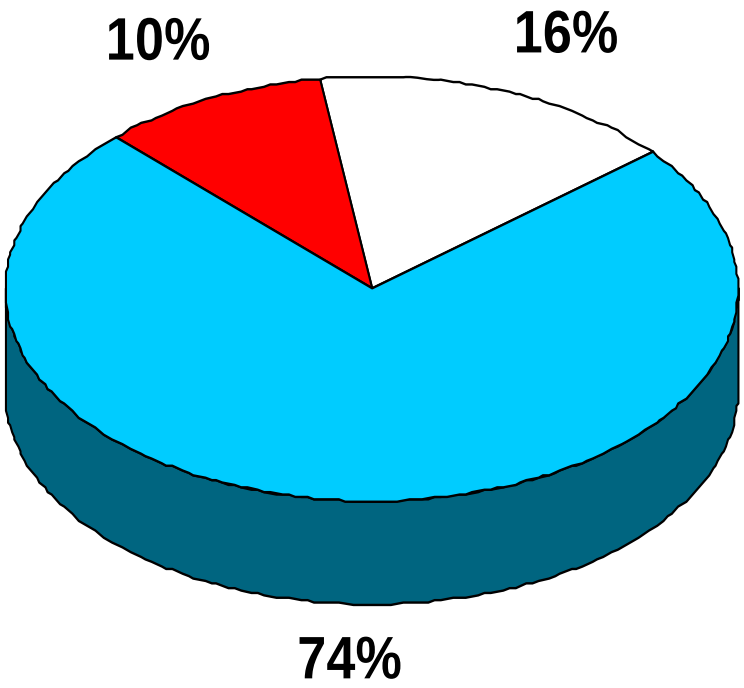
I'm feeling down.

I'm feeling upset.

I'm a little STRESSED OUT.

I'm OK.

Who Would You Rather Receive Discharge Instructions From?



"I prefer Louise, she's better than a doctor, she explains more, and doctors are always in a hurry."

"It was just like a nurse, actually better, because sometimes a nurse just gives you the paper and says 'Here you go.' Elizabeth explains everything."

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Agents Could Be More Effective Than People

1. Relies minimally on text
2. Enhances recall
3. Provides redundant channels of information
4. Listeners pay attention to gestures
5. More flexible and effective than a videotaped lecture
6. Individualized, consistent messages, every time
7. Cost effective – less need for clinician time
8. Easy-to-use
9. No time limit
10. Can assess competency and understanding

Current Work Ambulatory Safety and Quality (ASQ)

- Post-discharge web-based system designed to emulate the post-hospital phone call
- Will have multiple interactions in the days between discharge and first PCP appointment
- Designed to
  - Enhance adherence
  - Monitor for adverse events
  - Prevent adverse events
    - Identifying post-dc “confusion” and rectify
    - Screening system for who needs 2 day phone call
- Beginning a trial of this system

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Conclusions

- Hospital Discharge is low hanging fruit for improvement
- RED is NQF Safe Practice
- RED:
  - Can be delivered using AHCP tool
  - Can decreased hospital use
    - 30% overall reduction
    - NNT = 7.3
    - Saves $412 per patient
- Health IT Could Help
  - could improve delivery
  - further improve cost savings and build the business case

Thank you!

- Brian Jack brian.jack@bmc.org
- Project RED Website
  http://www.bu.edu/fammed/projectred/
- Engineered Care Website
  info@engineeredcare.com

Transitions In Care

Terry Field, D.Sc.

Associate Professor at the University of Massachusetts Medical School and the Associate Director of the Meyers Primary Care Institute

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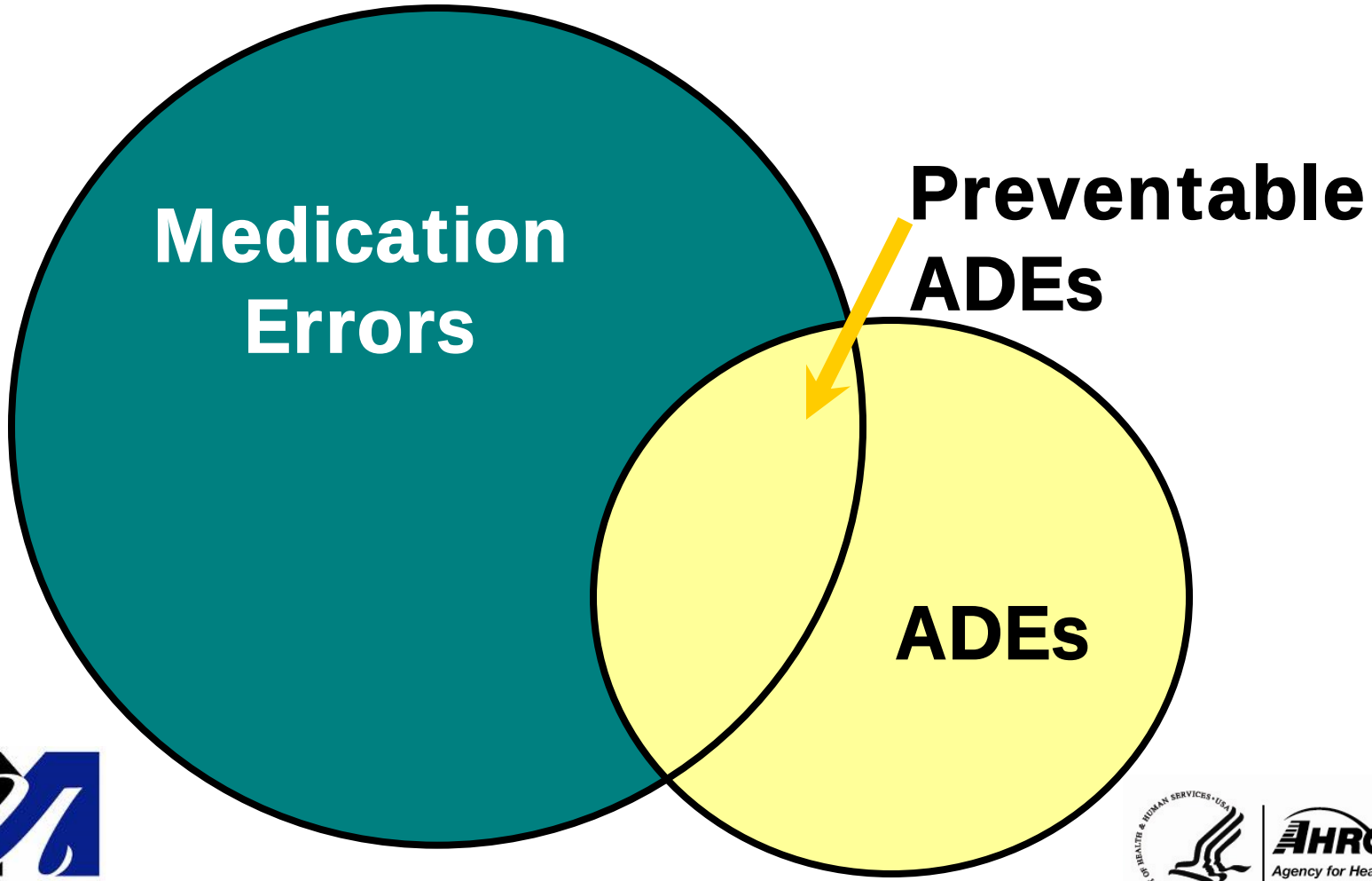
Adverse Drug Events

injury resulting from a medical intervention related to a drug



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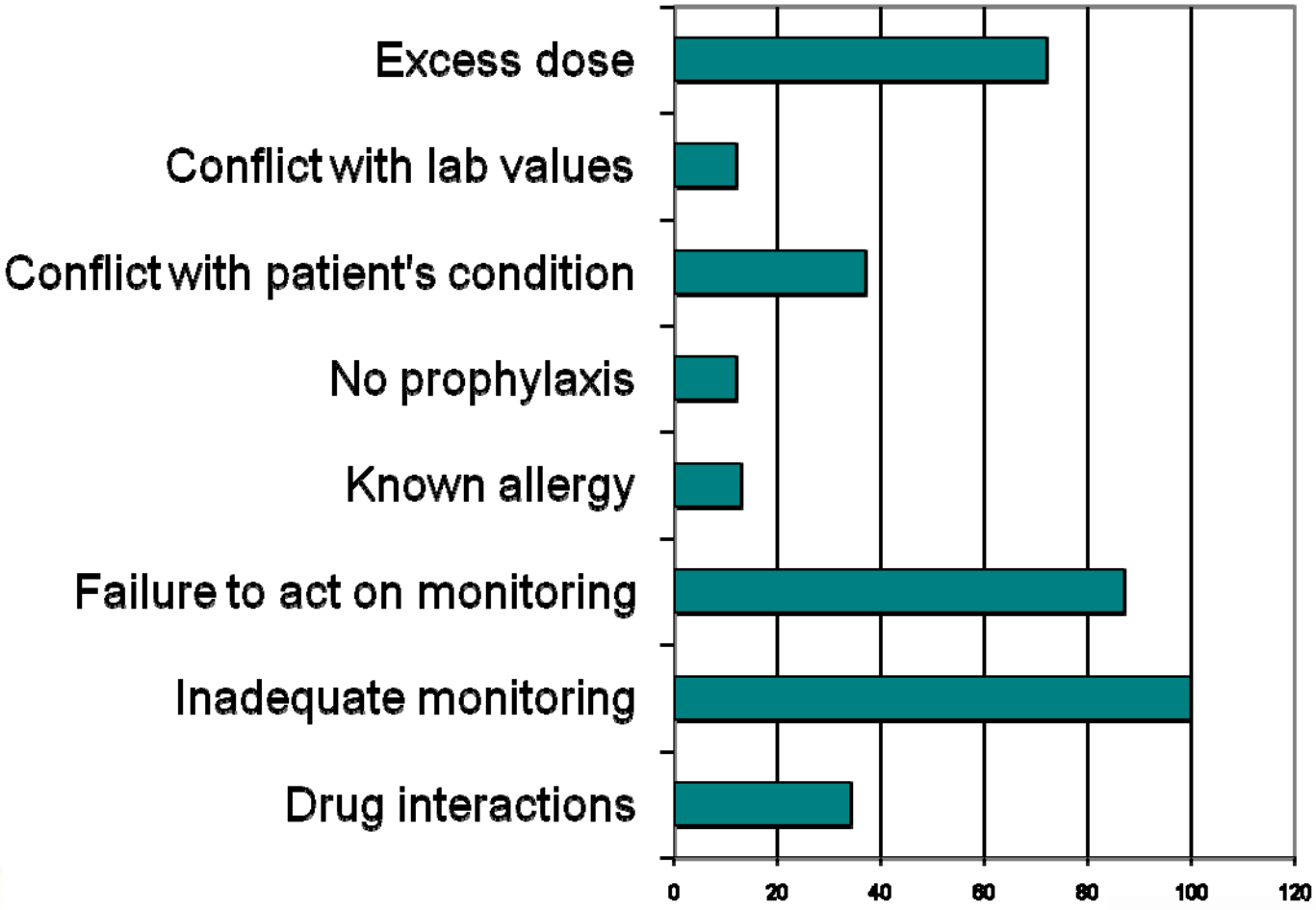
Types of Errors Leading to Serious Preventable ADEs



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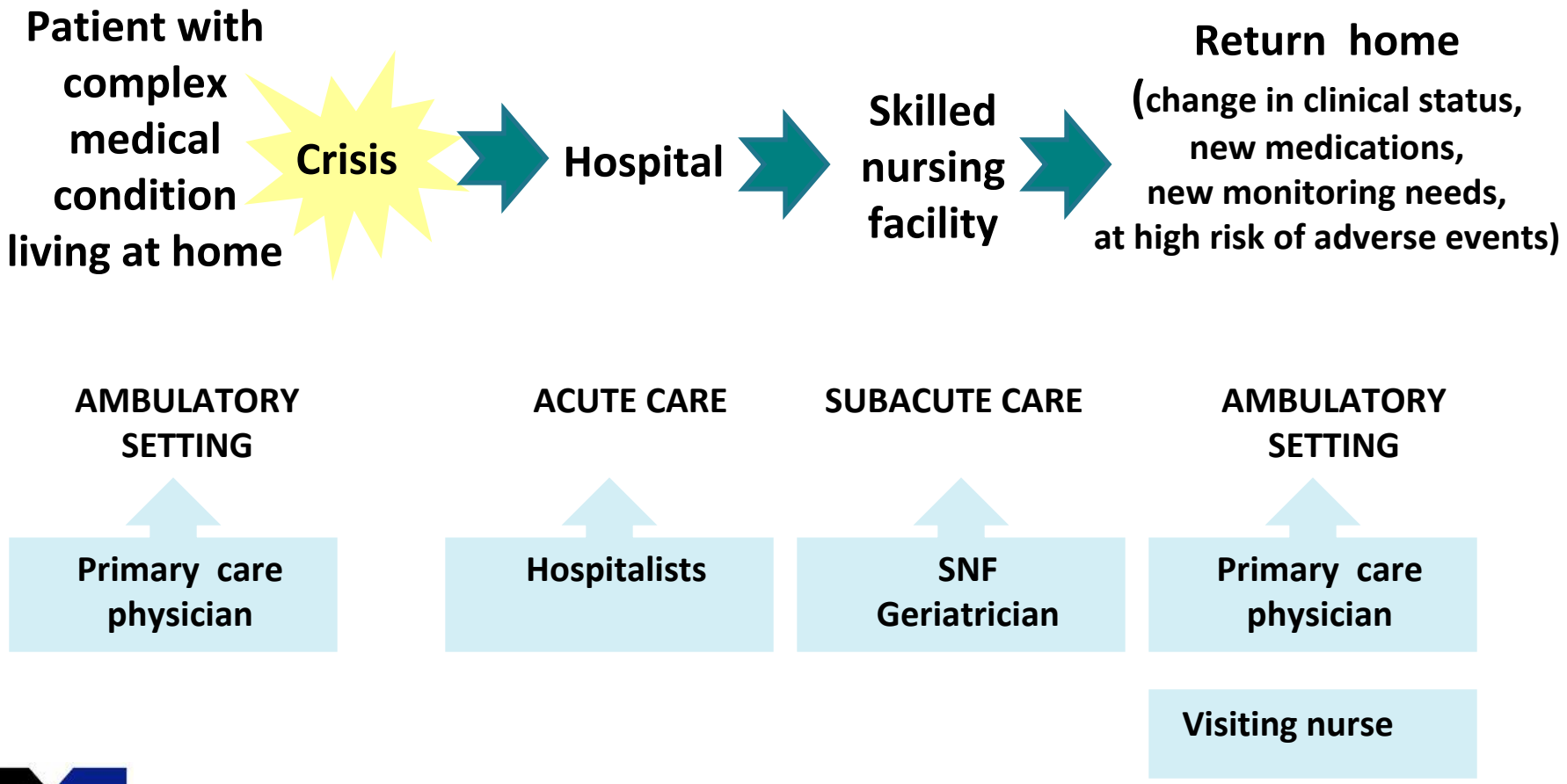
Transitions in Care



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Key Components of Transition from SNF to Home

- Close follow-up after discharge
- Timely transfer of health information including medication lists
- Communicating patient's needs to all health care professionals working with the patient including:
  - medication monitoring recommendations
  - needs for medication education

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Gaps in the Current System

- Lack of follow-up (PCP may not even know patient has been in hospital or SNF)
- No information transmitted about medication changes
- No recognition of possible drug interactions, need for monitoring
- Inadequate information to identify need for patient education

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Potential Roles for Health IT

- Automate scheduling of follow-up visits
- Automate transfer of information about medications
- Provide consistent information to all health care professionals working with the patient
- Provide alerts to PCP about need for monitoring and patient education
- Automatically identify drug interactions, documented allergies, conflicts with lab test results and patient conditions, needs for monitoring
- Alert nurses about need for patient education
- Generate support materials for patient and family

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Current AHRQ Project - Setting

- Multispecialty group practice
  primary care physicians, hospitalists, geriatrician
- EMR
- Patient panel includes many older adults with complex medical needs
- Linkage to primary insurer leads to heavy use of SNFs to shorten hospital stays
- Contracts with visiting nurse associations

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Current AHRQ Project

- Randomized trial
- SNF geriatricians perform medication reconciliation in the EMR at discharge (WIFI and laptops at the SNFs)
- Background program developed to automatically:
  1) identify drug interactions, allergies, conflicts with current conditions and lab results, needs for monitoring
  2) generate e-mails to:
  PCPs with info and alerts
  clinic scheduling staff with need for follow-up visits
  visiting nurse associations with info and alerts
- Evaluation - readmissions, adverse drug events, timely follow-up, costs

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Thank you!

Terry.Field@umassmed.edu

IT and Community Building

Stephen F. Jencks, M.D., M.P.H.
Consultant in Healthcare Safety and Quality

It takes a village

- Community is the opposite of fragmentation
- Building a sense of community responsibility among providers may be the best way to awaken from the nightmare quality of many trips through the healthcare system
- What do we need?
  - Coffee and donuts
  - Community data
  - Community linkages

CARES and information sharing

- An internet-based tool
- Make common data on a patient move seamlessly
- Privacy issues unresolvable if used as a CMS tool.
- So far used only in demonstration.

How Do We Start?

Acknowledge the problem:

- Rehospitalization is not a data error: it is a danger to patients and to the economic viability of health care.
- Clinical trials suggest that 20%-50% of these rehospitalizations are preventable.
- It is increasingly difficult to justify
  - Problems caused by putting provider and physician needs ahead of patient needs.
  - blaming patients for our failure to work with them to make transitions succeed.

Acknowledge the uncertainty

- We are sure that IT communities push in the right direction.
- We are sure that this is a direction we should go.
- We are uncertain how far what we can do today will actually take us.

Accept the need for courage

- Overcoming fragmentation and reducing rehospitalization will be really hard work.
- Those who are comfortable with the status quo will resist change actively and passively.
- We have momentum and allies as never before.
- And a word from a sage.

Some useful web sites

- http://www.cfmc.org/caretransitions/default.htm
- http://www.ihi.org/ihi/search/searchresults.aspx?searchterm=staar&searchtype=basic&Start+Search.x=0&Start+Search.y=0
- http://www.hospitalmedicine.org/ResourceRoomRedesign/RR_CareTransitions/CT_Home.cfm
- http://www.H2HQuality.org
- http://www.caretransitions.org/
- http://www.transitionalcare.info/

Thank you!

steve.jencks@comcast.net

Questions & Answers

Our Panel:

Terry Field, D.Sc., is an Associate Professor at the University of Massachusetts Medical School

Brian Jack, M.D., Associate Professor and Vice Chair Department of Family Medicine, Boston University School of Medicine

Stephen F. Jencks, M.D., M.P.H., Consultant in Healthcare Safety and Quality

Coming Soon!

Our Next Event

A webinar examining health information technology and **Patient Centered Care**

Stay tuned for exact date and time and information on how to register

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http://healthit.ahrq.gov

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