THE DISPARITIES SOLUTIONS CENTER
One Goal – High Quality Care for All

HRET
HEALTH RESEARCH & EDUCATIONAL TRUST
In Partnership with AHA

# Addressing Disparities in Hospital Readmissions: Developing Strategies for Diverse Populations

**Thursday, April 28**
**3:00 - 4:30 pm EST**
**2:00 – 3:30 pm CST**
**1:00 – 2:30 pm MST**
**12:00 – 1:30 pm PST**

This web seminar will begin momentarily.

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**Addressing Disparities in Hospital Readmissions: Developing Strategies for Diverse Populations**

**Brian Jack, MD**
Professor and Vice Chair, Department of Family Medicine, Boston University School of Medicine/Boston Medical Center, Boston, MA

**Richard Balaban, MD**
Associate Chief of Hospital Medicine, Cambridge Health Alliance; Assistant Professor of Medicine, Harvard Medical School; and BOOST Mentor, Society of Hospital Medicine, Cambridge, MA

**Rohit Bhalla, MD, MPH**
Chief Quality Officer, Montefiore Medical Center, Bronx, NYC

**Joseph R. Betancourt, MD, MPH**
Director, The Disparities Solutions Center at MGH
**Moderator**

## Brian Jack, MD

**Brian Jack, MD,** is Professor and Vice Chair for Academic Affairs in the Department of Family Medicine at Boston University School of Medicine / Boston Medical Center. Dr. Jack graduated from the University of Massachusetts Medical School and completed his residency training at the Brown University. He completed a fellowship at the University of Washington. Dr. Jack has authored over 90 peer reviewed papers or book chapters, and is PI on grants from HRSA, CDC, AHRQ, NHLBI and HRSA.

For his work relating to improving patient safety at hospital discharge (Project RED), he received the "Excellence in Patent Education Innovation" and the AHRQ "Patient Safety Investigator of the Month". In 2009, he was selected as one of 20 nationally to *HealthLeaders* magazine's "People Who Make Healthcare Better" list. He has also received the CDC "Partner in Public Health Improvement" award (only one award is given to an individual outside the CDC each year), and was listed as among "Boston's Best Doctors" for 2010. Dr. Jack is clinical director of a Kellogg Foundation funded program in Lesotho that aims to improve the quality of district health services and where he has initiated a family medicine training program. He has served as a consultant to USAID, the World Bank, the US Department of State and the Rockefeller foundation on the development of primary care in Lesotho, Hungary, Albania, Jordan, Romania, and Vietnam.

## Richard Balaban, MD

**Richard Balaban, MD,** attended medical school at The George Washington University School of Medicine, and completed his residency in Internal Medicine at the Deaconess Hospital in Boston. He has worked clinically and administratively in both the inpatient and outpatient settings, which has informed his work in care transitions. Dr. Balaban currently serves as the Associate Chief of Hospital Medicine at Cambridge Health Alliance. In addition, he co-chairs the Care Transitions Committee, the Multidisciplinary Case Review Committee, and serves on the Department of Medicine Quality Improvement Team. He is currently evaluating cost effective strategies to improve care transitions and to reduce readmissions through the use of community health workers.

## Rohit Bhalla, MD, MPH

**Rohit Bhall, MD, MPH,** oversees performance and quality improvement activities for Montefiore, an academic medical center and integrated delivery system in the Bronx, New York. The Bronx is a highly diverse county, with some 85% of its residents of African-American/Black race or Hispanic/Latino ethnicity. It is one of the poorest urban counties in the US, with nearly 30% of residents living below federal poverty level.

In his role as Chief Quality Officer, Dr. Bhalla has developed measurement approaches and led organizational initiatives to improve performance and quality. These have included efforts in the arenas of accountable and preventive care, patient and medication safety, diabetes and cardiovascular care, organ transplantation, patient and provider satisfaction, and healthcare disparities. His recent grant-funded projects have focused on cardiovascular care for minorities, pay for performance, and computerized clinical decision support. His external roles include serving on the editorial board of the American Journal of Medical Quality and as Chairperson of the Greater New York Hospital Association Quality and Outcomes Research Committee. Dr. Bhalla is a graduate of the six-year BA/MD program of the Boston University School of Medicine and is board certified in Internal Medicine and in Public Health/General Preventive Medicine.

# The ReEngineed Discharge

## Reducing 30 Day All Cause Rehospitalization Rates

***Disparities Solutions Center***
***Massachusetts General Hospital***
***Health Research and Educational Trust of the AHA***
***April 28, 2011***
***3-4:30 PM***

Brian Jack MD
Professor and Vice Chair
Department of Family Medicine /
Boston University School of Medicine

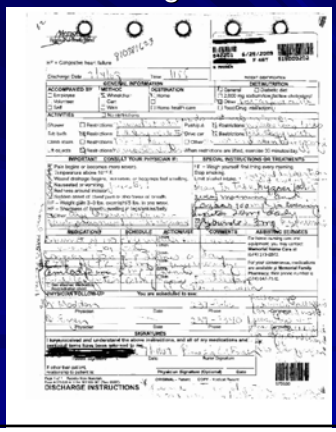
## "Perfect Storm" of Patient Safety

The hospital dc is non-standardized and marked with poor quality.

- **Loose Ends**
- **Communication**
- **Poor Quality Info**
- **Poor Preparation**
- **Fragmentation**
- **Great Variability**

- 20% of patients have an Adverse Event within 30 days
- 20% of Medicare patients readmitted within 30 days
- In 2006, 39.5 million hospital discharges with costs of $329.2 billion!

## A Real Discharge Instruction Sheet



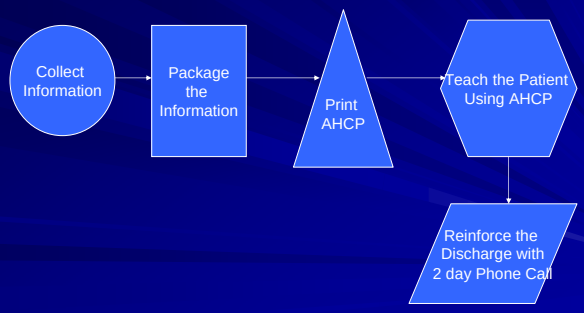
## RED Checklist

**Adopted by National Quality Forum as Safe Practice-15**

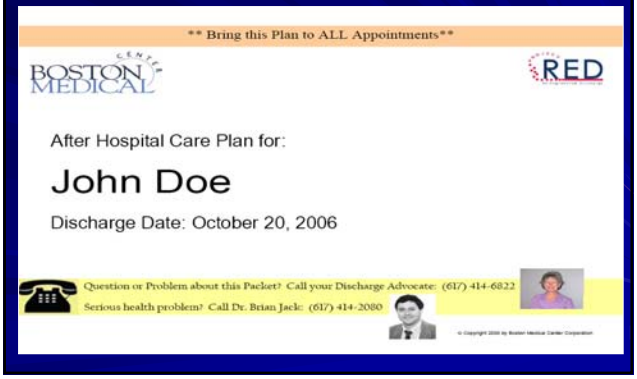
Eleven mutually reinforcing components:

1. Patient education throughout hospital course
2. Schedule follow-up appointments – physician visits & tests
3. Follow up on Outstanding test results
4. Organize Post-discharge services
5. Confirm medication plan – reconcile discharge medications
6. Reconcile discharge plan with national guidelines
7. Review steps for what to do if problem arises
8. Transmission of Discharge summary to PCP
9. Assess patient understanding of dc plan
10. Give written discharge plan
11. Provide Telephone Reinforcement

## How Does RED Work?




COVER PAGE


** Bring this Plan to ALL Appointments**

BOSTON MEDICAL CENTER

RED

After Hospital Care Plan for:

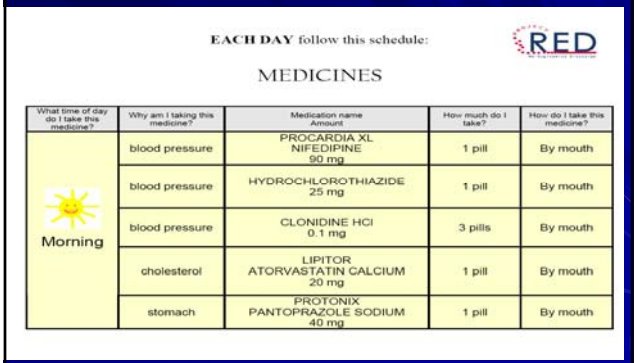
John Doe

Discharge Date: October 20, 2006

Question or Problem about this Packet? Call your Discharge Advocate: (617) 414-6822

Serious health problem? Call Dr. Brian Jack: (617) 414-2080

MEDICATION PAGE (1 of 3)


**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? |
|---|---|---|---|---|
| Morning | 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 |

MEDICATION PAGE (3 of 3)

| | | | | |
|---|---|---|---|---|
| Evening | Infection in eye | VIGAMOX<br>MOXIFLOXACIN HCl<br>0.5 % soln | 1 drop | In your left eye |
| Bedtime | Blood pressure | CLONIDINE HCl<br>0.1 mg | 3 pills | By mouth |
| If you need it for headache | headache | TRAMADOL HCl<br>50 mg | 1-2 pills<br>Every 6 hours<br>If you need it | By mouth |
| If you need it for chest pain | Chest pain | NITROGLYCERIN<br>0.4 mg | 1 pill every 5 minutes<br>(if need more than 3 pills, call 911) | Under your tongue |
| If you need it to stop smoking | To stop smoking | NICORELIEF<br>NICOTINE POLACRILEX<br>4 mg gum | Gum | chew |
| If you need it for headaches | headache | PERCOCET<br>OXYCODONE-ACETAMINOPHEN<br>5-325 mg | 1 pill<br>3 times each day<br>If you need it | By mouth |

APPOINTMENT PAGE

**** Bring this Plan to ALL Appointments****

John Doe

What is my main medical problem?

Chest Pain

When are my appointments?

| Tuesday,<br>October 24th<br>at 11:30 am | Thursday,<br>October 26th<br>at 3:20 pm | Wednesday<br>November 1st<br>at 9:00 am |
|---|---|---|
| Dr. Brian Jack<br>Primary Care Physician<br>(Doctor) | Dr. Jones<br>Rheumatologist | Dr. Smith<br>Cardiologist |
| at Boston Medical Center<br>ACC – 2nd floor | at Boston Medical Center<br>Doctor's Office Building<br>4th floor | at Boston Medical Center<br>Doctor's Office Building<br>4th floor |
| For a Follow-up appointment | For your arthritis | to check your heart |
| Office Phone #:<br>(617) 414-2080 | Office Phone #:<br>(617) 638-7460 | Office Phone #:<br>(617) 555-1234 |

APPOINTMENT CALENDAR

October 2006

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20<br>Left hospital | 21 |
| 22 | 23<br>Pharmacist will call today or tomorrow | 24<br>Dr. Jack<br>at 11:30 am<br>at Boston Medical Center<br>ACC – 2nd floor | 25 | 26<br>Dr. Jones<br>at 3:20 pm<br>at Boston Medical Center<br>Doctor's Office Building – 4th floor | 27 | 28 |
| 29 | 30 | 31 | | | | |

PATIENT ACTIVATION PAGE

**Questions for**
**Dr. Jack**
For my appointment on
**Tuesday, October 24th at 11:30 am**

**Check the box and write notes to remember what to talk about with Dr. Jack**

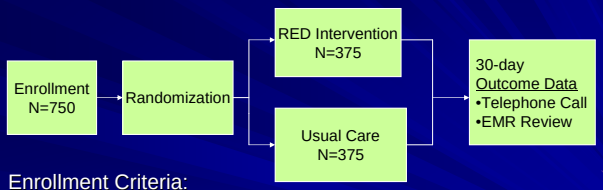
I have questions about:

- ☐ my medicines _____
- ☐ my pain _____
- ☐ feeling stressed _____

What other questions do you have? _____

Dr. Jack: These tests were outstanding at discharge:
Stress Test done on October 24th and Blood Cultures done on October 20th.

# Methods-
# Randomized Controlled Trial



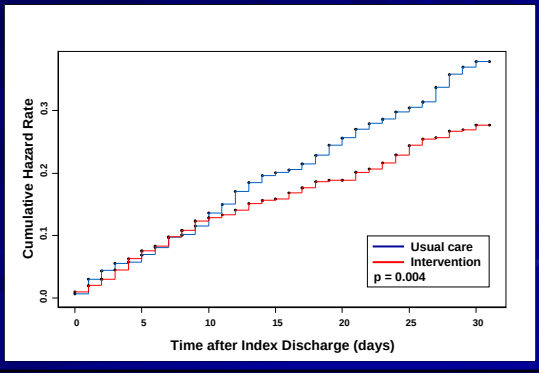

Enrollment Criteria:
- •English speaking
- •Have telephone
- •Able to independently consent
- •Not admitted from institutionalized setting
- •Adult medical patients admitted to Boston Medical Center (urban academic safety-net hospital)

# 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

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




# 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

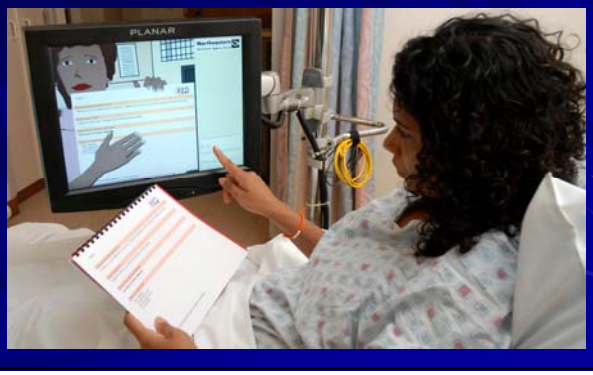
## Using Health IT to Overcome Challenge of Clinician Time

Virtual Patient Advocate

- Emulate face to face communication
- Develop therapeutic alliance
  - Empathy
  - Gaze
  - Posture
  - Gesture
- Tailored
- Determine Competency
- Print Reports

Characters: Louise (L) and Elizabeth (R)

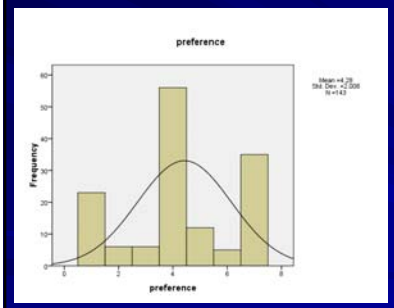
## Patient Interacting with Louise




## Embodied Conversational Agent

http://relationalagents.com/red_demo_4545.wmv


## Who Would You Rather Receive Discharge Instructions From?




**36% prefer agent**
**48% neutral**
**16% prefer doc or nurse**

*"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."*

1=definitely prefer doc, 4=neutral, 7=definitely prefer agent

## Final Comment

- Hospital Discharge is low hanging fruit
- 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
  - Provide time and cost savings
  - Can be 'scaled' for far reaching impact

## Thank You!

Questions

brian.jack@bmc.org

Project RED Website

http://www.bu.edu/fammed/projectred/

## Improving Care Transitions: From Hospital to Home

**Richard Balaban, MD**

Associate Director of Hospital Medicine
Cambridge Health Alliance

Assistant Professor of Medicine
Harvard Medical School

BOOST Mentor
Society of Hospital Medicine

## Cambridge Health Alliance

- Public health care system that includes;
  - Two community teaching hospitals;
  - 10 community health centers
- Serves a large, diverse patient population.
  - Nearly 1/3 are non-English speakers
  - Highest % of publically financed low-income patients in Massachusetts
- In 2006; readmission rates > 20%

## Redefine hospital discharge …

## as an Inpatient-to-Outpatient Transfer

## Inpatient-to-Outpatient Transfer

1. Better prepare patients and their caregivers
2. Engage primary care
3. Establish clear accountability for patient care

## CHA – Five Step Discharge-Transfer

1. Creation of Home Care Plan (by hospital MDs + RNs)
   - Personalized discharge instructions
   - Easy-to-read / user-friendly

## CHA – Five Step Discharge-Transfer

1. Creation of Home Care Plan
2. Home Care Plan reviewed with patient

## CHA – Five Step Discharge-Transfer

1. Creation of Home Care Plan
2. Home Care Plan reviewed with patient
3. Home Care Plan electronically transmitted to the RNs at the patient's primary care site.

## CHA – Five Step Discharge-Transfer

1. Creation of Home Care Plan
2. Home Care Plan reviewed with patient
3. Home Care Plan electronically transmitted to the RNs at the patient's primary care site
4. Telephone outreach to patient by primary care RN
   - Establish accountability for patient care.
   - Assess patient's medical condition and psychosocial issues

## CHA – Five Step Discharge-Transfer

1. Creation of Home Care Plan
2. Home Care Plan reviewed with patient
3. Home Care Plan electronically transmitted to the RNs at the patient's primary care site
4. Telephone outreach to patient by primary care RN
5. PCP reviews Home Care Plan and telephone outreach

## Phase 1: Randomized-Controlled Pilot Study

- Intervention significantly improved rates of outpatient follow-up
  - 85% in intervention group vs. 59% of control group had a PCP appointment within 21 days
- Intervention increased completion rate of outpatient work-ups

Balaban et al. JGIM 2008;23(8):1228-1233

## Phase 2: CHA wide implementation

- 5-step approach used with all discharges from medical service at both hospitals.
- Within two years of initiating the five step approach, our readmission rates have been reduced from 20% to 15% (25% reduction).

## Lessons Learned

- Strong support from senior leadership
  - Believe in the process
  - Low-cost (no-added personnel) ; big return
- Involves the entire range of inpatient and outpatient system
  - Nursing
  - Case Management
  - Quality Improvement
  - IT

## More lessons learned ...

- It can't all be done in the hospital
- Central role of our primary care RNs
  - Over 50% of phone calls result in a nursing intervention
  - Nurses enjoy their new responsibilities
- One size doesn't fill all ... our higher risk patients still need more

## Phase 3: Patient Navigator Intervention

- Community Health Worker targets high risk patients
- Initial hospital contact followed by telephone outreach
- Randomized-controlled pilot study (with Department of Population Medicine, HMS)
- Encouraging results demonstrate decrease in readmissions

## What's next? Conversation with patients

- Why did you return to the hospital…?
- What could we have done better to prevent you from being readmitted?
- Going beyond "non-compliance"

## Richard Balaban, MD

- Associate Director of Hospital Medicine
  Cambridge Health Alliance
- Assistant Professor of Medicine
  Harvard Medical School
- BOOST Mentor
  Society of Hospital Medicine

Please contact me at:
rbalaban@challiance.org

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## Question and Answer Period

## Addressing Disparities in Hospital Readmissions: Developing Strategies for Diverse Populations

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## Thank you for your participation.

**For more information, please visit the Disparities Solutions Center website at www.mghdisparitiessolutions.org or the Health Research and Educational Trust of the American Hospital Association at www.hret.org.**