POSTER MADNESS
StepStream: A Social Fitness Intervention for Middle School Students

Andrew D. Miller, Jessica A. Pater, Elizabeth D. Mynatt
EMR-sim: a computer-based simulation for enhancing residents’ competence in 7 computerized primary care settings

Samer Elamrousy, Sharon Domb, Elizabeth Borycki, Shmuel Reis, Andre Kushniruk, Amitai Ziv, Aviv Shachak
EMR-sim
Set of computer game-like simulations for enhancing family medicine residents’ competence in computerized settings

Samer Elamrousy, Sharon Domb, Elizabeth Borycki, Shmuel Reis, Andre Kushniruk, Amitai Ziv, Aviv Shachak
We defined a process for building simulations ...

1. **Learning Objectives and Case Synopsis**

2. **Story Map**

3. **Storyboard**

4. **Simulation Prototype**
We developed 3 simulation prototypes ...
Applying Kanban to Healthcare via Immersive 3D Virtual Reality

Freese, Megan Kinneberg, Ross Tredinnick, F. Daniel Nicolalde
Healthcare settings are complex
Engineering methods can help Kanban Signal
Come and see how we implemented Kanban in VR

Poster: Applying Kanban to Healthcare via Immersive 3D Virtual Reality
Authors: Vito Freese, Megan Kinneberg, Ross Tredinnick, F. Daniel Nicolalde
Perceptions of Breast Cancer Navigation from Survivors and Oncologists

Maia Jacobs, James Clawson, Elizabeth Mynatt
MyJourney Compass: Using Cancer Navigation in a Technology Deployment

MAIA JACOBS
JAMES CLAWSON
BETH MYNATT

GEORGIA INSTITUTE OF TECHNOLOGY
Cancer Navigation

- Trained community health workers who provide individualized support and help patients overcome access to care barriers (provide counseling, medical information, resources but are typically outside of the traditional health system)

- Interact with the healthcare system through a weekly breast tumor conference call to bring together oncologists, nurses, pathologists, radiation specialists, and cancer navigators

- Patients who interacted with cancer navigators appeared to oncologists as being more informed about and more engaged in their disease management
Do deviations from ideal routines cause coordination errors? An exploration of coordination in an ambulatory care setting

Saira N. Haque, Carsten S. Oesterlund, Lawrence M. Fagan,
Do deviations from ideal routines cause coordination errors? An exploration of coordination in an ambulatory care setting

Saira N. Haque, PhD, MHSA
Senior Health Informaticist
Center for the Advancement of Health IT
Importance of routines

- Routines – set of interrelated activities
- Routines are used to coordinate interdisciplinary healthcare work

Ideal-type routine versus routine in practice

- How do they differ?
- What are the implications of differences?

Studied these questions by observing routines in practice in an interventional cardiology unit of a community hospital
Relational Coordination and Invisible Work

Relational coordination

Quality of communication and relationships

People don’t realize how hard we work

Invisible work

Work that is needed to keep routines moving – glue that holds organizations together

Relationships
- Shared goals
- Shared knowledge
- Mutual respect

Communication
- Frequent
- Timely
- Accurate
- Problem-solving
Observed routines, detailed differences from ideal
Administered relational coordination survey

Where Relational Coordination is HIGH, invisible work can stay invisible, whether or not there are changes from the ideal-type routine
Where Relational Coordination is LOW, we must uncover invisible work when there are changes from the ideal-type routine
For More Information

Saira Haque
Senior Health Informaticist
Center for the Advancement of Health IT
919.316.3442
shaque@rti.org
Differences for users with and without Major Depressive Disorder

Colleen Stiles-Shields, Enid Montague, Jenna Duffecy, David C. Mohr
BITs for medication adherence:
Differences for users with and without Major Depressive Disorder
Using EventFlow to Analyze Task Performance During Trauma Resuscitation

Elizabeth A. Carter, Randall S. Burd, Megan Monroe, Catherine Plaisant, Ben Shneiderman
Using EventFlow to Analyze Task Performance During Trauma Resuscitation

Elizabeth A. Carter, PhD, MPH
Division of Trauma and Burn Surgery

November 16, 2013
### Pediatric Trauma Resuscitation Data Collection Tool

#### Primary Survey Tasks (Stabilization of Patient)
- **Airway**
- **Breathing**
- **Circulation**
- **Disability**
- **Exposure**

#### Secondary Survey Tasks (Head to Toe Examination)

#### Nursing Tasks
- Vital Signs

---

**Primary Survey**

<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway</td>
<td></td>
</tr>
<tr>
<td>Breathing</td>
<td></td>
</tr>
<tr>
<td>Circulation</td>
<td></td>
</tr>
<tr>
<td>Disability</td>
<td></td>
</tr>
<tr>
<td>Exposure</td>
<td></td>
</tr>
</tbody>
</table>

---

**Secondary Survey**

- Airway
- Breathing
- Circulation
- Disability
- Exposure
EventFlow Data Visualization Tool
1. Selected only primary survey data
2. Changed colors
3. Aggregated two variables for pulse
4. Aligned by beginning of secondary survey
5. Filtered by subsequence of GCS (blue task) occurring after start of secondary survey (indicative of a performance error)
Initial Lessons for Developing a User-Interface for Querying Federated Heterogeneous Data Sources

Ramkiran Gouripeddi, Randy Madsen, Richard L. Bradshaw, N. Dustin Schultz, Ryan Butcher, Phillip B. Warner, Peter Mo, Bernard A. LaSalle, Julio C. Facelli
Initial Lessons for Developing a User-Interface for Querying Federated Heterogeneous Data Sources

Ram Gouripeddi, MBBS, MS, Randy Madsen, BS, Richard L. Bradshaw, MS, N. Dustin Schultz, MS, Ryan Butcher, MS, Phillip B. Warner, MS, Peter Mo, MS, Bernard A. LaSalle, BS, Julio C. Facelli, PhD

Department of Biomedical Informatics and Biomedical Informatics Core of the CCTS, University of Utah, Salt Lake City, USA
OpenFurther Architecture

- Federated Query Engine
- Data Source Adapters
- Query Tool
- Admin & Security Components
- Virtual Identity Resolution on the GO (VIRGO)
- Quality & Analytics Framework
- Metadata Repository
- Terminology/Ontology Server

We will presenting more about OpenFurther, at our presentation: FURTHEr: An Infrastructure for Clinical, Translational and Comparative Effectiveness Research on 19-Nov-2013 at 10:30 AM in Lincoln West.
OpenFurther @ University of Utah
Sharing Context & Metadata

• Users have difficulty understanding heterogeneous data.
• Working with heterogeneous data require sharing more complex data model representations with end users.
• Query tool needs sufficient context and metadata embedded into workflows.
• For more - please come over to my poster!
“Collaboration Spaces”

and

Health Information Technologies

Madhu Reddy, Craig Kuziemsky, Elizabeth Eikey
“Collaborative Spaces” & Health Information Technologies

Madhu Reddy PhD¹, Craig Kuziemsky PhD², Elizabeth Eikey BS¹
¹The Pennsylvania State University, University Park, PA, USA ²University of Ottawa, Ottawa, ON, CA

- Systematic literature review – from 1990 to 2013
- “Collaboration Space”
- Issues of collaboration
- Technology for collaboration
Who Responds Best to a Virtual Exercise Coach? Demographics and Patterns of Use as Predictors of Outcome

Zhe Zhang, Timothy Bickmore, Rebecca Silliman, Michael Paasche-Orlow
Who responds best to a virtual exercise coach?

Zhe Zhang, Timothy Bickmore
Northeastern University

Rebecca Silliman, Michael Paasche-Orlow
Boston University of Medicine
Q1: Are there recurrent patterns of longitudinal system use?

Q2: Whether particular patterns are predictive of positive health outcomes?

Q3: Is the patient characteristics associated with the system use?
Elder Walk

- Twelve months
- > 200 participants
Results

- Patterns of Longitudinal System Use vs. Health Outcomes

<table>
<thead>
<tr>
<th>Health Outcomes</th>
<th>Adherent Use</th>
<th>Declining Use</th>
<th>Random Use</th>
<th>Non-Adherent Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Step Counts Change</td>
<td>+894.7</td>
<td>-1047.2</td>
<td>-334.5</td>
<td>+582.1</td>
</tr>
</tbody>
</table>

- System Use vs. Baseline Measurements

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Direction</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9</td>
<td>negative</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td>Health Literacy</td>
<td>positive</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td>Exercise Knowledge</td>
<td>positive</td>
<td>p&lt;.05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurement</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td>BMI</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td>SEX</td>
<td>p&lt;.05</td>
</tr>
</tbody>
</table>
Iterative Design of Decision Support Informed by Mixed Methodology

Frederick L. Thum, Nicholas Genes, Min Soon Kim, Laura Rivera, Rosemary Beato, Jared Soriano, Joseph Kannry, Kevin Baumlin, Ula Hwang
Iterative Design of Decision Support Informed by Mixed Methodology

Frederick L. Thum MD
Assistant Professor
Icahn School of Medicine at Mount Sinai
Clinical Decision Support Design

Interventions tested in simulated EHR environment

5 CDSS interventions for pain control

Optimized CDSS interventions

CDSS in production environment

Team meeting and intervention revisions

Testing reviewed by interdisciplinary team and feedback coded

5 CDSS interventions for pain control
CDSS Design Revision

BestPractice Advisory - Beersy,Ess

- The pain score for this patient has not been updated in over 4 hours. Please update the pain score by clicking on the "Reassess pain in the vitals section" OR to order analgesics check "Abdominal Pain for Elderly Patients" and click "Accept" OR provide a reason you're not going to do that right away.

- The patient has a pain score of 10. No analgesics have been ordered.

- The patient has a pain score of 10.

Mount Sinai

Department of Emergency Medicine
This study was supported by:
NIA grant # 5R21AG040734-02
Mount Sinai GCO# 10-1414(0001)(02)EM
New York State Empire Clinical Research Investigator Program
Issues and Opportunities of adopting Social Media in Health Disparities Interventions: Hepatitis B in the Asian American Community

Jing Ai
in
Health Disparities Interventions
(Case Study on Hepatitis B)

Jing Ai
Roger Williams University
Table 1. Challenges faced by Hepatitis B infected Asian Americans

<table>
<thead>
<tr>
<th>Cultural barriers</th>
<th>Financial barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bias/Stigma associated with Hepatitis B</td>
<td>Low socioeconomic status</td>
</tr>
<tr>
<td>Limited education</td>
<td>Lack of health insurance</td>
</tr>
<tr>
<td>Limited English proficiency</td>
<td></td>
</tr>
<tr>
<td>Negative perceptions of Western medicine</td>
<td></td>
</tr>
<tr>
<td>Non-citizenship</td>
<td></td>
</tr>
<tr>
<td>Spiritual beliefs</td>
<td></td>
</tr>
<tr>
<td>Underrepresentation of health care professionals</td>
<td></td>
</tr>
</tbody>
</table>
Modeling Workflows and Work Products in a Multiple Sclerosis Clinic to Guide the Design of a New User Interface

Andrew B. L. Berry, Craig Harrington, Keith A. Butler, Melissa O. Braxton, Mark Haselkorn, Amy J. Walker, Mark W. Oberle, Chia-Fang Chung, Nikki Pete, W. Paul Nichol
MODELING WORKFLOWS AND WORK PRODUCTS OF A MULTIPLE SCLEROSIS CLINIC TO GUIDE THE DESIGN OF A SUPERIOR USER INTERFACE

Andrew B. L. Berry, Keith A. Butler, Craig Harrington, Mark Haselkorn, et al.
Problem: use of multiple, overlapping information resources

Electronic health record

Treatment plan

Clinic schedule

Statuses of treatment plans
Conceptual work product

Extends conventional *procedural* task analysis with a *declarative* specification of the product of conceptual work – the essential user requirements

State diagram: stages of CWP that user must monitors and alter
Streamlined user interface

- Represents the state of the CWP to the user and gives the user the tools to transform the CWP to its goal state
- Provides required information at the right time
- Highly usable for all case-management
- Eliminates 18% of time spent on chronic care case management
InfoMediator: Weaving clinical expertise in online health communities

Jina Huh
Weaving clinical expertise in online health communities

Jina Huh | Michigan State University
Tailored Informatics for Diet and Exercise (TIDE)

Julie A. Wright, Tanya Nixon Silberg, Bonnie Watson, Galina Lozinski, Jessica Whiteley
Tailored Informatics for Diet and Exercise: The design of a tailored obesity prevention intervention for pediatric primary care

Julie A. Wright, Tanya Nixon Silberg, Bonnie Watson, Galina Lozinski, and Jessica Whiteley
UMass Boston & Boston University Medical School, Boston, MA
Tailored informatics for diet and exercise (TIDE)

- Intervention for the prevention of childhood obesity
- Delivered in pediatric primary care to parent and provider
- Uses behavioral informatics
- Uses tailored messaging
Design Process

Prototyping

- Parents

- Providers

Pre-pilot
Project TIDE Report for Ana

UMass Memorial Medical Center Pediatrics
Dr. Sunshine
55 Lake Avenue North
Worcester MA, 01655
## Ana's Health Report

<table>
<thead>
<tr>
<th>Health Habit</th>
<th>Ana’s levels</th>
<th>What’s Recommended</th>
<th>REC/met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugary Drinks</td>
<td>12 oz.</td>
<td>No sugary drinks or limiting it to 1 serving per day</td>
<td></td>
</tr>
<tr>
<td>Physical Activity</td>
<td>1 hour</td>
<td>Your child needs 1 hour of physical activity each</td>
<td>✓</td>
</tr>
<tr>
<td>Fruits and Vegetables</td>
<td>3 1/2 cups</td>
<td>At least 3 1/2 cups a day</td>
<td>✓</td>
</tr>
<tr>
<td>Television</td>
<td>2 hours</td>
<td>Less than 2 hours of television per day</td>
<td>✓</td>
</tr>
<tr>
<td>100% Pure Fruit Juice</td>
<td>6 oz.</td>
<td>6 oz or less of 100% fruit juice per day.</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Congratulations!** Based on your answers, Ana is meeting the recommendations for physical activity, fruits and vegetables, TV and 100% fruit juice. *Keep up the good work!* These habits are so important to her health and well-being. Read on to find out more about how to help her stay healthy and fit.

**Are You Ready?**

Good news! You are ready to limit the amount of sugary drinks that Ana gets from beverages like fruit drinks. It's a big step for parents to take.

Try thinking more about the benefits of reducing sugar in your child’s diet. Consider taking one small step this week. Keep in mind that it is ok to start slowly. It might not work the first, second or third time...and that's ok!
Project TIDE
Health Report for
Child's name

Health information tailored just for you!

Worcester Medical Center
Dr. Wright
Address

Microsoft

Good news! You are ready to limit the amount of drinks with added sugar <child's name> gets from beverages like soda and fruit drinks. It's a big step for parents to take. Try thinking more about the benefits of reducing sugar in your child’s diet. Sugary foods can get in the way of good-for-you foods. Read on to find out more.

[1D prep low](on high import)
**c_firstname**'s Eating & Activity Results

**recommendations_met**

**Did you know?**

**10 Minutes a Day!**

Here are some strategies that have helped other parents like you:

1. **strategy_1**
2. **strategy_2**
3. **strategy_3**
4. **strategy_4**

Based on the responses you gave, you are the most ready to work on: **ready_work_on**

**ready_help**
Kendra’s Eating & Activity Results

Congratulations, Carmen! Based on your answers you are helping Kendra meet the recommendations for: Sugary Drinks, Television Time and 100% pure fruit juice. Keep up the good work! This is so important to Kendra’s health and well-being. Read on to find out more about how to help her stay healthy and fit.

<table>
<thead>
<tr>
<th>Health Habits</th>
<th>What’s Recommended</th>
<th>Kendra’s Daily Habits</th>
<th>Kendra’s Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugary Drinks</td>
<td>No sugary drinks, or limiting it to 1 serving (6 oz.) per week.</td>
<td>0 oz. a day</td>
<td>😊😊😊😊😊</td>
</tr>
<tr>
<td>100% Pure Fruit Juice</td>
<td>6 oz. or less of 100% fruit juice per day.</td>
<td>About 6 oz. a day</td>
<td>😊😊😊😊 😊</td>
</tr>
<tr>
<td>Television</td>
<td>Less than 2 hours of television per day.</td>
<td>Less than 1 hour a day</td>
<td>😊😊😊😊 😊</td>
</tr>
<tr>
<td>Fruits &amp; Vegetables</td>
<td>At least 3 1/2 cups a day.</td>
<td>1 1/2 cups a day</td>
<td>😊😊😊😊 😊</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>1 hour (60 minutes) of physical activity each day.</td>
<td>13 minutes a day</td>
<td>😊😊😊😊 😊</td>
</tr>
</tbody>
</table>

Good news! You are ready to help Kendra be physically active for 1 hour every day. It can be a big step for most parents to take but keep in mind that you don’t have to get there tomorrow.

Did you know?
There are over 50 benefits of exercising everyday! An hour a day can help kids do better in school and fight off diseases like asthma and diabetes.

40 Minutes a Day!

Here are some strategies that have helped other parents like you:
1. Think about possible daily reminders to be active. Try putting your sneakers by the front door.
2. A good strategy for some kids is to reward them for watching less TV, or you can try rewarding them for being more active.
3. Parents don’t have much time to spare but consider replacing 15 minutes of sitting time with family recreation time.
4. Keep kids active and safe by being active with them or bringing them to community centers.

Based on the responses you gave, you are the most ready to work on: PHYSICAL ACTIVITY
Fast Food: A quick-pick approach for a nutrition diary

Jochen Meyer, Elif Çakır Turgut, Tobias Feith, Susanne Boll
Fast Food
A quick-pick approach for a nutrition diary
Nutrition is a major aspect of healthy living
Diaries are main monitoring tools for nutrition.
Today’s nutrition diaries are tedious to use
Find a balance between effort and data quality
Our approach is both simple and good
Jochen Meyer, Elif Çakır Turgut, Tobias Feith, Susanne Boll

**Fast Food**

A quick-pick approach for a nutrition diary

---

<table>
<thead>
<tr>
<th>Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Nutrition is a major aspect of healthy living</td>
</tr>
<tr>
<td>- Diaries important tools for monitoring dietary behavior</td>
</tr>
<tr>
<td>- Database-driven or photo-based diaries feel to use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Challenge:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Find the right balance between effort of use and precision of data</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>- User centered design involving experts and end-users</td>
</tr>
<tr>
<td>- Fast and simple, quick-pick model for food input</td>
</tr>
<tr>
<td>- Tap and choose from pre-defined small selection</td>
</tr>
<tr>
<td>- Using established 'food pyramid' model</td>
</tr>
<tr>
<td>- Categories of food, e.g., cereals, meat, vegetables</td>
</tr>
<tr>
<td>- Amount of food in portions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Android application for logging and analysis</td>
</tr>
<tr>
<td>- Logging food per portion on a grid</td>
</tr>
<tr>
<td>- Vertical axis indicating time and meal</td>
</tr>
<tr>
<td>- Analyzing in a food pyramid</td>
</tr>
<tr>
<td>- Average number of portions per category logged over a given period of time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 6 users (3m, 3f) used the system for one week</td>
</tr>
<tr>
<td>- They found the system easy, attractive, unobtrusive</td>
</tr>
<tr>
<td>- Logging took an average 4 minutes per day</td>
</tr>
<tr>
<td>- Often shortly after meal-time</td>
</tr>
<tr>
<td>- Often retrospectively for previous meals</td>
</tr>
<tr>
<td>- Experts found the collected data sufficient</td>
</tr>
<tr>
<td>- Choice of categories might need improvements</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discussion and conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Users liked the system</td>
</tr>
<tr>
<td>- Experts appreciated the availability of sufficient data</td>
</tr>
<tr>
<td>- Good compromise between effort and precision</td>
</tr>
<tr>
<td>- Feasible for longer term use</td>
</tr>
<tr>
<td>- Could be adapted to other types of behavior diaries, such as snacking, smoking, drinking,…</td>
</tr>
</tbody>
</table>

http://Heartware.offis.de/FastFood

Contact: Jochen Meyer, meyer@OFFIS.de, +49 176 8052 9708

OFFIS: Institute of Applied Computer Science
The Lilypad System: Designing for Collaborative Reflection

Gabriela Marcu, Hayden Demerson, Chanamon Ratanalert, Cristina Shin, Anu Jayasinghe, Anind Dey, Sara Kiesler
The Lilypad System
Designing for Collaborative Reflection

Gabriela Marcu, Anind Dey, Sara Kiesler, Quintin Carlson, Hayden Demerson, Justin Greet, Ryhan Hassan, Anu Jayasinghe, Greg Nicholas, Chanamon Ratanalert, Kevin Schaefer, Cristina Shin

Human-Computer Interaction Institute
Carnegie Mellon University
In situ recording and reviewing of behavioral data
Collaborative Reflection

1. Record
2. Reflect
3. Corroborate
4. Evaluate intervention effects
5. Disseminate information on progress
6. Determine appropriate intervention
7. Apply intervention consistently
Help4Mood – Supporting Joint Sense Making in the Treatment of Major Depressive Disorder

Maria K. Wolters, Christopher D. Burton, Colin Matheson, Adrián Bresó, Aurora Szentagotai, Juan Martinez-Miranda, Javier Rosell, Elies Fuster, Claudia Pagliari, Brian McKinstry
Help4Mood

Supporting Joint Sensemaking for the Treatment of Major Depressive Disorder
Team

http://www.help4mood.info

Colin.Matheson@ed.ac.uk

Maria.wolters@ed.ac.uk @mariawolters
you should do yoga while watching the sunrise. It's literally impossible to feel negative and sad while appreciating the wonder of the universe.

Brosh, 2013
Planning & Decision Support

What is happening to me?

OBJECTIVE MEASURES

SELF REPORT

Talking Head Visual Interface

Activity

Sleep

Speech

Planning & Decision Support

Daily / Weekly Mood

Sleep

Thoughts & Experience

Behaviour Activation

Relaxation

Anonymised report pushed to clinician email via secure server
Joint sensemaking

Working together to see what is going on

Report:

activity lower than normal,
speech slower than normal,
sleep more restless than normal,
negative thoughts about family.
Usability (T6.1; T6.3)
Ongoing Expert review by clinicians

User Studies
Actigraphy and Sleep Mat

Short Case Studies
Road Test Basic System
1 week

Longer User Studies
With patients
2 weeks
Data being collected

Pilot RCT
Full functionality
1 month
In preparation

Study 1 (T6.2)
Study 2 (T6.5)
Study 3 (T6.8)

eHealth and the Brain – Brussels, November 5 2013
Coping with Technology

“I know whenever I was depressed, there were days when I...[pause] I was totally, er, unable to, er ... organise even a cup of coffee.” (Participant 1)

“So, yeah the watch side of it, if it can do the upload and download itself... Then that would be better, but, er, the, er, the actual sort of manual interaction I think... is going to be a bigger problem.” (Participant 1)

Individual Variation

“I’d say my mood in particular, in general is fairly flat – it's neither up nor down, you know, in response to stimulus in, as do other people and I find, you know, like the Government, you know, they’ve got a happiness index I don't sit down and on a daily basis think “I feel really happy today”, you know, I don't because that's not normal.” (Participant 4)

On the talking head:

“Oh my goodness, she was so monotonous... She just... I, but she would be depressing to be quite honest.” (Participant 5)

“Yeah, and it was a nice calming voice, you know.” (Participant 2)

“Her voice was kind of upbeat [...] it felt like as if you were actually kind of talking to a real person.” (Participant 3)
“Synergistic Science”: A Theoretical Framework for Transdisciplinary Research Collaboration and Innovation

Heather J. Sobko, Derek Mathews, Mark Glenny, Paul Crigler, Doug Mitchell, Donald Schnader
“Synergistic Science”: A Theoretical Framework for Transdisciplinary Research Collaboration and Innovation

Heather J. Sobko, PhD, RN 1,2; Derek Mathews, BA; Mark Glenny, MS, RN 2; Paul Crigler, CBPP, MS 2; Doug Mitchell, MBA 2; Kevin J. Leon, MD 1 2; Donald Schnader, MS 1

1IVR Care Transition Systems, Inc., Birmingham, AL; 2University of Alabama at Birmingham, Birmingham, AL; 3Amberwoods Skilled Nursing Facility, Farmington, CT

Introduction
- The American Healthcare System is undergoing rapid changes to j costs using health information technology (HIT) tools [1].
- Diffusion of innovative HIT solutions can take 10-17 years [2].
- There is great need for a Theoretical Model to Guide transdisciplinary work that includes alternative processes for diffusion of innovations that significantly reduce this time lag.
- New strategies for collaboration that include non-traditional partnerships across diverse disciplines are required to effectively solve the healthcare challenges of today including significant cost reduction and improvement in access to care.

Objectives
1. Develop a transdisciplinary model that promotes rapid and effective implementation of research-based solutions to real-world settings that meets the following requirements:
   - Synergy among stakeholders
   - Multiple perspectives
   - Coordinated Process
   - Goal alignment
   - Ongoing assessment and evaluation
2. Test the model using the development and implementation of a real product, IVR Care Transition Systems

Selected Model Components

<table>
<thead>
<tr>
<th>Model</th>
<th>Goals</th>
<th>Collaborative Advantages</th>
<th>Collaborative Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>Study phenomena; Test hypotheses; Develop knowledge; Disseminate findings</td>
<td>Scientific Rigor; Evidence-based</td>
<td>Time Intensive; Egocentrism; Academic red tape; IP issues; Research-speak</td>
</tr>
<tr>
<td>Engineering</td>
<td>Design to specs; Minimize flaws; Documentation</td>
<td>Precise; Iterative; Analysis testing; Synthesis</td>
<td>Time intensive; Can be costly; Existing specs; Engineer-speak</td>
</tr>
<tr>
<td>Business</td>
<td>Return on investment; Strategic Goals; Value creation; Profit margins</td>
<td>Financial support; Operations Skills; Networking</td>
<td>Limited knowledge of research process; protocols; HIPAA; Business-speak</td>
</tr>
<tr>
<td>Project</td>
<td>Optimize allocation of necessary inputs; Integrate inputs to meet pre-defined objectives</td>
<td>Manage scope, time, cost, risk, HIT, procurement, Deliverables; Ongoing Monitoring</td>
<td>Requires sponsor; Planning time; PMP-speak</td>
</tr>
</tbody>
</table>

References

Conclusions
The “Synergistic Science” Transdisciplinary Model was highly effective in developing and implementing IVR Care Transition Systems into real world settings:
- Time from project initiation to deployment 18 months
- Inclusion of stakeholders across non-traditional disciplines worked in parallel throughout the project
- Diverse stakeholders included experts from research, nursing, medicine, business, engineering, project management, graphic design, interface architecture, sociology, informatics, risk management, data security, education, social work, telecommunications, policy, digital media, state and federal law, marketing, economic development, community members

Implications for Policy
- Close collaboration between researchers and real-world stakeholders can translate research findings into practice rapidly and effectively.
- Transdisciplinary collaboration requires inclusion of all stakeholders throughout the process from planning to implementation — with ongoing assessment and evaluation.
- Using the Synergistic Science Model can support bringing real HIT solutions to real world settings to solve the challenges of our healthcare system NOW.

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IVR: Ruth S. Kudelka National Research Service Award (T32) UAB Center for Outcomes and Effectiveness Research and Education (CORE)
NHS: The Synergistic Science Model is a framework that develop and implement software solutions for healthcare delivery.
Fostering Clinician-Centered Innovation: Implications in Health Technology Prioritization and Implementation

Melissa I. Naiman
Task Transition Decision Making During Downtime: Impact of EHR systems on Performance

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