University of Michigan
Center for Health Communications Research

http://chcr.umich.edu

Tailored Health Communications

- What are they?
- Why use them?
- Do they work?
- What are some examples?
- What are the challenges?
- Is there any help?
CHCR Staff Here Today

Michael Nowak, MILS
• Leader, CHCR Technology Group

Shannon Considine-Dunn, MPH MSW
• CHCR Behavioral Science Group
• Manager, CHCR Counseling Team

What Are They?

Tailored Health Communications

http://chcr.umich.edu
Definition of Tailoring

The term “tailoring” refers to a process consisting of:

1. an assessment of individual characteristics relevant to the behavior,
2. algorithms that use the assessment data to generate intervention messages relevant to the specific needs of the user, and
3. a feedback protocol that delivers these messages to the user in a clear, vivid format.

Message Library

Demographics

Stage of Change

Perceived Benefits

Perceived Barriers

Action Plan
<table>
<thead>
<tr>
<th>Message Library</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>red</td>
</tr>
<tr>
<td>Stage of Change</td>
<td>blue</td>
</tr>
<tr>
<td>Perceived Benefits</td>
<td></td>
</tr>
<tr>
<td>Perceived Barriers</td>
<td>aqua, gray</td>
</tr>
<tr>
<td>Action Plan</td>
<td>orange</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message Library</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>red</td>
</tr>
<tr>
<td>Stage of Change</td>
<td>blue</td>
</tr>
<tr>
<td>Perceived Benefits</td>
<td></td>
</tr>
<tr>
<td>Perceived Barriers</td>
<td>aqua, gray</td>
</tr>
<tr>
<td>Action Plan</td>
<td>orange</td>
</tr>
</tbody>
</table>
Why Use Them?

Tailored Health Communications

http://chcr.umich.edu
Public Health Mathematics

Impact = Efficacy × Reach

Impact of Behavioral Interventions

<table>
<thead>
<tr>
<th>High Efficacy</th>
<th>Low Reach</th>
<th>Low Efficacy</th>
<th>High Reach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good One on One Counseling</td>
<td>Classroom Health Education</td>
<td>Bad One on One Counseling</td>
<td>Public Service Advertisement</td>
</tr>
</tbody>
</table>

Individually Tailored Computer Interventions
Goals of Tailoring

Influence Information Processing
- Grab attention
- Engage effortful processing
- Elicit self-reference
- Evoke peripheral processing
- Create emotional response

Enhance Message Impact
- Employ theoretical constructs thought to directly influence behavioral intention on mediators, such as:
  - Self-efficacy
  - Attitudes/Outcome expectancies
  - Normative perceptions


Strategies To Reach Tailoring Goals

1. Personalization
2. Feedback
3. Content Matching (Adaptation)

Combining All 3 Strategies

Personalization  Feedback  Content Matching

Introduction
Welcome to Project Quit Henry. Your quit date is Monday, November 8th. As part of this program, we'll work on maximizing your motivation and confidence to quit. While neither is especially low, you don't quite feel fully confident or motivated either. Boosting both can really help you prepare for your quit day. Take a look at the box to the right. The red square is where you are currently. The blue highlighted square is what you want to aim for.

So let's begin. This Project Quit guide will take you through steps to prepare you to quit -- including a meditation exercise; provide strategies to deal with your temptations to smoke -- particularly smoking in social settings and smoking to control your weight; help you stay focused on your reasons for quitting; and highlight a success story from Scott, an ex-smoker.

Do They Work?
Tailored Health Communications

http://chcr.umich.edu
Tailored Intervention Results

Increased FV intake by 2.8 servings per day (McClure, 2010)
Achieved 38.6% 6-month smoking cessation (Strecher, et al., 2008)
Increased walking by 1921 steps a day (Richardson, et al., 2007)
Reached 159,000 people, decreasing fat intake (van Assema, 2006)
Improved understanding of respiratory symptoms (Yardley, 2010)
Achieved 78% intentions to obtain mammography (Lin, 2010)
Increased motivation to adhere to healthier lifestyle (Woolford, 2010)
Achieved 70% in diabetes Action or Maintenance (Dutton, 2008)
Increased vitamin intake (Milan, 2010)

Reviews (Noar, 2007)
Tailored print interventions outperformed generic or targeted print material

<table>
<thead>
<tr>
<th>Topic</th>
<th>Populations</th>
<th>Settings</th>
<th>Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervical Cancer Screening</td>
<td>Smokers</td>
<td>Households</td>
<td>Pamphlets</td>
</tr>
<tr>
<td>Smoking Prevention/Cessation</td>
<td>Spanish Speakers</td>
<td>Clinic/Health Center</td>
<td>Leaflets</td>
</tr>
<tr>
<td>Dietary Change</td>
<td>Young Adults</td>
<td>Universities</td>
<td>Newsletters</td>
</tr>
<tr>
<td>Mammography Screening</td>
<td>Family Units</td>
<td>School</td>
<td>Magazines</td>
</tr>
<tr>
<td>Exercise</td>
<td>Drivers</td>
<td>Worksites</td>
<td>Letters</td>
</tr>
<tr>
<td>Weight Loss</td>
<td>Women w/ Cancer Risk</td>
<td></td>
<td>Manuals</td>
</tr>
<tr>
<td>Childhood Immunizations</td>
<td>Helpline Callers</td>
<td></td>
<td>Booklets</td>
</tr>
<tr>
<td>Pediatric Injury Prevention</td>
<td>General Patients</td>
<td></td>
<td>Calendars</td>
</tr>
<tr>
<td>Colorectal Cancer Screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun Protection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condom Use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flu Vaccination</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reviews (Suggs, 2006)

Tailored computer-based interventions outperformed generic or targeted print material

<table>
<thead>
<tr>
<th>Topic</th>
<th>Populations</th>
<th>Settings</th>
<th>Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Activity</td>
<td>Adolescents</td>
<td>Primary Care</td>
<td>Stand-alone</td>
</tr>
<tr>
<td>Nutrition</td>
<td>Smokers</td>
<td>Settings</td>
<td>Computer</td>
</tr>
<tr>
<td>Injury Prevention</td>
<td>Caregivers</td>
<td>Grocery Stores</td>
<td>Web-based</td>
</tr>
<tr>
<td>Risk Reduction</td>
<td>Low literacy</td>
<td>Classrooms</td>
<td>Telephone</td>
</tr>
<tr>
<td>Screenings/Immunizations</td>
<td>Low income</td>
<td>Worksites</td>
<td></td>
</tr>
<tr>
<td>Alzheimer’s Disease</td>
<td>Hypertensive pts</td>
<td>In the Home</td>
<td></td>
</tr>
<tr>
<td>Improving Patient Care</td>
<td>Heart Failure pts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma</td>
<td>Parents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking Cessation</td>
<td>Asthma pts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Conditions</td>
<td>Pts in addiction recovery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol Consumption</td>
<td>Adults</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mammography Screening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Compliance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight Loss</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV Education</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What Are Some Examples?

Tailored Health Communications

http://chcr.umich.edu
Research Question:

Does higher depth tailoring improve smoking cessation outcomes?

- Randomized trial of 1,866 HMO members who were ready to quit
- 6-session individually tailored web program
- All participants received NRT
<table>
<thead>
<tr>
<th>Message Library</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>red, pink, greens</td>
</tr>
<tr>
<td>Social Environment</td>
<td>gray, maroon</td>
</tr>
<tr>
<td>Motives</td>
<td>blues, aqua, reds</td>
</tr>
<tr>
<td>Barriers</td>
<td>pink, green, blue</td>
</tr>
<tr>
<td>Coping Strategies</td>
<td>red, gray, pink</td>
</tr>
</tbody>
</table>
Welcome back Brian! As we come to the end of your Project Qult public, we’d like to leave you with some words of advice from Sam. Like you, he was ready to quit smoking but faced many challenges. Here’s his story.

Why did you decide to quit?
I had several good reasons for quitting. First, I needed to save money for a new car and knew I was throwing a lot of money away buying cigarettes. Second, I didn’t like feeling the fun when I’d have to stop outside to smoke at places that didn’t allow smoking inside. It made me feel like an outsider. Overall, I guess I just finally had enough.

How did you prepare for the change?
Well, I had read that you have to change things that you do and how you think to stop smoking. So, about two weeks before I quit, I decided to track all my cigarettes. Every time I wanted one, I’d first write down why I wanted it and then I wanted it. Then I’d write why I wanted to quit.

Did you do anything different as your quit day approached?
Yes. I usually smoked about a pack a day, but started cutting a few out each day just to see how I’d do. I’d play a game and would try to come up with 5 things I could do instead of setting those aside, potentially smoking. Once I came up with the list, I could either reward myself and have a cigarette, or just go do something from the list. I also began to skip my “dessert” cigarette before bed.

Did tracking why you smoked help?
Definitely. When I looked back over what I had tracked about my smoking breaks, what stood out the most was that I didn’t always have a good reason to be smoking. I was just smoking to smoke.

Did you ask for help?
Not initially, but once my friends and family knew how much I wanted to quit, they were very helpful, giving me lots of support. We spent a lot of time at the movies, eating dinner, going to basketball games, and other things that involved a lot of time. I mean, I hadn’t been in a while, and talking about how hard it is to quit, I can’t believe how many people listened to me about how hard it was for me to quit.
Adjusted 6-Month Smoking Cessation Rates by Cumulated Number of High-Depth Intervention Components Received

Per Protocol analysis (n=944; OR=1.91; CI=1.18-3.11)

<table>
<thead>
<tr>
<th>6-mo cessation rate</th>
<th>28%</th>
<th>26%</th>
<th>34%</th>
<th>39%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number high-depth tailored components</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Tailoring Variables Used:

- Name
- Age
- Gender
- Ethnicity
- Stage of Change
- Marital status
- Smoking status of spouse
- Child in home
- Physically active
- # of cigs smoked
- Barrier
- Job status
- Social Support

6-mo cessation rate:

- 28%
- 26%
- 34%
- 39%
Research Question:
Can a tailored web intervention improve asthma management outcomes?

- Randomized trial of 314 urban teens - 98% African-American, 52% qualified for federal school lunch programs
- 4-session individually tailored web program delivered in schools
Puff City Results

- 50% fewer emergency department visits
- 50% fewer hospitalizations
- 60% fewer missed days of school
- Significantly fewer symptom days
- Significantly fewer symptom nights
- Estimated marginal cost was $6.66 per student
What Are the Challenges?
Tailored Health Communications

Determine What to Tailor
- Program objectives
- Relevant literature
- Appropriate theoretical constructs
- Audience research
Variables from Theoretical Constructs
(just to name a few)

- Outcome Expectancies/Attitudes
- Self-Efficacy
- Intrinsic/Extrinsic Motivation
- Risk Perception/Perceived Threat of Illness
- Decisional Balance - Advantages and Disadvantages of Changing Behavior
- Perceived Benefits
- Perceived Barriers
- Stage-of-Change
- Perceived Social Norms
- Observational Learning (Modeling)

Moderators
(just to name a few)

- Locus of Control
- Need for Cognition
- Stress/Coping Levels
- Values
- Culturally based constructs (i.e., religion, ethnic identity)
- Social Networks/Social Support
- Central vs. Peripheral Processing
- Other Behaviors that Influence/Impact Behavior (e.g., smoking/drinking)
- Background of Behavior (e.g., # of cigs, quit attempts, yrs smoke)
- Hobbies, Routines, Interests
- Blunting vs. Monitoring
Demographics
(just to name a few)

- Age
- Gender
- Race/Ethnicity
- Living environment (single, relationship, children, roommates...)
- Education
- Employment Status (employed, student, homemaker, retired...)
- Height and Weight
- Location (urban, suburban, rural)
- Health Insurance Status
- Health History (personal and family)
- Numeracy/Literacy/Reading Level

Tailoring Variables Used:

Welcome back! As we come to the end of your Project Quid guide, we'd like to leave you with some words of advice from Beth. Like you, she was ready to quit smoking, but faced many challenges. Here's her story.

Why did you decide to quit?
I had several good reasons for quitting. First, I needed to save money for a new car and knew I was throwing a lot of money away buying cigarettes. Second, I didn't like losing the fun when I'd have to stop outside to smoke a joint that didn't allow smoking inside. It made me feel like an outlaw. Overall, I guess I just finally had enough.

How did you prepare for the change?

Well, I had read that you have to change things that you do and how you think to stop smoking. So, about two weeks before I quit, I decided to track all of my cigarettes. Every time I wanted one, I'd first write down why I wanted it and when I wanted it. Then I'd write why I wanted to quit.

Did you do anything different as your quit day approached?
Yes, I usually smoked about a pack a day, but started cutting a few out each day just to see how I'd do. I'd play a game and would try to come up with 5 things I could do instead of sitting there idle, potentially smoking. Once I came up with the list, I could either reward myself and have a cigarette or just do something from the list. I also began to skip my "dessert" cigarette before bed.

Did tracking why you smoked help?
Definitely. When I looked back on all I had tracked about my smoke breaks, what stood out the most was that I didn't always have a good reason to be smoking. I was just smoking to smoke.

Did you ask for help?
Not initially, but since my friends and family knew how much I wanted to quit, they were very helpful, giving me lots of support. We spent a lot of time at the movies, which was a great way to stay out of the smoke. At times I wasn't sure if I was ready, and taking about how hard it is to quit, I can't believe how many people listened to me about how hard it was for me to quit.
### Permutations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Options</th>
<th>Number Messages</th>
<th>Total Messages</th>
<th>Total Permutations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>User input substitution</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Gender</td>
<td>Female/Male</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Stage of Change</td>
<td>Contemplation/preparation/</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

**Example Narrative:**

Rhonda, as we come to the end of your Project Quid guide, we'd like to leave you with some words from Carla, a last, and was ready to quit smoking but faced many challenges. Here's her story:

**Why did you decide to quit?**
I had several good reasons for quitting. First, we needed to save money to put toward a car that would actually work. Second, my husband wanted me to. Third, I didn't like feeling the fan when I'd have to step outside to smoke at places that didn't allow smoking inside. It made me feel like an outsider. Plus, it wasn't really fair to the kids. I try to be a good example. They can't do a great example to set.

**How did you prepare for the change?**
I made a plan and did a day a day, and wanted to help me quit. So about a week before I was going to quit, I began to walk the first thing in the morning. I don't normally smoke right before or after exercising, so that helped me delay my first smoke of the day.

**Did you try anything else as part of your quit strategy?**
Yes, I cut back on the number of cigarettes each day. But, I also cut out a few days and went to the gym instead of trying to do it all at once. There, I tried to smoke one or two cigarettes at a time. In the morning, I ate breakfast and went to the gym instead of smoking. And I began to stop my “dress” cigarette before bed.

**Did these things help?**
Definitely. By the time I quit, I was walking four mornings a week and beginning to feel better already.

**Did you ask for help?**
I told my friends that I was going to need some help. I told my friends that I was going to need some help. I told my friends that I was going to need some help. I told my friends that I was going to need some help. I told my friends that I was going to need some help.

**# of cigs smoked**
I smoked a lot of cigarettes at the movies, sitting in non-smoking sections of restaurants, and hanging out in other places that wouldn't tempt me. Of course, all the things needed to do was taking one good look at the kids to make me feel good about my decision.
### Permutations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Options</th>
<th>Number Messages</th>
<th>Total Messages</th>
<th>Total Permutations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>user input</td>
<td>substitution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Young/Old</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Gender</td>
<td>Female/Male</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Asian/Black/Middle Eastern/White/Hispanic</td>
<td>5</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>Stage of Change</td>
<td>Contemplation/preparation/action/maintenance</td>
<td>4</td>
<td>13</td>
<td>80</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Single/Married/Living with Partner</td>
<td>3</td>
<td>16</td>
<td>240</td>
</tr>
<tr>
<td>Spouse Smoking Status</td>
<td>Smoker/Non-smoker</td>
<td>2</td>
<td>18</td>
<td>480</td>
</tr>
<tr>
<td>Child in home</td>
<td>0/1/2+</td>
<td>3</td>
<td>21</td>
<td>1,440</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>None/- recommendation/- recommendation/=- recommendation</td>
<td>4</td>
<td>25</td>
<td>5,760</td>
</tr>
<tr>
<td># of cigarettes</td>
<td>user input</td>
<td>substitution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barriers</td>
<td>stress/meal/concentrate/bar/sad/miss smoke in mouth/phone/hunger/friends/nervous/coffee/mind focused/driving/celebrating/angry/bored/miss taste/gaining weight/see others smoke</td>
<td>19</td>
<td>44</td>
<td>109,440</td>
</tr>
<tr>
<td>Job Status</td>
<td>employed/self-employed/ out of work &lt; year/out of work &gt; year/homemaker/student/retired/unable to work</td>
<td>8</td>
<td>52</td>
<td>875,520</td>
</tr>
<tr>
<td>Social Support Person</td>
<td>mom/dad/sister/brother/child, friend, coworker/other</td>
<td>8</td>
<td>60</td>
<td>7,004,160</td>
</tr>
</tbody>
</table>

### Challenges to Broad Use

- Tailored interventions are **difficult to create** and test
- Researchers use **different hand-built systems** for tailoring
- Research projects need many modifications and are **not designed for large volume**

The Michigan Tailoring System

- A full featured **authoring environment** enables a broad audience to create tailored programs
- **Open source** code encourages enhancements, adoption, and a growing community of practice
- Greater adoption yields **standardized systems and processes** for easier training, use, support, and dissemination
- **MTS is free for use** by noncommercial organizations for noncommercial research and education

http://chcr.umich.edu/mts
Michigan Tailoring System

Michigan Tailoring System:
A “Tiny Project” Demonstration
University of Michigan
Center for Health Communications Research

Michigan Tailoring System
- Supports parts of the tailoring process
- Designed for reusability through standardization

http://chcr.umich.edu/mts
Tailored Intervention Components

MTS
Individual User Characteristics
Comprehensive Library
Selection Logic & Tailoring Method

Controlling Processes
Optional Project Specific Elements
Optional Adjunct Systems

http://chcr.umich.edu/mts
Supporting the Tailoring Process

Individual User Characteristics

- Dictionary Editor
- Message Editor and Survey Editor assistance
  - Auto-Complete
  - Problems View: Warnings and errors
- MTS Dictionary format

Dictionary Editor
Auto-Complete in Message Editor

Problems View
MTS Dictionary Format

```xml
<?xml version="1.0" encoding="UTF-8"?>
dictionary>
  <basetypes>
    <basetype name="string">Text</basetype>
    <basetype name="int">Number (no decimal)</basetype>
    <basetype name="decimal">Number with decimal</basetype>
    <basetype name="datetime">Date (YYYY-MM-DD hh:mm)</basetype>
  </basetypes>
  <sources>
    <source name="D1"></source>
    <source name="D2"></source>
    <source name="M1"></source>
    <source name="M2"></source>
  </sources>
  <characteristics>
    <characteristic baseType="string" derived="yes" name="Dictated">Yes</characteristic>
    <characteristic baseType="int" default="1" name="StartMonth">1</characteristic>
  </characteristics>
</dictionary>
```

Tailored Intervention Components

MTS
Individual User Characteristics
Tailored Intervention Components

Supporting the Tailoring Process

Comprehensive Library of Content

- Message Editor and Survey Editor
- Team Tools to manage shared documents
- MTS Message format
MTS Message Editor

Team Tools
Tailored Intervention Components

Supporting the Tailoring Process

Selection Logic

- Message Editor and Survey Editor
- Logic assistance
- Python standard

http://chcr.umich.edu/mts
## Logic Support

### Logic Uses the Python Language

<table>
<thead>
<tr>
<th>Command</th>
<th>Options</th>
<th>Logic</th>
<th>Message</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>-- block</td>
<td>not SOC==&quot;Quit&quot;</td>
<td>Now that you've stopped</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>-- text</td>
<td>SOC==&quot;Quit&quot;</td>
<td>Now that you've stopped</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>-- text</td>
<td>SOC==&quot;Quit2Stop&quot; or SOC==&quot;QuitMax&quot;</td>
<td>Once you stop</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>-- text</td>
<td></td>
<td>Smoking, you'll need long-term help from</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>select</td>
<td>index 1, &amp; index 2 separated</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Intersections

- **Sister**, **Brother**, **OtherFan**
- **Friend**, **Coworker**

#### Your friends and family

- Your friends
- Your family
- Others
Supporting the Tailoring Process

Tailoring Method

- Built-in to MTS Workbench
- Live Preview
- Survey simulator
- Publisher
- Usable in Python frameworks like Django
- Embeddable into Java applications using Jython
- Open source for improvements

http://chcr.umich.edu/mts

Live Preview
Open Source for Improvements

Tailored Intervention Components

MTS
Individual User Characteristics
Comprehensive Library
Selection Logic & Tailoring Method

MTS
Selection Logic
Tailoring Methods

4/27/2011
Controlling Processes

- Manage the use of the system by individual users
- Collect / Store / Access individual user data
- Assemble tailored elements into a coherent whole

Supporting the Tailoring Process

Controlling Processes

- Authentication and authorization
- Access codes
- Login
- Storing user characteristics - MTS is not a database though it provides clean data
- Assembly of content - MTS is not a layout engine though HTML goes a long way
Access Codes and Login

University of Michigan Health Survey

If this is your first time participating in the Cancer Center Health Survey, please enter your personal access code.

Personal access code: [___]
Register

If you've already registered to participate in the Cancer Center Health Survey, please enter your email address and password.

Email address: [___]
Password: [___]
Forgot My Password
Login

Storing Characteristics in a Database

(sample test data)
Assembly of Content

Controlling Processes
- Manage the use of the system by individual users
- Collect / Store / Access individual user data
- Assemble tailored elements into a coherent whole

Tailored Intervention Components

MTS
- Individual User Characteristics
- Comprehensive Library
- Selection Logic & Tailoring Method

Controlling Processes
**Tailored Intervention Components**

**Optional Project Specific Elements**
- Research study elements
- Delivery Timing
- Additional Content

**Optional Project-Specific Elements**
*You Need to BYO (build your own) ...but MTS can help!*

- Research components
  - Randomization and study conditions
    - treat arm as a characteristic
  - Screening and consent
    - use Survey Engine
- Timing
  - use multiple sources
- Adjunct content like Help, FAQs, etc.
  - use MTS as a content manager
**Tailored Intervention Components**

*Optional Project Specific Elements*
- Research study elements
- Delivery Timing
- Additional Content

*Optional Adjunct Systems*
- Automated Communication
- Participant Communication Management
- Study Management
- CATI
- Data Management and Analysis
Optional Adjunct Systems
You Need to BYO (build your own) ... but MTS can help!

- Automated communication
  - MTS can tailor the content of the communication
- Participant tracking
- Study staff management
- CATI
  - use MTS Survey system
- Data management and analysis
  - MTS Dictionary can help keep your data cleaner

Study Management

Q2 Status Report

<table>
<thead>
<tr>
<th>Enrollment</th>
<th>Did not complete eligibility</th>
<th>Ineligible</th>
<th>Eligible</th>
<th>Consented</th>
<th>Enrolled/Randomized</th>
<th>Unenrolled or Non-Distinct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entered access code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>055</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Eligibility reasons for the '959 ineligible participants

- General
- Age
- Gender
- Baseline
- Illness
- Other

Enrolled by Gender

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>413</td>
<td>668</td>
<td>1081</td>
</tr>
</tbody>
</table>

Enrolled by Age (mean = 69.2059, median = 71.0154)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>413</td>
</tr>
<tr>
<td>31-40</td>
<td>554</td>
</tr>
<tr>
<td>41-50</td>
<td>275</td>
</tr>
<tr>
<td>51-60</td>
<td>205</td>
</tr>
<tr>
<td>61-70</td>
<td>145</td>
</tr>
<tr>
<td>71-80</td>
<td>116</td>
</tr>
<tr>
<td>81-90</td>
<td>19</td>
</tr>
<tr>
<td>91-100</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>1081</td>
</tr>
</tbody>
</table>

2-Month Follow-up status

<table>
<thead>
<tr>
<th>Status</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible</td>
<td>954</td>
</tr>
<tr>
<td>Completed</td>
<td>64</td>
</tr>
<tr>
<td>1 week pending</td>
<td>26</td>
</tr>
<tr>
<td>2 weeks pending</td>
<td>52</td>
</tr>
<tr>
<td>3 weeks pending</td>
<td>4</td>
</tr>
<tr>
<td>Too late</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>1081</td>
</tr>
</tbody>
</table>
MTS is Designed for Reusability through Standardization

- XML formats for messages, surveys, and dictionaries
- JSON format for test cases
- Standard Python code for selection logic
- Database-agnostic system for providing individual user characteristics to the tailoring engine
- HTML output
- Open source for all components

University of Michigan
Center for Health Communications Research

http://chcr.umich.edu
University of Michigan

Center for Health Communications Research

http://chcr.umich.edu

CHCR Photobrowser

- Tailored photos of a wide variety of people representing specific ethnicities, ages, genders, archetypes, and emotions
- All non-tailored aspects held constant: setting, size, framing, lighting
- 1,860 high-quality digital images
  - 5 ethnicities x 2 ages x 2 genders x 3 archetypes x 31 emotions
  - On transparent background for easy compositing
  - Simple controls allow easy access to any desired subsets of the collection
- Free for research and educational use

http://chcr.umich.edu/photobrowser
CHCR Photobrowser

http://chcr.umich.edu/photobrowser