Development of a Low-Literacy “Rx for Physical Activity” for a Rural Community Health Center

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Setting: Rural county in DE
Served by La Red Health Center (FQHC)

Site:
- 3 towns
- hi % Hispanic
- many illiterate
- much obesity, pre-diabetes
Partners

• University of Delaware, School of Education

• Delaware Diabetes Prevention & Control Program (DCPC)

• Federally Qualified Health Center (FQHC)—La Red
La Red Health Center

• Serves most rural county (Sussex)
• FQHC since 2004
• Patient population
  – 80% minority (mostly Hispanic)
  – 50% live at or below 200% of Federal Poverty Level
  – 250 active patients with diabetes
Aim

• Develop simple physical activity tools
  – For clinic staff to use,
  – To aid patients with pre-diabetes or diabetes,
  – And accessible to patients with low literacy (low literacy = poor reading, learning, reasoning skills)

• 2 projects
  – Rx for physical activity
  – Rx for walking with pedometer
Rx for Physical Activity:
Four Guiding Questions

1. **What activity resources are available?**
   - Safe
   - Low/no cost
   - Close & accessible

2. **What resources will patients actually use?**
   - Rx is comprehensible with low literacy (simple maps with icons)
   - Activities fit into family/cultural life (soccer games)—enhance, not burden
   - Activities provided/reinforced by community organizations (churches, major employers)

3. **What tools will staff actually use?**
   - Supports Chronic Care Model (Self-Management)
   - Fast (90 seconds)
   - Easy (scripts for staff, materials to give patients)

4. **How well did Rx work?**
   - Record of Rx given
   - Follow-up of patients
Exemplar Activity: Walking routes on main UD campus

Great idea but has really big problem
The Literacy Challenge

1. Patient must **perform** task using map
2. Using a map is **inherently complex**
   - Highly abstract depiction of space
   - Orientation is top-down
   - Many patients can’t read in any language
Literacy Demands of Sample Daily Tasks
(Tasks from NALS adult functional literacy test)

<table>
<thead>
<tr>
<th>Level</th>
<th>&lt;1</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>3</td>
<td>9</td>
<td>26</td>
<td>★</td>
<td>40</td>
<td>21</td>
</tr>
<tr>
<td>Black</td>
<td>12</td>
<td>22</td>
<td>★</td>
<td>41</td>
<td>22</td>
<td>3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>30 (half foreign-born)</td>
<td>15</td>
<td>★</td>
<td>27</td>
<td>U</td>
<td>22</td>
</tr>
<tr>
<td>Over age 65</td>
<td>19</td>
<td>29</td>
<td>★</td>
<td>33</td>
<td>16</td>
<td>3</td>
</tr>
</tbody>
</table>

★ = mean
F = foreign born
U = US born

Be mindful that—even simplest tasks can be difficult for some people
Process—Environmental Scan

• 3 locales scanned for:
  – Safe, accessible walking routes
  – In-town facilities (ball fields, YMCA, ...)
  – More distant sites (beach, state parks, ...)

• Info gathered by:
  – KS & LG
    • interviewed local social service agencies
    • met with La Red staff on patient needs/preferences/barriers
    • toured locales, identified large employers
    • located mapping resources: UD Applied Demography Center, Delaware DataMIL (state’s internet mapping service at datamil.delaware.gov)
  – UD student assistant
    • telephone, internet searches
    • physically inspected 3 locales
    • assessed “walkability” of streets

• Info recorded in spreadsheets
  – Type, location, hours, costs, clientele, disability access, parking, contacts

• Intended products
  – Rx
  – Lists of resources for patients, with maps
Results of Environmental Scan

• None
  – YMCA, YWCA
  – indoor malls (mall walking)
  – public use of school athletic fields
  – walking to school (too far, not walkable, bussed)

• Rare
  – 1 city park
  – 1 soccer field (Saturday use)
  – walkable sidewalks (not even for half mile)
Obstructions on sidewalks
Sidewalks Rare

Conclusion:
Shockingly few activity resources
No resources to list for an Rx
Plan B—Rx for Pedometer Walking

Guiding questions

1. What kind pedometer available & appropriate?
2. How many steps to prescribe: at start, increments, end-goal?
3. Who prescribe & explain Rx (MD, other)?
4. How should Rx be explained (scripts for staff)?
5. How should Rx be followed up and reinforced?
Considerations with free/donated pedometers

All have belt clips, some have tethers

Cover keeps coming off

Hard to open

Extra features:
• 2-sec. reset
• 5 steps before count recorded

Easy to see the count, but—
• Requires mental calculation
• Hard to rewind

All have belt clips, some have tethers
Variability in recording

Conclusion: Probably all good enough, but get to know the one you prescribe

<table>
<thead>
<tr>
<th></th>
<th>A (UD)</th>
<th>B (ours)</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>200 steps,</strong></td>
<td>93</td>
<td>180</td>
<td>162</td>
<td>220</td>
<td>149</td>
</tr>
<tr>
<td><strong>Total-Day 1</strong></td>
<td>.7</td>
<td>1.0 (5681)</td>
<td>1.2</td>
<td>1.3</td>
<td>1.0</td>
</tr>
<tr>
<td>Treadmill</td>
<td>.7</td>
<td>1.0 (4236)</td>
<td>1.2</td>
<td>1.2</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total-Day 2</strong></td>
<td>1.0</td>
<td>1.0 (2975)</td>
<td>1.4</td>
<td>1.4</td>
<td>failed</td>
</tr>
<tr>
<td>Street walk</td>
<td>.9</td>
<td>1.0 (2557)</td>
<td>1.1</td>
<td>1.1</td>
<td>failed</td>
</tr>
</tbody>
</table>
Rx for Pedometer Walking

What regimen is reasonable to prescribe?
- Hard to find guidance
- Made prudent guess

• Keep form simple
• Limit content to the essentials
**Keep Regimen Simple**

**Front**

- **LA RED HEALTH CENTER**
  - [ ] FABRICIO ALARCÓN, MD
  - [ ] RAMA PERI, MD
  - [ ] HELEN MERRICK, FNP-BC

**505 W. MARKET STREET · SUITE A · GEORGETOWN, DE 19947 · (302) 855-1233**

**NAME** _______________ **DATE** _______________

**Rx** for walking with pedometer

<table>
<thead>
<tr>
<th>Amount per week:</th>
<th>Week 1: 1,000 steps in 20 minutes 4 days per week</th>
<th>Week 2: 1,500 steps in 20 minutes 4 days per week</th>
<th>Week 3: 2,000 steps in 20 minutes 4 days per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Next visit:</td>
<td>way</td>
<td></td>
<td>way</td>
</tr>
</tbody>
</table>

**Back**

- **Must increase dose over time but:**
  - Changed only one element of regimen

- **Provide record-keeping form with Rx**

<table>
<thead>
<tr>
<th>Extra Steps</th>
<th>MON</th>
<th>TUES</th>
<th>WED</th>
<th>THUR</th>
<th>FRI</th>
<th>SAT</th>
<th>SUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Support clinic staff with scripts when they—

1. Give the Rx (MD, CDE, other)
2. Explain how to use the pedometer with Rx
3. Follow-up patient use of pedometer

Why?
• Hidden complexities for patients in adhering to Rx
• Hidden complexities for staff in explaining Rx
### Script 1: Key Ideas to convey to patient when staff give “Rx for Walking”

<table>
<thead>
<tr>
<th>Key idea</th>
<th>Sample statements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>[general benefits]</strong></td>
<td>“Exercise is important for staying healthy.”</td>
</tr>
<tr>
<td><strong>[concrete example]</strong></td>
<td>“Walking helps keep your heart strong; it can help you lose weight; it also helps to relieve stress.”</td>
</tr>
<tr>
<td><strong>[personalize]</strong></td>
<td>“Exercise is especially important for you because you have diabetes.”</td>
</tr>
<tr>
<td><strong>[meaningful metaphor]</strong></td>
<td>“For people with diabetes, exercise is as important as the medicines they take to control their blood sugar.”</td>
</tr>
</tbody>
</table>

**If MD, have only 90 seconds**

**Key ideas =**
Implicit training for the ‘teacher’
- Pedagogical principles—be concrete, personalize, use meaningful metaphors, etc.

**Sample statements =**
‘Curriculum’ for teacher
- Not all content would be obvious, how to handle contingencies, etc.

**NOTE:** Record “prescribed pedometer” in the patient’s chart
### Script 2: Key Ideas to Convey When Staff Explain “Rx for Walking”

<table>
<thead>
<tr>
<th>Key idea</th>
<th>Sample statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why this Rx?</td>
<td>“The aim is to get you walking more, because that will improve your health. Walking is like medicine, and it’s especially important for people with diabetes. That’s why Dr. ___ has prescribed it for you.”</td>
</tr>
<tr>
<td>[concrete example of benefits]</td>
<td>“For you in particular, it will ___ (frame benefits based on their particular condition).”</td>
</tr>
<tr>
<td>Repeat MD’s most crucial point about the Rx prescribed</td>
<td>“As the doctor said, the prescription is for walking extra steps during the week, in addition to what you already do.”</td>
</tr>
</tbody>
</table>

#### Can’t assume anything:

**That patient will know:**
- What a pedometer is
- Understand regimen on the Rx

**That the staff will know:**
- your aim (e.g., extra steps)
- how to explain & adjust regimen

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[1. Intensity—number of steps per “dose” increases in second and fourth weeks] (metaphors to help explain a complex concept)

**You are probably wondering how the pedometer fits in. This is the interesting part. To be good medicine, walking needs to get your heart working a bit harder. If you walk as slowly as a snail, it won’t do you much good. And it’d be really boring besides.”**

“This is where the pedometer comes in. We want you to walk at least a certain number of steps in those 20 minutes. For the first week, the doctor wants you to try to walk at least 1,000 steps during the 20 minutes. The pedometer will count the steps for you. I tell you in a minute how to use it.”

“The next week he wants you to walk more steps—not 1,000 like before, but 1,500—during each 20 minutes. This means that you will have to walk faster. That’s the whole idea—to get your heart and legs working a bit harder. They’ve got to be able to walk the 1,000 steps in 20 minutes.”

[2. Duration] (metaphors to help explain a complex concept)

“Yet another interesting point is the duration. The duration matters a lot too—I mean the how long you are walking for. The duration is key. That’s why it’s called ‘dose’—it matters how long you take the dose.”

“Yet another interesting point is the duration. The duration matters a lot too—I mean the how long you are walking for. The duration is key. That’s why it’s called ‘dose’—it matters how long you take the dose.”

[3. Frequency—same number of “doses” of walking—4—every week] (metaphors to help explain a complex concept)

“The doctor wants you to do the extra walking whenever you like. It doesn’t matter which four days you pick, as long as you do four days sometime during the week.”

[4. Amount—same number of minutes—20—on every “dose”] (metaphors to help explain a complex concept)

“The prescription is for 20 minutes of extra walking each day. So that’s an extra 20 minutes, four days a week.”

“If you can’t do 20 minutes at one time at first, don’t worry. Just do two 10-minute walks that day instead.”

[5. Modification, if appropriate] (metaphors to help explain a complex concept)

“The prescription can always be adjusted if it needs to be.”
Quite challenging to design clear, concise explanations that simultaneously anticipate common errors and attempt to motivate...
Script 3: Follow-up on Patient’s Use of Pedometer During First Month

<table>
<thead>
<tr>
<th>Patient’s use of pedometer during first month</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>From Patient’s Chart:</strong></td>
</tr>
<tr>
<td>Patient’s name ____________________________</td>
</tr>
<tr>
<td>Date of birth ___________________ Sex ______</td>
</tr>
<tr>
<td>Today’s date ___________________ Interviewer’s name ____________________________</td>
</tr>
</tbody>
</table>

**[Before calling patient, please calculate:]**

How many weeks ago is that? __ Walking prescribed for previous week was: __

**[After greeting the patient, ask them these questions:]**

1. Did you use the pedometer at all?  
   **No** [Skip to Question 6]  
   **Yes**

2. Did you use it all in the last week?  
   **No** [Skip to Question 6]  
   **Yes**

3. How many days during the last week (7 days) did you go walking with the pedometer?  
   Days __ (At least 3 days __)  
   (1-2 days __)

4. How many steps did you get up to during those walks?  
   Steps __ (At least 2,000 __) if [Skip to Question 6]  
   (Less than 2,000__)

5. How many minutes did this take you?  
   Minutes __ (20 minutes or less__) [Congratulate them and end the interview]  
   (More than 20__) 

6. Why weren’t you able to do any/more walking with your pedometer? ("any," if “no” to Q. 1)  
   (Check all that apply)  
   Lost the pedometer ______  
   Didn’t know how to use it ______  
   Bad weather ______  
   No one to walk with ______  
   Too tired ______  
   Health changed ______  
   Too busy ______  
   Forgot ______  
   Not Interested ______  
   Didn’t have any benefit ______  
   Other (explain) ______

**[Thank the patient, praise them for anything they accomplished, and encourage them to continue.]**
Lessons Learned

• Scarcity of activity resources
  – No malls, YM/WCA, parks
• Competing demands
  – Clinic staff
  – Patients
• EMR introduction: absorbing energies
Thank you

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Slides are available at:
http://www.udel.edu/educ/gottfredson/reprints/2009CDC_Rx.ppsx
or
http://www.udel.edu/educ/gottfredson/reprints/2009CDC_Rx.ppt