iQuit: The use of Health Information Technology in Tobacco Treatment for College Students

Part II

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Kirstie Kear, peer coach
Problem

• Smoking and tobacco use result in > 440,000 premature deaths each year in U.S.
• Smoking linked to 30% of all cancer deaths, almost all deaths from COPD and premature CHD disease and death.
• Young adults: increased respiratory symptoms
• Young women: increased risk for high-grade cervical lesions/cancer and PMS
• Lower academic achievement
• Financial cost: $167 billion in healthcare expenditures and productivity losses annually in U.S.
Population

• Majority of young adults become regular smokers after age 18.
• Highest rate of current smoking at 38.4% for ages 18-25.
  – 25.6 % for full-time college students vs. 41.2% of those not enrolled.
  • 30% at UK
• Most death and disease related to smoking and tobacco use can be eliminated with successful cessation before age 30.
Rosswurm and Larrabee’s model for evidence-based practice applied to treatment for tobacco dependence in college health

Assess need for change in practice:
- Multidisciplinary team meetings
- Tobacco use prevalence
- Current treatments
- Compare UHS with national data

Link problem treatment outcomes:
- Causal analysis/fish diagram-factors influencing tobacco use and treatment
- Potential for Internet interventions
- Outcomes: self report of quit attempts, abstinence and motivation to quit

Synthesize best evidence:
- Systematic review of literature on Internet interventions for tobacco treatment for young adults/college students

Design practice change:
- Identify tobacco users
- Email coaching intervention based on TTM and SCT; develop templates
- Resources and training: existing staff and peer coaches
- Outcome and process objectives

Implement & evaluate change:
- Pilot program
- Review of computer records
- Qualitative data from staff
- Surveys to participants at 3- and 6-months

Integrate & maintain change:
- Meet with team members
- Review and refine intervention based on feedback
- Standard of care to enroll all Quit kit recipients in intervention

Step 1: Gap analysis

- Policy change: November 19, 2009 policy change prohibiting use of any tobacco product on any University property.
- Multi-disciplinary Treatment and Addictions Committee
  - Current services underutilized/less than ideal
  - Survey/focus groups
- Standard practice
  - CTTS providers: group and individual counseling
    - 36 patients in 2009 (estimated 6,400 tobacco users on campus)
- External data
  - Young adults have highest quit rates, but did not use any of recommended treatments
- Need for treatment identified
ARE YOU IN NEED OF A TOBACCO TIME OUT?

Thinking of Quitting Smoking or Chewing Tobacco?

We have resources that can help!

Stop by the University Health Service or give us a call 323-APPT.

You can meet with a Tobacco Treatment Specialist one-on-one to make a quit plan or join a group class.

For more information contact Fadyia Lowe at 323-5823

The entire UK campus is going Tobacco-Free November 19, 2009
Viral Marketing Campaign 2009
The University of Kentucky goes tobacco free in 7 days.

Picture yourself getting through your day Tobacco Free!

November 19, 2009

UK can help you.

Tobacco-Free UK:
A Healthy Place to Live, Work and Learn

www.uky.edu/TobaccoFree
UK is tobacco free!

Use of any tobacco product (cigarettes, cigars, chew, snuff, snus, water pipes, pipes, etc.) will not be allowed on any university property - this includes classroom buildings, student housing and parking areas.

UK joins over 300 other US colleges and universities that have comprehensive tobacco-free policies.

Most UK students don’t use tobacco (7 out of 10) and many want to quit.

If you do use tobacco, we can help.

• Plan ahead and set a quit date.
• Use a combination of counseling and medicine.
• Get information and support on how to quit.
• Medicine, including FREE patches and gum is available.
• Pick up a FREE quit kit at UHS.

Call for an appointment: University Health Service 323-APPT or Counseling and Testing 257-8701

Go to http://www.uky.edu/TobaccoFree for more details
Great American Smoke Out
November 2010
Operation Don’t Go COLD Turkey!
Step 2: Link problems/interventions/outcomes

- Causal analysis
  - Fish diagram

- Key contributing causes or mediating factors
  - Lack of knowledge/experience with tobacco treatment
  - Lack of understanding of health consequences/developmental status
  - Campus-wide tobacco-free policy; community policy
  - Target marketing by Big Tobacco
  - Not identified, advised or counseled on quitting

- Outcomes: process and summative
  - Both patient and healthcare providers
Step 3: Synthesize best evidence

• Systematic review of literature
  – Tobacco treatment, ages 18-30, use of Internet done in multiple databases
  – 76 studies initially identified
    • 11 duplicates excluded; 47 did not meet review criteria; 10 excluded because mean age was either > 30 or < 18 y.o.

• Eight studies
  – 4 RCT, 4 cohort
  – Limited or no human interaction
  – Primary outcome measure of smoking or tobacco abstinence
<table>
<thead>
<tr>
<th>Author, year</th>
<th>Intervention</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abroms, 2008</td>
<td>“X-Pack Program”&lt;br&gt;In-person counseling session (15 minutes)&lt;br&gt;Self-help kit&lt;br&gt;Counseling emails generated by staff counselors tailored to stages of change (10-12 over 6 months)</td>
<td>7-day point prevalence abstinence at 3-months (31.3%) and at 6-months (25.0%) with biochemical verification at 6-months (10.2%)</td>
</tr>
<tr>
<td>An, 2008</td>
<td>“RealIU”&lt;br&gt;Weekly peer coach emails&lt;br&gt;Web-based cessation guides&lt;br&gt;Discussion boards&lt;br&gt;Interactive quizzes (30 weeks)</td>
<td>30-day point prevalence abstinence (40.5%) with biochemical validation (33.1%) at 30-weeks</td>
</tr>
<tr>
<td>Escoffery, 2004</td>
<td>“Kick-It”&lt;br&gt;Web-based sessions with tailored feedback (2 months).&lt;br&gt;Ask-the-expert via email questions&lt;br&gt;Personal story discussion board</td>
<td>Self-report of quitting at end of intervention (14.3%) and at 6-months (25.7%)</td>
</tr>
<tr>
<td>Gala, 2008</td>
<td>Interactive website with self-monitoring tools, motivational/educational materials (4 weeks)&lt;br&gt;Computer-generated tailored counseling emails&lt;br&gt;Message Board</td>
<td>30-day point prevalence (8%) at 4-weeks</td>
</tr>
<tr>
<td>Obermayer, 2004</td>
<td>Personalized, automated text messages&lt;br&gt;Web-site feedback to view log of messages, track progress and receive support messages from others&lt;br&gt;Educational modules</td>
<td>7-day point prevalence abstinence (22%) with biochemical validation (17%) at 6-weeks</td>
</tr>
<tr>
<td>Prokhorov, 2008</td>
<td>“Look At Your Health”&lt;br&gt;Computer-generated feedback delivered by counselors using motivational interviewing approach</td>
<td>7-day point prevalence abstinence (28.5%) with biochemical validation (16.6%) at 10-months</td>
</tr>
<tr>
<td>Riley, 2008</td>
<td>Replication of Obermayer, 2004 except that participants were assisted in initiating the program on the Web to begin text messages immediately</td>
<td>7-day point prevalence abstinence (45%) with biochemical validation (42%) at 6-weeks</td>
</tr>
<tr>
<td>Rodgers, 2005</td>
<td>Computer-generated personalized text messages added to existing practice. (5/day-3/week over 26 weeks)</td>
<td>7-day point prevalence abstinence (28%) with biochemical validation (13.9%) at 6-weeks and 7-day abstinence at 26 weeks (25.4%)</td>
</tr>
</tbody>
</table>
Step 3: Synthesize best evidence

- Primary outcome measure: smoking/tobacco abstinence
  - Statistically significant improvement in quit rates
  - Gaps in literature
    - Multiple components, differences in interventions and # of contacts
    - Not clear what types of computer-based applications most effective
  - Sufficient evidence
    - Combine evidence with clinical judgment
Step 4: Design practice change

• Change process
  – Multi-disciplinary team; Training

• Theoretical foundation
  – Social Cognitive Theory (SCT) and Transtheoretical Model (TTM)

• E-mail coaching intervention
  – 10-12 e-mails over 3-month period

• Resources
  – Direct and indirect costs
  – MACHA grant to cover cost of peer coach

• Objectives
  – Outcome objectives
  – Process objectives → Activities/timeframe
Process and outcome objectives

- Identification of tobacco use
  - “Have you used any tobacco products in past 30 days?”
  - Documented on EMR
- Enroll eligible tobacco users
  - Offer 100% tobacco users a Quit Kit
- E-mails delivered according to schedule
  - Design templates
  - Review schedule
- Participants read some/most of e-mails
  - Qualtrics Survey
- **Participants self-report abstinence from tobacco**
  - At least 7 and/or 30 consecutive days six months after enrollment
UK IS TOBACCO FREE!

Use of tobacco products (cigarettes, cigars, chew, snuff, snus, water pipes, pipes, etc.) is not permitted on any University property—this includes classroom buildings, student housing, and parking areas.

UK is one of over 400 other US colleges and universities that have comprehensive tobacco-free policies.

Many (7 out of 10) UK students, staff, and faculty don’t use tobacco and of those that do many want to quit.

If you do use tobacco, we can help you QUIT and Conquer!

- Plan ahead and set a quit date.
- Use a combination of counseling and medicine.
- Get more information and support on how to quit.
- Consider using medication-FREE patches and gum are available.

Learn more at www.uky.edu/tobaccofree

Wanna Quit Tobacco? University Health Service has an APPT for that.

Pick up your Quit Kit today!

Tobacco Free Campus EST. 2009

www.ukhealthcare.uky.edu/uhs

See blue. in everything we do.
## Procedural differences between usual care and iQuit tobacco group

<table>
<thead>
<tr>
<th>Usual Care</th>
<th>Both Groups</th>
<th>iQuit Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contacted by email with invitation to come to UHS for counseling.</strong></td>
<td><strong>Asked about tobacco use during intake. Offered Quit Kit. Baseline Questionnaire completed.</strong></td>
<td><strong>Invited to participate in study. Informed consent completed. Sent 10-12 emails over next 12 weeks.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>May participate in other tobacco treatment services: face-to-face counseling and/or medications (prescription and non-prescription).</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Free NRT products available.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Email with link to on-line survey sent six months after receipt of Quit Kit.</strong></td>
<td><strong>Email with link to on-line survey sent at completion of 12-week intervention.</strong></td>
</tr>
</tbody>
</table>
Intervention

- 10-12 email messages
  - Sent weekly over 3-month period
  - Adapted from “X-Pack”
- Based on Transtheoretical Model and Social Cognitive Theory
- Tailored to stage of change, use of tobacco products, triggers, etc.
- Sent from CTTS and peer coach
Sample of coaching email

Are you ready?
Looking at the things you dislike and like about smoking can help sort out your feelings about quitting. Be honest about what you’ll miss about smoking, like relaxing with friends on the patio. What are the “good things” about smoking? Use this list to help make your best plan for quitting. Then think about what you don’t like or the “not so good things” about smoking, like the smell on your clothes or the cost. This list will help remind you of what you will have to deal with if you smoke again – look it over when you have the urge to smoke.

After looking at the “good things” and “not so good things,” where does that leave you now?

Pick a day to save your life – set a quit date.

Email back and let me know your top two “good” and “not so good” things about smoking. We are here to help when you decide to quit – you don’t have to do it alone!
Step 5: Implement and evaluate change in practice

• Pilot 11/1/2010-12/30/2011
  – Enrolled 51 participants in iQuit intervention

• Qualitative data
  – Stakeholders: participants, staff, team members

• Quantitative data
  – Reviewed schedule, computer records, EMR
  – On-line survey at 3- and 6-months post enrollment

• Modifications
  – Team members input
  – Refined
<table>
<thead>
<tr>
<th></th>
<th>Overall (N=188)</th>
<th>iQuit Tobacco (n=50)</th>
<th>Usual Care (n=138)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, mean ± SD</strong></td>
<td>21.9 ± 3.2</td>
<td>21.7 ± 3.2</td>
<td>22.0 ± 3.1</td>
<td>0.59</td>
</tr>
<tr>
<td><strong>Gender, n (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.89</td>
</tr>
<tr>
<td>Male</td>
<td>105(55.9%)</td>
<td>27(54.0%)</td>
<td>78(56.5%)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>83(44.1%)</td>
<td>23(46.0%)</td>
<td>60(43.5%)</td>
<td></td>
</tr>
<tr>
<td><strong>Ethnicity, (n=29)^</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Non-white</td>
<td>4(15.4%)</td>
<td>2(20.0%)</td>
<td>2(12.5%)</td>
<td></td>
</tr>
<tr>
<td><strong>Academic status, n (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.32</td>
</tr>
<tr>
<td>Underclassmen</td>
<td>67(35.8%)</td>
<td>20(40.0%)</td>
<td>47(34.3%)</td>
<td></td>
</tr>
<tr>
<td>Upperclassmen</td>
<td>91(48.7%)</td>
<td>20(40.0%)</td>
<td>71(51.8%)</td>
<td></td>
</tr>
<tr>
<td>Graduate/Professional</td>
<td>29(15.5%)</td>
<td>10(20.0%)</td>
<td>19(13.9%)</td>
<td></td>
</tr>
<tr>
<td><strong>Medical History, n (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.35</td>
</tr>
<tr>
<td>Negative</td>
<td>125(66.8%)</td>
<td>34(68.0%)</td>
<td>91(66.4%)</td>
<td></td>
</tr>
<tr>
<td>Depression, anxiety, bipolar, other psychiatric illness</td>
<td>47(25.1%)</td>
<td>10(20.0%)</td>
<td>37(27.0%)</td>
<td></td>
</tr>
<tr>
<td>Asthma, abnormal pap, other chronic illness</td>
<td>15(8.0%)</td>
<td>6(12.0%)</td>
<td>9(6.6%)</td>
<td></td>
</tr>
</tbody>
</table>

Analysis by χ² for categorical variables and independent t test for continuous variables.
*Significance at alpha level .05. ^Ethnicity measured at follow-up
Number of cigarettes per day, mean by intervention group at baseline

![Bar chart showing number of cigarettes per day (cpd) by intervention group.](chart.png)

- **iQuit Tobacco**: Higher number of cigarettes per day compared to **Usual care**.

* p=0.01
Tobacco variables by intervention group at baseline, percent

- Non-daily use
- Hookah use*
- Polyuse

*iQuit Tobacco
Usual care

*\(p<0.05\)
Stage of change at baseline

- Preparation: 75%
- Contemplation: 11%
- Precontemplation: 14%
Scaling for behavior change

Importance of quitting and Confidence in ability to quit

Importance: 8
Confidence: 6
<table>
<thead>
<tr>
<th>Trigger</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bored</td>
<td>29</td>
</tr>
<tr>
<td>Stressed out</td>
<td>46</td>
</tr>
<tr>
<td>Drinking coffee</td>
<td>19</td>
</tr>
<tr>
<td>With family</td>
<td>7</td>
</tr>
<tr>
<td>In the car</td>
<td>35</td>
</tr>
<tr>
<td>On way to class</td>
<td>23</td>
</tr>
<tr>
<td>Drinking alcohol</td>
<td>38</td>
</tr>
<tr>
<td>Hanging out with friends</td>
<td>38</td>
</tr>
</tbody>
</table>
Satisfaction at end of intervention

- Engagement: 48%
- Read most/all of emails: 67%
- # just right: 89%
- Helped with quitting: 22%

n=50 for engagement; n=9 for other variables
Effects on abstinence from tobacco by intervention group at 6 months

<table>
<thead>
<tr>
<th></th>
<th>Overall (n=27)</th>
<th>iQuit Tobacco (n=9)</th>
<th>Usual Care (n=18)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-day abstinence, n(%)</td>
<td>7 (25.9%)</td>
<td>1 (11.1%)</td>
<td>6 (33.3%)</td>
<td>0.44</td>
</tr>
<tr>
<td>30-day abstinence (missing assumed smoking), n(%)</td>
<td>7 (3.7%)</td>
<td>1 (2.0%)</td>
<td>6 (4.3%)</td>
<td>0.75</td>
</tr>
</tbody>
</table>
Quit attempts at 6-months by intervention group

- No attempt: iQuit (0%) vs. Usual Care (10%)
- 1 attempt: iQuit (30%) vs. Usual Care (40%)
- 2 or more attempts: iQuit (60%) vs. Usual Care (70%)

p = 0.57
Days since last tobacco use and change in # cpd by intervention group at 6-months

<table>
<thead>
<tr>
<th>Days since last use*</th>
<th>Reduction in cpd</th>
</tr>
</thead>
<tbody>
<tr>
<td>iQuit</td>
<td>1.8</td>
</tr>
<tr>
<td>Usual Care</td>
<td>0</td>
</tr>
</tbody>
</table>

*p=0.03
Distribution of 30-day point prevalence abstinence within exposure to treatment

- No treatment (n=5)
- Clinic Treatment (n=15)
- Used medication (n=19)

30-day point prevalence abstinence (% within treatment)
Any email coaching and associated 30-day point prevalence abstinence

<table>
<thead>
<tr>
<th>Condition</th>
<th>No.</th>
<th>Abstinence Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any email coaching (n=14)</td>
<td></td>
<td>36%</td>
</tr>
<tr>
<td>No email coaching (n=13)</td>
<td></td>
<td>15%</td>
</tr>
</tbody>
</table>

P = 0.39
Exposure to evidence-based treatments at 6-months by intervention group

- **Used med**
  - iQuit: 78%
  - Usual care: 67%

- **Clinic Tx**
  - iQuit: 67%
  - Usual care: 50%

*p = 0.68*
Individual counseling in clinic for all participants, by intervention group

- iQuit: 44.0%
- Usual care: 17.4%

N=188  
*p<0.001
Discussion

- Real world application
- Participants representative of population
- Cross-contamination
- Free NRT
- Clinically significant findings
Implications for practice

• Ask
• Advise
• Refer
Limitations

• Non-random assignment
• Most were in preparation phase
• Comprehensive campus-wide tobacco-free policy
• No biochemical verification
• High rate of attrition
• Small sample size
Step 6: Integrate and maintain change in practice

- Implemented clinic wide 10/1/2011
  - Continued evaluation with surveys at 3- and 6-months

- Reviewed and communicating findings

- Focus groups of participants

- Text messaging?
Marketing the iQuit Program
Door hangers designed for campus housing
Quit Kit Conquer Cravings Card

iThink...iQuit...iConquer

TOP 3 Reasons for Quitting

1)

2)

3)

QUIT Date: ____________

1. Delay - reaching for that cigarette or dip
2. Deep Breathing - Take 10 deep breaths
3. Drop - a piece of gum in your mouth
4. Distract - your attention with the contents of your QUIT KIT

iQuit
Conquer Cravings

An Equal Opportunity University
An Equal Opportunity University

iQuit campaign adopted by other campus departments
Great American Smokeout Marketing 2011

Tobacco-Free UK:
A Healthy Place to Live, Work and Learn

Use of tobacco products (cigarettes, e-cigarettes, cigars, snuff, snus, water pipes, pipes, etc.) is not permitted on any University property, including all campus grounds inside and out, parking areas and student housing.

Please Respect Our Policy

www.uky.edu/tobaccofree

Tobacco-Free UK:
Breath Free 5K Lung Cancer Walk
11/13: 9:15am
UK Hospital Pavilion A

Two Year Anniversary Celebration
11/14: 10am-12pm
Student Center Room 230

Great American Smokeout
11/17: 11am-2pm
Rose St Walkway and Classroom/POT Plaza

FREE FOOD!

www.uky.edu/TobaccoFree

An Equal Opportunity University
UK Kicks Butts
7,848 Lives Lost in KY each year due to SMOKING
Come join us to Kick Butts
April 17, 2012
11-2pm Student Center Patio

Each Handprint = 5 lives lost each year due to Tobacco use in Kentucky
Handprints Needed to represent Second-hand smoke deaths in KY each year!
Top 5 Littering MYTHS

1. MYTH: Cigarettes are biodegradable.
   ✔ FACT: Cigarette butts take up to 30 years to break down.

2. MYTH: Littering cigarette butts is harmless.
   ✔ FACT: Cigarettes are the number one cause of fire related deaths!

3. MYTH: Litter is only a visual problem.
   ✔ FACT: Cigarette filters are made of cellulose acetate plastic and other chemicals that are harmful to the water stream and wildlife.

4. MYTH: Littering only occurs when there is no trash can.
   ✔ FACT: Most littering occurs within 6 yards of a trash can.

5. MYTH: No one notices litter.
   ✔ FACT: Litter destroys the beauty and affects the safety of our community
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Tobacco-Free UK:
A Healthy Place to Live, Work and Learn
Tobacco Free Campus Policy Reminder Cards

Thank You for Not Using Tobacco Products on Campus
FREE resources are available for students who wish to stop using tobacco or to remain comfortable on campus. FREE counseling, nicotine replacement therapy and educational materials are available!

PLEASE ENJOY A FREE FOUNTAIN DRINK.
We Appreciate Your Compliance.
For information on resources: http://www.uky.edu/TobaccoFree

Tobacco-Free UK:
A Healthy Place to Live, Work and Learn

Thank You for Not Using Tobacco Products on Campus
PLEASE ENJOY A FREE FOUNTAIN DRINK.
We Appreciate Your Compliance.
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K-Lair Grill  Trattoria Erickson  Café du Chat  Ovid’s Cafe
Latte da Café  Ag. North Deli  Intermezzo  Blue Chips Café
Bluegrass Café  Student Center Food Court

Valid through 12-31-10. Offer good for one fountain drink. No change given.
An Equal Opportunity University

University of KY
@iQuitatUK

Want to quit tobacco? iQuit at UK can help. Call 323-2778 to make an appointment to speak with a tobacco treatment specialist today.
Lexington KY • http://www.facebook.com/#!/UKstudenthealth

Tweets

Smokefree.gov @ NCI @SmokefreeGov
Cravings are NOT the boss of you! Fight back-kill the urge to smoke. Drink cold water, mints, or use mouthwash. It really works! #strength
Retweeted by University of KY
Expand

University of KY @iQuitatUK
Stop by the Student Center patio tomorrow from 11-2 for UK Kicks Butts! Free drink cards, giveaways, and info on quitting tobacco.
Expand

University of KY @iQuitatUK
Did you know more than a million dollars an hour is spent to market tobacco products in the US? UK Kicks Butts 4/17:
uknow.uky.edu/content/uk-kic...
Expand

University of KY @iQuitatUK
Did you know that 7,848 lives are lost in KY each year due to smoking? Learn more at uknow.uky.edu/content/uk-kic...
Expand

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Acknowledgements

- University Health Service
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  - University of Kentucky, College of Nursing
- Lorien Abroms, ScD
  - George Washington University School of Public Health
- Sarah Adkins, Statistician
  - University of Kentucky, College of Nursing
“The simple fact is that we cannot end the tobacco epidemic without focusing our efforts on young people.”

References


Questions??
8TH WONDERS
Cats cap phenomenal season with a crown