

**QUALITY IMPROVEMENT PROJECT
ASSESSING THE EFFECTIVENESS OF CURRENT
SMOKING CESSATION RESOURCES FOR
NORFOLK PUBLIC HOUSING RESIDENTS**

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Introduction

- Cigarette smoking – leading preventable cause of mortality and morbidity in the US
 - 1/3 of all US cancer-related deaths
 - 87% of lung cancer cases result from smoking¹
- Disproportionately high smoking rates exist among racial minorities and populations with low education, income, & occupational status^{2,3}

Introduction, cont.

- Smoking has striking impact on SES and racial/ethnic disparities in cancer morbidity and mortality
- Major contributor may be limited access to effective smoking cessation resources
- Low health literacy may serve as critical and independent risk factor for poor cessation outcomes among low-socioeconomic status, racially/ethnically diverse smokers²⁵

Health Literacy

- Health literacy definition:
 - the degree to which individuals have the capacity to obtain, process, and understand basic health information and services⁴
- 2003 National Assessment of Health Literacy found that 36% of U.S. adult population has basic or below basic health literacy level⁵

Implications of Inadequate Health Literacy

- ❑ Serious challenges understanding and acting on health information including...
 - ❑ Wording on medication bottles
 - ❑ Food labels
 - ❑ Appointment slips
 - ❑ Discharge instructions
 - ❑ Informed consent documents
 - ❑ Medical forms
 - ❑ Insurance applications
 - ❑ Medical bills
 - ❑ Health education materials

Health Literacy and Patient Education Materials

- U.S. adults on average = 8th grade reading level⁶
 - Healthcare organizations such as National Work Group on Cancer and Health¹⁹, American Medical Association²⁰, and National Institutes of Health²¹ recommend readability of patient information materials should be no higher than sixth-grade level
 - Centers for Disease Control and Prevention recommends the readability to be lower than eighth-grade level²²
- 75% of patient education materials written at high school or college reading level⁶
- Giving patients written information is vital in reinforcing verbal instructions
 - Therefore – vital to ensure readability of patient education materials

Health Literacy and Outcomes

- An individual's health literacy considered the single best predictor of their health status^{10,11,12}
- Poor health literacy associated with –
 - Higher incidence of chronic illness (diabetes, HTN, etc.)¹³
 - More limited access to prevention and treatment programs¹³
 - Lower levels of illness-related knowledge
 - Higher overall mortality rates^{14,15,16}

Health Literacy's Impact on Smoking Cessation

- Health literacy – vital component for an individual's successful smoking cessation
- Lower health literacy associated with --
 - Higher nicotine dependence
 - Less knowledge about health risks of smoking
 - Less negative smoking outcome expectancies^{8,9}

Policy Change for Norfolk Public Housing Residents

- ❑ February 2017 federal mandate – requiring all public housing in the U.S. to go smoke-free within 18 months
- ❑ July 1st 2018 – Norfolk public housing went smoke free
- ❑ HUD and CDC study revealed higher smoking rates and adverse health outcomes among adults receiving federal housing assistance
 - ❑ 33.6% of HUD-assisted adults – current cigarette smokers³²
- ❑ Norfolk has largest public housing community in Virginia – over 8,000 residents
- ❑ EVMS researcher Andy Plunk, PhD, received HUD grant to examine how the smoke-free policy will impact Norfolk Public housing residents

Norfolk Redevelopment and Housing Authority Communities

Community Name	Total Units of Housing	Residents	Residents	Residents	Residents
		0 to 5 years	6 to 17 years	18-55 years	Over 55 years
Calvert Square	310	121	257	271	82
Diggs Town	422	178	456	416	84
Grandy Village	337	143	333	341	76
Oakleaf Garden	257	158	323	285	45
Tidewater Garden	618	320	586	623	133
Young Terrace	746	362	542	695	181

Methods

- Quality improvement project assessing the effectiveness of current smoking cessation resources for Norfolk Public Housing residents
- Attended and participated in four Life Skills youth program summer sessions
 - Evidence based substance abuse prevention program
 - Goals of engaging and educating Norfolk Public School students in public housing and empowering them to be peer educators and community leaders
- Lead two group discussions to generate feedback on the current smoking cessation resources and educational materials
 - Community Advisory Board
 - Life Skills Youth Program (13-14 year olds)
- Assisted in facilitating focus group of Young Terrace residents (public housing community)
 - Group consisted of current and former smokers to assess attitudes/impact of the new smoke-free policy

Group Discussion Objectives

- Discover which resources offer real potential to support people who are seeking to quit smoking
- Generate feedback on educational resources and what students and CAB members found to be useful
- Find out whether technological services such as apps, text messaging services, and websites would be utilized by community members

Resources Examined

- 3 written handouts/fliers
 - Different targeted strategies for smoking cessation
- 2 different 3-4 minute videos
- Inquired whether community members utilize --
 - 1-800-QUIT-NOW quit line
 - Low or no-cost medicines
 - Apps such as QuitGuide or QuitStart
 - Text messaging services
 - Websites such as smokefree.gov
 - Nicotine replacement therapy (patches, lozenges, etc.)

Results - Written Handouts

Within 20 Minutes of Quitting

Within 20 minutes after you smoke that last cigarette, your body begins a series of changes that continue for years:

- 20 Minutes After Quitting:** Your heart rate drops.
- 12 Hours After Quitting:** Carbon monoxide level in your blood drops to normal.
- 2 Weeks to 3 Months After Quitting:** Your heart attack risk begins to drop.
- 1 to 9 Months After Quitting:** Your coughing and shortness of breath decrease.
- 5 Years After Quitting:** Your stroke risk is reduced to that of a nonsmoker's 5-15 years after quitting.
- 10 Years After Quitting:** Your risk of cancer of the mouth, throat, esophagus, bladder, kidney, and pancreas decreases.
- 10 Months After Quitting:** Your lung function begins to improve.
- 18 Years After Quitting:** Your lung cancer death rate is about half that of a smoker's.
- 15 Years After Quitting:** Your risk of coronary heart disease is back to that of a nonsmoker's.

Yes! You Can Do This!

SENTARA
Community Health and Prevention

1-800-736-8272 www.sentara.com/tobaccocessation



**GET READY.
GET SET.
QUIT NOW.**

THREE Good Reasons to Call It Quits.

- 1 QUALITY OF LIFE:** Live a Healthier, Longer Life.
- 2 YOUR HEALTH:** Tobacco use causes cancer, heart disease, diabetes, chronic bronchitis, asthma, emphysema and many other health problems.
- 3 THE COST:** The average smoker in Virginia spends \$2,000 a year on cigarettes or tobacco. Just take the money and LIVE!

MAKE LIFE YOUR NEW HABIT.

1-800-QUIT NOW

1-800-QUIT NOW
1-800-784-8669
VIRGINIA
QUITNOW.HET.VIRGINIA

VDH Virginia Department of Health

TAKE THE STEP TO A HEALTHIER LIFE

1-800-QUIT NOW VIRGINIA

TOBACCO IS A STRONG ADDICTION, BUT YOU ARE EVEN STRONGER.

FREE HELP IS JUST ONE STEP AWAY.



1-800-QUIT NOW

A TIP FROM A FORMER SMOKER

AFTER YOU HAVE A LUNG REMOVED, TAKE SHORT BREATHS.

Annette, Age 57, Diagnosed at 52 New York



Smoking causes immediate damage to your body. For Annette, it caused lung cancer. You can quit. For free help, call 1-800-QUIT-NOW



Results - Videos



Quitting Smoking Timeline

1,785,746 views

9.8K 241 SHARE ...



How To Quit Smoking

488,008 views 1K 190 SHARE ...

Videos - Results

- 6 of 8 students and 8 of 9 CAB members ranked the “Quitting smoking timeline” as better than the “How to quit smoking”
- Both groups said the quitting smoking timeline was helpful and could be motivating for someone trying to quit
- Both groups said they would not use QR code to access this video, and people would not just look it up

Results - Technology

- ❑ No one in either group was able or interested in downloading QuitGuide or QuitStart smoking cessation phone apps
- ❑ Most of the youth group and CAB group had not seen a QR code before
- ❑ Youth group said no one would download an app to help them quit smoking; they already have too many apps
- ❑ Both groups said text messaging service would be “aggravating”

Community Advisory Board Results

- 9 members, mostly middle-aged and elderly women living in midrise public housing communities
 - 2 current smokers, 2 former smokers
- Long term health is a real concern
- CAB members most impacted by the health benefits of quitting for both written handouts and videos
- Videos will need to be shown in group smoking cessation meeting or at educational sessions in August
- QR codes / phones will not be an effective medium

Youth Group Results

- 8 Norfolk Public School students ages 13-14
 - No current or former smokers, 6 reported family members who smoke
- Unexpected technology results – were not interested in apps or text messages
- Multiple students agreed they would follow the SmokeFree teen Instagram account from [smokefree.gov](https://www.smokefree.gov)
 - Several students argue that people would only watch videos if they were on Instagram
- While I probed about the effectiveness of fliers or calling quit line -- students voiced variations of “depends how much they actually care,” and “there might not be anybody who cares” 5 different times

Focus Group Themes – Young Terrace

- ❑ 7 women present, ranging in ages from 26-72
- ❑ Questions focused on assessing attitudes and impact on Norfolk Public Housing residents now that smoke-free policy has been enacted
- ❑ 4 women currently smoking
- ❑ 3 women former smokers
- ❑ Discussion questions included –
 - ❑ Explain smoking ban
 - ❑ Where do you smoke after the ban
 - ❑ Do you feel safe where you smoke
 - ❑ What have you done to try and quit smoking
 - ❑ How would you go about getting NRT
 - ❑ Would e-cigarettes help you quit smoking
 - ❑ Would you prefer a class or one-on-one support group

Focus Group Themes

- ❑ General indignation and anger over the smoking ban
- ❑ Smoking behaviors have not changed
 - ❑ When asked where they now smoke, one participant responded: “Front porch, kitchen, living room. It’s my home. I’m the one who pays my bills. I’m not walking where nobody gonna get shot tryna smoke a cigarette!”
 - ❑ Every woman emphatically agreed that safety is a real concern
- ❑ Frustration that there is no designated safe smoking area
 - ❑ “I was told that [a different community] had the place that they had for people to go sit down, and a place to put the cigarettes out in, so they didn’t have to stand out in the rain and the snow...so if they gonna do this project and this policy, they shoulda had that set up before they even started this.”

Focus Group Themes, Cont.

- Group was not aware that e-cigarettes are included in the ban
 - They mentioned knowing people who currently use them and who have successfully used them in the past to help them quit smoking, most stated that e-cigarettes are a “good alternative”
- Everyone in the group repeatedly emphasized that the individual has to “be ready” in order to successfully quit (10 times during discussion)
 - “I think it should be on our own time. Because when someone else is trying to tell you how to live your life, you ain’t gonna do it. I’m sorry. It ain’t gonna work.”

Focus Group Themes, Incentives

- Inquired whether getting paid to quit would make it easier
 - Only 2 women said yes to financial incentives – they both had already quit
 - Other 7 women said money would not help; said they need cigarettes to “calm their nerves”
 - “It wouldn’t work, that’s why. You’d lie and take the money. But you gonna definitely keep on smoking. If you not ready to stop, you gon keep going.”
 - If you’re not ready to quit, you can’t quit. It’s simple! Especially if you got a high addiction to them...it’s not that easy to just—“Oh, they gon give me 50 dollars, let me stop smoking.” It ain’t that easy! And we still got bills to pay! They ain’t paying over that? Then, that counts it out!”
- They did ask if their rent would be cut because of this ban

Focus Group Themes, NRT

- When asked how they would get NRT or medication they replied “just go to your primary care doctor”
 - Many of the women had tried patches, Wellbutrin, Chantix, and vapes to quit
- State that gum and patches are expensive and lower-cost NRT might help

Focus Group Themes, Support Groups

- Several participants inquired about support groups before we asked:
 - “I got a question. At the end of this, it’s just like, is there an AA, to try and stop smoking? Is there gonna be a program for it?”
 - “And sometime, I feel like a group of people, kind of helping, what they call it? You know, motivate you? You know. Say “Oh, you went 2 hours without smoking? You did good, girl! Come on, we bouta go get our hair done or something!” You know, praise em on, I think that would probably help to get em motivated to want to quit and stuff too.”
- Participants all agreed that they’d prefer a support group over a one-on-one session – mentioned learning new strategies that have worked for others
 - Two women said that both formats would be helpful

Focus Group Possible Leaders

- When asked who would be best to lead a focus group, participants emphasized having a former smoker who “knows the feeling” and “somebody that could let us know that it could actually be done”
 - “Mhmm, cause if they ever been a smoker, I can understand. Send me one that’s smoked and quit. Don’t send me one that’s never smoked.”
- Could be problematic because none of the former smokers said they would be willing to lead a class

Recommendations

- Show educational videos such as the “Quitting Smoking Timeline” at the 3 August NRHA Community Impact Days and have “Within 20 Minutes of Smoking” and CDC handouts with minimal text available for handout
- Avoid anything with QR codes - not utilized and residents are not familiar with them
- Lowering rent is a possible positive incentive
 - Augment policy with different rent levels (test carbon monoxide levels to verify smoking status)
 - Cash incentives will not be an effective motivator to quit

Conclusions from Community Discussions and Future Directions

- Simply providing educational resources will be inadequate
- Community based participation is crucial – focus on recruiting community members who are former smokers to lead support groups or smoking cessation classes
- For those not ready to quit, community members feel that there needs to be a safe designated smoking space away from their apartments

References

1. Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. *JAMA*. 2004;291(10):1238–1245. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3682601/#bib1>
2. US Department of Health and Human Services. *The Health Consequences of Smoking: A Report of the U.S. Surgeon General*. Washington, DC: US Government Printing Office; 2004.
3. Centers for Disease Control and Prevention. Vital signs: current cigarette smoking among adults aged ≥ 18 years—United States, 2009. *MMWR Morb Mortal Wkly Rep*. 2010;59(35):1135–1140
4. Nielsen-Bohlman L, Panzer AM, Kindig DA. *Health Literacy: A Prescription to End Confusion*. Washington, DC: Institute of Medicine, National Academies Press; 2004.
5. Kutner M, Greenburg E, Jin Y, Paulsen C. Washington, DC: National Center for Education Statistics; 2006. *The Health Literacy of America's Adults: Results from the 2003 National Assessment of Adult Literacy*. NCEES 2006-483.
6. Sabharwal S, Badarudeen S, Unes Kunju S. Readability of online patient education materials from the AAOS web site. *Clin Orthop Relat Res*. 2008;466:1245–1250. doi: 10.1007/s11999-008-0193-8.
7. Badarudeen, S., & Sabharwal, S. (2010). Assessing Readability of Patient Education Materials: Current Role in Orthopaedics. *Clinical Orthopaedics and Related Research*, 468(10), 2572–2580. <http://doi.org/10.1007/s11999-010-1380-y>

References, cont.

8. US Department of Health and Human Services. The Health Consequences of Smoking: A Report of the U.S. Surgeon General. Washington, DC: US Government Printing Office; 2004.
9. Brandon TH, Juliano LM, Copeland AL. Expectancies for tobacco smoking. In: Kirsch I, editor. How Expectancies Shape Experience. Washington, DC: American Psychological Association; 1999. pp. 263–299.
10. Wetter DW, Cofta-Gunn L, Fouladi RT et al. Understanding the associations among education, employment characteristics, and smoking. *Addict Behav.* 2005;30(5):905–914. [[PubMed](#)]
11. Honjo K, Tsutsumi A, Kawachi I, Kawakami N. What accounts for the relationship between social class and smoking cessation? Results of a path analysis. *Soc Sci Med.* 2006;62(2):317–328. [[PubMed](#)]
12. Vidrine JI, Reitzel LR, Wetter DW. The role of tobacco in cancer health disparities. *Curr Oncol Rep.* 2009;11(6):475–481. [[PubMed](#)]
13. Michielutte R, Alciati MH, Arculli R. Cancer control research and literacy. *J Health Care Poor Underserved.* 1999;10(3):281–297. [[PubMed](#)]
14. Baker DW, Parker RM, Williams MV, Clark WS, Nurss J. The relationship of patient reading ability to self-reported health and use of health services. *Am J Public Health.* 1997;87(6):1027–1030.
15. Varekojis SM, Miller L, Schiller MR, Stein D. Functional health literacy and smoking cessation outcomes. *Health Educ.* 2011;111(6):464–475.

References, cont.

16. Arnold CL, Davis TC, Berkel HJ, Jackson RH, Nandy I, London S. Smoking status, reading level, and knowledge of tobacco effects among low-income pregnant women. *Prev Med.* 2001;32(4):313–320. [[PubMed](#)]
17. Albright J, Guzman C, Acebo P, Paiva D, Faulkner M, Swanson J. Readability of patient education materials: implications for clinical practice. *Appl Nurs Res.* 1996;9:139–143. doi: 10.1016/S0897-1897(96)80254-0. [[PubMed](#)]
18. Cooley ME, Moriarty H, Berger MS, Selm-Orr D, Coyle B, Short T. Patient literacy and the readability of written cancer educational materials. *Oncol Nurs Forum.* 1995;22:1345–1351. [[PubMed](#)]
19. Cotugna N, Vickery CE, Carpenter-Haeefe KM. Evaluation of literacy level of patient education pages in health-related journals. *J Community Health.* 2005;30:213–219. doi: 10.1007/s10900-004-1959-x.
20. Weiss BD. *Health Literacy: A Manual for Clinicians.* Chicago, IL: American Medical Association, American Medical Foundation; 2003.
21. National Institutes of Health. *How to Write Easy to Read Health Materials.* National Library of Medicine Web site. Available at: <http://www.nlm.nih.gov/medlineplus/etr.html>. Accessed Feb 1, 2009.
22. Centers for Disease Control and Prevention Web site. *Scientific and Technical Information Simply Put.* Available at: http://www.cdc.gov/DHDSPP/cdcynergy_training/Content/activeinformation/resources/simpput.pdf. Accessed Dec 1, 2009.

References, cont.

23. Berland GK, Elliott MN, Morales LS, Algazy JI, Kravitz RL, Broder MS, Kanouse DE, Munoz JA, Puyol JA, Lara M, Watkins KE, Yang H, McGlynn EA. Health information on the Internet: accessibility, quality, and readability in English and Spanish. *JAMA*. 2001;285:2612–2621. doi: 10.1001/jama.285.20.2612. [[PubMed](#)]
24. D’Alessandro DM, Kingsley P, Johnson-West J. The readability of pediatric patient education materials on the World Wide Web. *Arch Pediatr Adolesc Med*. 2001;155:807–812. [[PubMed](#)]
25. Stewart DW, Adams CE, Cano MA, et al. Associations Between Health Literacy and Established Predictors of Smoking Cessation. *American journal of public health*. 2013;103(7): e43-e49. doi:10.2105/AJPH.2012.301062.
26. NRHA Public Housing Communities Go Smoke Free. (2018, May 10). Retrieved from <http://www.nrha.us/content/nrha-public-housing-communities-go-smoke-free>
27. University of Wisconsin Population Health Institute. (2018). County Health Rankings and Roadmaps: Health Outcomes for Norfolk City . Retrieved from <http://www.countyhealthrankings.org/app/virginia/2018/rankings/norfolk-city/county/outcomes/overall/snapshot>
28. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. 500 Cities Project Data [online]. 2016 [accessed Jun 19, 2018]. URL: <https://www.cdc.gov/500cities>.
29. Tuong, W., Larsen, E. R., & Armstrong, A. W. (2012). Videos to influence: A systematic review of effectiveness of video-based education in modifying health behaviors. *Journal of Behavioral Medicine*, 37(2), 218-233. doi:10.1007/s10865-012-9480-7
30. Stanczyk, N., Vries, H. D., Candel, M., Muris, J., & Bolman, C. (2016). Effectiveness of video- versus text-based computer-tailored smoking cessation interventions among smokers after one year. *Preventive Medicine*, 82, 42-50. doi:10.1016/j.ypmed.2015.11.002
31. Cinciripini, P., McClure, J., Wetter, D., Perry, J., Blalock, J., Cinciripini, L., ... Skaar, K. (2000). An evaluation of videotaped vignettes for smoking cessation and relapse prevention during pregnancy: the Very Important Pregnant Smokers (VIPS) program. *Tobacco Control*, 9(Suppl 3), iii61–iii63. http://doi.org/10.1136/tc.9.suppl_3.iii61
32. Helms, V. E., King, B. A., & Ashley, P. J. (2017). Cigarette smoking and adverse health outcomes among adults receiving federal housing assistance. *Preventive Medicine*, 99, 171–177. <http://doi.org/10.1016/j.ypmed.2017.02.001>

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