

Physicians as change agents to facilitate tobacco cessation in clinical practice

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Title of Project: Physicians as change agents to facilitate tobacco cessation in clinical practice.

Overall goal of the project: To increase physician-assisted tobacco cessation among patients in tertiary hospitals by identifying, reaching, training and working with emerging leaders (resident doctors) in medical and dental teams to prioritise and practice tobacco cessation within their local work settings.

Project objectives:

1. Identify and recruit 20 physicians in each of the three collaborating institutions as primary tobacco cessation change agents (PTCCA)
2. Motivate and train these primary change agents as focal persons for tobacco cessation within their respective departmental units using a traditional intensive two-day face-to-face training session and innovative mobile phone technologies such as SMS and internet based approaches like emails over a six-month period.
3. Support the PTCCA's to promote tobacco cessation among other physicians in their respective departmental units (Secondary Tobacco Cessation Change Agents) using SMS and internet based technologies over a three-month period.

Technical approach:

How will our project meet the goal of this RFP? This RFP is focused on supporting initiatives that focus on building on health workers' capacity for evidence-based tobacco dependence treatment. Our project aligns with the IGLC's goal of increasing quitting by improving the frequency and effectiveness of physician-led tobacco dependence treatment interventions i.e. brief advice, motivational interviewing techniques and pharmacotherapy. In line with the Global Bridges mission, we also aim to create and mobilize a network of healthcare professionals dedicated to promoting evidence-based tobacco dependence treatment and advocacy for effective tobacco control policy. Particularly, our project aligns with the specific area of interest of this RFP, which calls for the promotion of evidence-based Innovation and the creation of healthcare professional training programs to support the IGLC's goal. Our project is based on the evidence that physician-led tobacco dependence treatment is effective and should be encouraged.¹ In addition, there is evidence that SMS and web-based interventions are effective in promoting behavioural change among health care workers in government settings.²⁻⁴ These are low-cost innovative and potentially effective means of promoting tobacco cessation to a larger number of physicians particularly in a resource-limited setting like ours. Furthermore, our project involves the collaborative efforts of researchers and practitioners in three large teaching hospitals in three of the six geopolitical zones within Nigeria and will cost less than \$100,000. Physicians are the target audience for this particular project. In the future, using the lessons learned from this project, we might seek to expand the intervention to include other cadre of non-physician health care workers in Nigeria.

Statement of the problem and project justification:

There is considerable evidence that physician-led tobacco cessation interventions increases quitting among smokers. Even when doctors provide brief advice about quitting smoking, it increases the likelihood that smokers will successfully quit and remain non-smokers 12 months later.¹ More intensive advice and pharmacological interventions may result in slightly higher rates of quitting.¹ Majority of the smokers in Nigeria desire to quit and have expressed the need for assistance with quitting.⁵ Smoking cessation is not included in the curriculum of most medical schools in Nigeria and there is evidence that knowledge of tobacco dependence treatment is poor among Nigerian physicians.⁶

With more than five billion mobile phone users worldwide, text-messaging technology has changed the face of communication globally. Since, the introduction of the GSM (Global System of Mobile communication) technology in Nigeria in 1999, many Nigerians now have access to mobile phones and the internet. The Nigerian Communications Commission reported that, as at January 2014, there were more than 23 million active mobile lines in the country.⁷

Short messaging systems (SMS) and internet-based technologies are increasingly being used to promote health and to prevent disease. A study in Kenya demonstrated that SMS was effective in promoting behavioural change among health care workers in government settings.² Mobile phone and internet use is particularly high among Nigerian physicians. One study reported that majority (70.7%) of physicians in Nigerian teaching hospitals use mobile phones and almost all (99%) use the internet for e-mails.⁸ These figures might open up a window of opportunity for the use of mobile and internet-based technology to promote behavioural change among health care workers. In addition, these technologies are comparatively low cost and have a wide reach. The costs of SMS and Internet bundles have been decreasing due to competitive market forces in Nigeria and are currently relatively low (about 3 cents per SMS). These interventions may therefore have an additional cost advantage in low-resource settings like Nigeria.

Baseline data summary: In Nigeria, according to the 2012 Global Adult Tobacco Survey (GATS) there are 4.7 million Nigerian adults aged 15 years or older who currently use tobacco products: 10.0% of men and 1.1% of women.⁵ Nigeria signed the FCTC in 2004 and ratified it in 2005 however efforts at implementing Article 14 have been sparse. Many Nigerian smokers desire to quit smoking and often make unassisted and unsuccessful quit attempts. In 2012, almost half (45.4%) of Nigerian adult smokers reportedly made unassisted and unsuccessful quit attempts in the past year.⁵ A similar study, using purposive sampling, conducted among smokers patronizing “pubs” in Bayelsa state, southern Nigeria, showed even higher rates where 72% of smokers had made attempts to quit smoking in the past. Eighty percent found it difficult or impossible to quit smoking and majority of the smokers (91.5%) felt they needed help to quit smoking.⁹ The level of awareness of smoking cessation products among these respondents was very low. For instance, only 25.3% and 11.9% were aware of the nicotine gum and patch respectively and less than 1% had ever used either of these cessation products. Even lower

figures were reported for awareness of varenicline and bupropion, where less than 10% were aware of these drugs and only 5.4% had ever had these drugs prescribed for them.⁹

Poor knowledge has been cited as the major barrier to physician-led smoking cessation interventions, with only 30.3% of physicians having good knowledge of smoking cessation in one multi-centre, cross sectional, self-administered, questionnaire-based, Nigerian study among physicians.⁶ Also, majority of the physicians in that study reported that tobacco education in the medical school curriculum in Nigeria is inadequate. Furthermore, while majority (86.2%) of physicians asked about patients smoking status, prescription of tobacco cessation medication was extremely low with only 6.6% prescribing smoking cessation medications for smokers.⁶ Few teaching hospitals in Nigeria have effective systems for the identification and treatment of tobacco using patients.

Intervention Design and Methods:

We will employ a non-randomised controlled intervention study design involving three intervention sites and three control sites within Nigeria. The intervention will be based on the integrative model of health and behavioural change.¹⁰ This model purports that health behavior change can be enhanced by fostering knowledge and beliefs, increasing self-regulation skills and abilities, and enhancing social facilitation.¹⁰

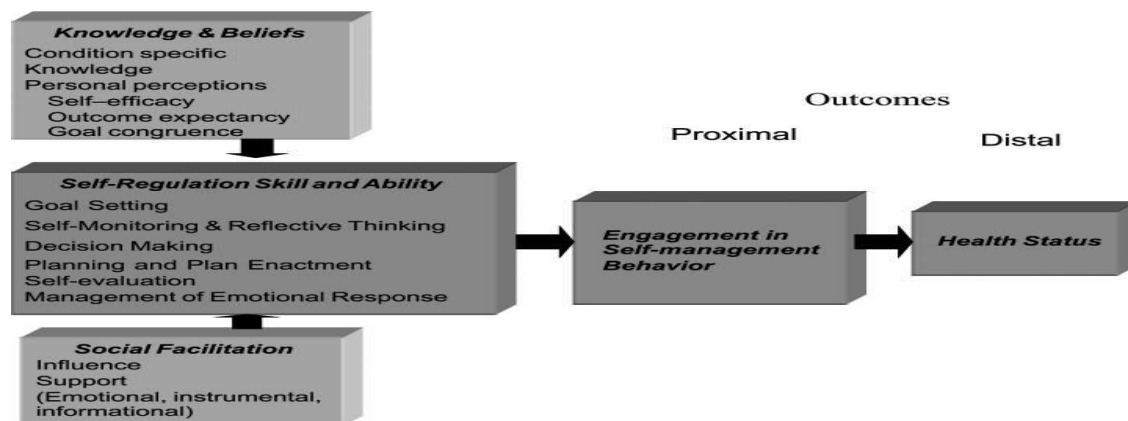


Figure 1: Integrated model for health and behavioural change.

According to this theory, persons will be more likely to engage in the recommended health behaviors if they have information about and embrace beliefs consistent with behaviour, if they develop self-regulation abilities to change their behaviors, and if they experience social facilitation that positively influences and supports them to engage in preventative health behaviors.¹⁰

There are three main activities of this project i.e.

1. Recruitment and training of primary tobacco cessation change agents (PTCCA).
2. Monitoring and support of the PTCCA's using voice calls, SMS and internet-based technologies over a six- month period.
3. Working with the PTCCA's to reach their departmental colleagues (Secondary TCCA'S) using SMS and the internet over a three-month period.

Recruitment and training of primary tobacco cessation change agents (PTCCA): We will identify, recruit, train, motivate and work with primary tobacco cessation change agents (PTCCA) in three teaching hospitals in Nigeria; Lagos University Teaching Hospital (LUTH), Federal Teaching Hospital, Abakaliki, Ebonyi state (FETHA) and University of Abuja Teaching Hospital (UATH). These hospitals have been purposively selected because they provide a level of geographical equity as they are situated in three different zones of the country. In addition, they are large teaching hospitals with a relatively large number of patients and resident doctors. We were not able to select a hospital up north because of the current security challenges in the northern parts of Nigeria.

The project will address the knowledge gaps in brief intervention strategies (Ask, Advise, Assess, Assist and Arrange-the 5A's approach), pharmacotherapy and motivational interviewing techniques since this is absent from the curriculum of most medical schools in Nigeria. In each institution, we will identify a minimum of two physicians in each of the relevant departments within the hospital. These physicians will serve as our primary tobacco cessation change agents (PTCCA) and thus potential network nodes or 'champions'. The PTCCA's will be selected primarily based on their interest in tobacco control and/or nominated by the departmental heads or chief resident. We will train, empower and work with the PTCCA's as focal persons for the implementation of effective tobacco cessation in their own clinical practice and within their respective departments. In total, we will train no less than 60 PTCCA's. The PTCCA's will participate in an initial two-day training program covering aspects of tobacco epidemiology, brief intervention, pharmacotherapy, motivational interviewing, appropriate referral systems and advocacy for tobacco control in hospital based settings. In total, there will be three training programs in each of the three states and trainees would be encouraged to join the Global Bridges network.

Monitoring and support of the PTCCA's using voice calls, SMS and internet based technologies over a six- month period: Over a period of six months, we will provide continuous updates of the key points of the training programme to the PTCCA's using innovative mobile, text and web-based mechanisms. We will send SMS reminders (one per week over a period of six months to them reminding them of the key action points emphasized at the two-day training. We will also send them refresher emails (at least one every two weeks over a six month period). The contents of the SMS and emails will be based on international guidelines for tobacco cessation treatment^{11,12} and reviewed by local and international experts (project advisors)

Specific roles and responsibilities of the PTCCA's: Prior to the commencement of the training workshop, all recruited PTCCA's will be required to complete a mandatory tobacco control online course for health practitioners (developed by the Institute for Global Tobacco Control of the Johns Hopkins Bloomberg School of Public Health).¹³ This will ensure their personal commitment to the project and their conversant use of internet based technology. It will also allow us spend less of the training time focusing on broader tobacco control issues leaving more room for a two-day concentrated effort to localized tobacco control issues and a focus on strategies for tobacco dependence treatment; In addition, PTCCA's will participate in the two-day tobacco dependence treatment training workshop; They will serve as focal persons for the promotion of tobacco cessation practice in their respective departments; carry out advocacy for

the prioritization of tobacco cessation to their departmental heads and other residents, interns and medical students; they will inform their colleagues of the nature of the PROJECT as well as their role as focal persons; they will provide the project secretariat with a list of all the physicians in their respective departments including phone numbers and email addresses; They will also submit monthly reports of their activities and participation in the project evaluation. All PTCCA's will be required to sign commitment forms ensuring their commitment towards the project. These forms must be counter-signed by their respective departmental heads.

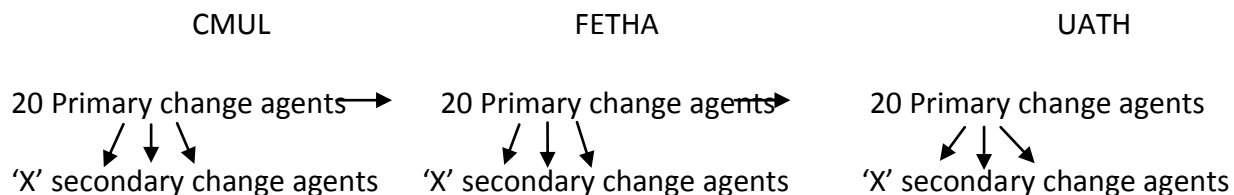
Working with the PTCCA's to reaching their departmental colleagues (secondary tobacco cessation change agents) using SMS and internet based technologies over a three-month period: We will obtain a list of departmental colleagues i.e. other residents and interns to generate a database of physicians. These will be our secondary tobacco cessation change agents (STCCA's), we will send SMS (one per week over a period of three months) to each contact on the list. We will also send emails (one every two weeks over a period of three months). The emails will be designed to inform them about the Ask, Advise and Refer (AAR) approach and also increase knowledge of tobacco dependence treatment methods i.e. the definitions and importance of the AAR approach including asking and documenting smoking status for all patients that they come across; guidelines for delivering brief intervention and sites for referral of smokers within their own hospital setting. It is expected that we will reach a minimum of 600 (possibly up to 1,200) physicians using this medium. The STCCA's will also receive SMS and email links encouraging them to join the global bridges network.

Identification and collaboration with tobacco cessation referral centres within each teaching hospital: The project will also identify and collaborate with one referral centre within each teaching hospital. Patients requiring referrals will be referred to these centres. We will encourage at least one physician practicing in this centre to join in the training programs.

Primary audience: The primary audience for this project are resident doctors in teaching hospital settings. There are over 50,000 registered physicians in Nigeria and a significant proportion of them work in teaching hospitals. Resident doctors are specialists-in-training and form the bulk of physicians in tertiary hospitals who are likely to be open to taking up new practices such as tobacco dependence treatment. These doctors have a basic medical degree but often have no specialized tobacco cessation training. They spend a considerable amount of time with patients and also spend time teaching medical students and interns. We will train at least 60 PTCCA in the three institutions with a collective population size of about 1200 physicians in the three hospitals.

Our secondary target audience: These are the colleagues of the PTCCA's in their respective departments. Their details will be collected from the PTCCA's and based on this, a database of these physicians will be created. i.e. the secondary TCCA's. We will communicate with them using SMS and the internet.

The beneficiaries of the project outcomes include the PTCCA's, (each PTCCA will receive a certificate of participation in the program); their colleagues (STCCA's); the management of the respective teaching hospitals; tobacco-using patients who attend these hospitals and the population of Nigeria through a potential reduction in exposure to second hand smoke.



Evaluation Design:

To determine if our project achieves its objectives, we will collect data using the following indicators:

Output indicators: Number of PTCCA's who start and remain in the program over the 6-month period; Knowledge and self-efficacy/confidence scores of brief intervention, pharmacotherapy and motivational interviewing techniques at baseline & 6 months evaluation in the intervention and control sites; Number of physicians who received our tobacco cessation SMS and emails; Proportion of physicians who (were motivated to) either ask, advice or refer patients based on SMS and/or emails received; Proportion of hospital patient case-notes with appropriate documentation of the tobacco status and brief intervention(if applicable) at baseline and 6 months follow up at intervention and control sites; Number of hospital patients referred to referral clinics in the 6-month period; Number of referred patients who actually visited the referral clinics within the study period.

Sources of data: Pre and post intervention surveys for the PTCCA's; Online baseline and follow up surveys for the STCCA's to assess the effectiveness of the SMS and internet based approaches for the AAR techniques"; Information from patient's case notes (both in patient and out-patients); patient records at referral centres.

Data collection techniques: 1. *At the training workshop:* The questionnaires for the PTCCA's pre- and post-training will be paper-based and self-administered; 2. *Online surveys:* Follow-up data from the PTCCA & baseline and follow up data from STCCA's will be collected using online data collection software i.e. Survey monkey®. To increase response rates for the online surveys, each respondent will receive at least three reminders by voice calls; 3. *Information from patient case-notes:* We will train research assistants to collect information from patient case notes using a simple checklist. Three comparable control sites (Lagos state University teaching hospital, Ikeja, University of Nigeria teaching hospital and the National hospital Abuja) will be identified and similar information will be obtained from the case notes at these sites using the same methodology. The co-investigators in each state will be responsible for the coordination of data collection in control sites.

Data analysis: Epi-info (2008) and SPSS 17.0 statistical softwares will be used for data entry and analysis. Knowledge and self-efficacy/confidence scores pre- and post-intervention at baseline

and control sites will be computed and the student's t-test for unequal variances will be used to test for significant differences between groups. Similarly, Chi-square and Fisher's exact tests will be used for comparison of proportions between groups. The level of significance will be set at 0.05.

Ethical approvals: will be obtained from the Research and Ethics Committee of the College of Medicine, University of Lagos, Idi-Araba (IRB number 00004041) and also from each intervention teaching hospital. Confidentiality of all information obtained will be assured.

Quantify the amount of change expected from this intervention in terms of your target: We expect that this project will result in a 30-50% increase (above baseline) in knowledge and self efficacy/confidence scores of the tobacco dependence treatment strategies among the PTCCA's; 30-50% (above baseline) increase in number of physicians who ask and document tobacco status in case-notes as evidenced by data obtained from patient case notes; 30-50% increase (above baseline) in number of physicians who offer and document brief cessation advice in case notes; 50-70% increase (above baseline) in patient referrals to referral centres; 20-30% increase in number of patients who actually visit the referral centres.

Indicate how you will determine if the target audience was fully engaged in the intervention.

- Weekly voice calls to inquire about progress and challenges from the PTCCA's
- Voice call reminders to ensure adequate response to online evaluation surveys
- Monthly reports from the PTCCA's based on the implementation of their project assigned roles and responsibilities.
- Preliminary analysis of data obtained from the PTCCA and STCCA from the online surveys
- Preliminary analyses of information on patient referrals from referral sites.

Detailed Work plan and Deliverables Schedule:

The project will run over a period of 12 months. Upon identifying and recruiting physicians (PTCCA's) from relevant departments in the three health institutions, we will have an initial 2-day training. Over a period of six months, we will regularly engage them and support them using voice calls, SMS and the internet to achieve the stated PTCCA roles for the project. In addition, we will generate from them, a database of the names of their colleagues (secondary TCCAs) and use SMS and the internet to promote the AAR approach among them. Monitoring and evaluation of the activities of the primary TCCAs will be conducted at 3 and 6 months respectively, a quantitative evaluation to determine the relevance of the SMS prompts and emails received in the preceding months will be conducted among the primary and secondary TCCAs at 6 months follow up. Baseline and follow-up reviews of patients' case notes will be carried out in the intervention and control sites to assess the effect of the intervention. Data will then be collated, analyzed and published in peer-reviewed journals and on the global bridges website.

Deliverables /Schedule	2014			2015			
	JUL-AUG	SEPT-OCT	NOV-DEC	JAN-MAR	APR-JUN		
Project planning, identification and recruitment of TCCA's and ethical approvals							
Baseline data collection							
Initial 2-day training of PTCCAs							
Support and Monitoring of PTCCA activities							
Intervention for STCCA's							
Monitoring and evaluation of activities of PTCCA and STCCA's							
Report writing and publications							

Dissemination plan: Locally, project outcomes will be disseminated in the local newsletters of each collaborating institution; Brief reports will be sent to the media for dissemination. Globally, reports will be published on the global bridges website. Scientific papers will be presented at international academic conferences and published in peer-reviewed journals.

Project staff and roles: Oluwakemi Odukoya is the lead researcher and principal investigator (PI) for the project. She will be assisted by three co-investigators, one in each intervention site. Each co-investigator is domiciled in the state where the intervention will take place and will bear the responsibility for ensuring the smooth running of the project in his/her state. The project officer will be domiciled in Lagos and will be responsible for all the administrative and logistics aspects of the project. There are four project advisors; Prof. AT Onajole, the head of department of Community Health & Primary Care, (DCHPC) LUTH, Dr. Kofo Odeyemi, an associate professor of the DCHPC, LUTH; Prof Lekan Ayo- Yusuf, tobacco control expert and professor at the University of Limpopo MEDUNSA campus, Pretoria, South Africa and Dr. Babalola Faseru, an assistant professor in the department of preventive medicine and public health at the University of Kansas Medical Center, Kansas, U.S.A. The content of the training and other aspects of the intervention will be developed in conjunction with these four advisors and pre-tested before use.

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