TB and Tobacco

Tobacco cessation within TB programmes: A 'real world' solution for countries with dual burden of disease.

Grant Agreement no. 680995

Collaborative Project
EU H2020 Programme
Health
Medical Research and the Challenge of Ageing

Project duration: 1st November 2015 to 31st October 2019 (48 months)

Deliverable 5.1 "Delivery Factors Report"

Authors: Iveta Nohavova, Eva Králíková, Kamila Zvolská
(Všeobecná Fakultní Nemocnice v Praze; VFN v Praze)

Workpackage: WP5
Workpackage Leader: Eva Králíková

Due date: 31st October 2016 (Project month 12)
Actual submission date: 31st October 2016

Dissemination Level: PU (Public)
Revision: 1.0

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme, under Grant Agreement number 680995.
The European Commission is not responsible for any of the content of this document.

CONTENTS **page**

ABBREVIATIONS NOT DEFINED IN THE TEXT

COM-B	**Capability, Opportunity and Motivation (Behaviour system)**
DOTS	**Directly Observed Treatment, Short-course**
FCTC	**(WHO) Framework Convention on Tobacco Control**
HIV	**Human Immunodeficiency Virus**
SES	**Socio-Economic Status**
SMS	**Short Message Service**
TB	**Tuberculosis**
WHO	**World Health Organisation**

WP 5 Report on Deliverable D5. 1

Work package: Context Evaluation (Work Package 5, WP5)
Objective of WP5: To identify key contextual issues that may influence the delivery of tobacco cessation interventions.

Deliverable 5.1
Title: An inventory of factors (barriers and facilitators) which are likely to be influential in the delivery of tobacco cessation within TB programme contexts.
Authors: Eva Králíková, Iveta Nohavova, Kamila Zvolská
Report Due: October 31, 2016 (Project month 12).

I. Introduction

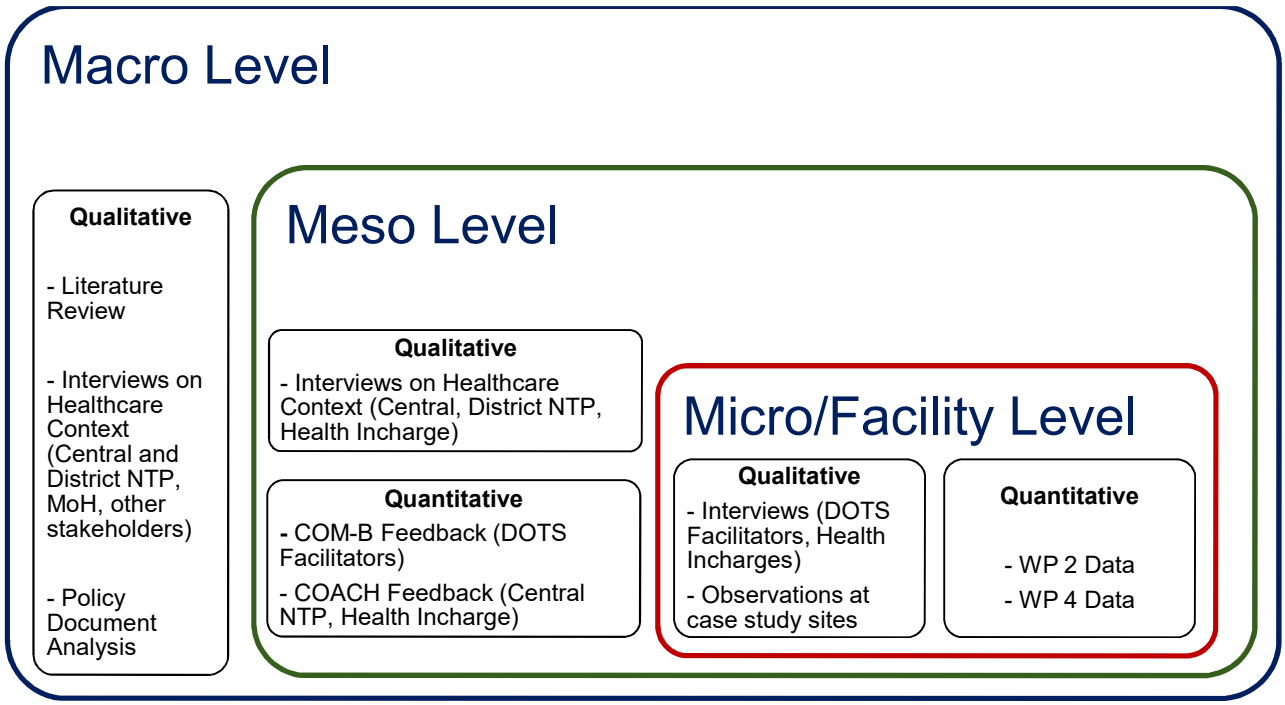
This deliverable report summarizes the first year (of the broader four-year) WP5 project work on context evaluation, as part of the TB & Tobacco study. The overall aim of the context evaluation is to understand the influence of factors, both barriers and facilitators, beyond the control of healthcare professionals, the intervention, and the patients, that could potentially influence the outcomes of the clinical trial framed by TB & Tobacco. Given the emphasis of this study, WP5 has focused on internal and external factors influencing healthcare organizations related to TB programmes and their functions, within the contexts of Bangladesh, Nepal and Pakistan; with the following objectives:

- Obj. (g) (from Description of Action) To identify contextual factors that positively or negatively influence the delivery of tobacco cessation strategies;
- Obj. (l) To assess which of the contextual factors identified in objective (g) are associated with the effect of tobacco cessation strategies; and
- Obj. (p) To assess whether contextual factors identified in objective (g) and found influential in objective (l) change over time.

The first year of WP5 work has focused solely on meeting objective (g): identification of contextual factors that positively or negatively influence the delivery of tobacco cessation strategies. To fulfill this objective, researchers conducted (i) a literature review of barriers and facilitators of delivering healthcare to TB patients in low- and low middle-income countries, (ii) semi-structured interviews (SSIs) with healthcare professionals and managers within TB programmes in the three project countries, and (iii) individual country policy reviews in those countries. The findings on barriers and facilitators under objective (g) will form the basis of on-going data collection and analysis over the following years of the project, leading to the fulfillment of objectives (l) and (p).
The findings are described in this report, to fulfill the requirements of Deliverable 5.1.

II. Methods

Three different activities were undertaken to identify the organizational capacity and context for delivering tobacco cessation strategies within TB programmes at the level of the state (macro), institutions (meso), and health professionals/patients (micro). The diagram bellow illustrates sources of data for information at the different levels.



Literature search

Keywords limited to identification of barriers to tobacco dependence treatment of TB patients in low-income countries in databases Embase, Medline, EBSCO, PubMed, and Web of Science were searched on 16th June 2016, for the time period from January 2005 to March 2016, with restriction to English language. Due to insufficient findings on tobacco cessation in TB context in low/middle income countries (LMICs), the search was then widened in the PubMed database on underserved populations, regardless of a country's geographical and economic classifications. The following keywords were searched: „barriers to treatment", „implementation research", „smoking cessation", „tuberculosis program/programme", „low/middle -income countries" „low socioeconomic status", „SES". Studies from low-income countries or specific populations at risk in middle and high-income countries were included. The main conclusion of our literature search was that there is an absence of relevant literature concerning smoking cessation and TB in the LMICs, but some research in the otherwise underserved population exists and will offer us valuable insights.
Similar work, (a scoping literature review), conducted at the University of York in early 2016, reached the same conclusion.

Semi structured interviews (SSIs)

A total of 25 SSIs were conducted across all three countries, in conjunction with the WP1 qualitative data collection. SSIs were conducted with representatives at the central level of the National TB programmes (NTP) in each country, the Ministry of Health (MoH), district level NTP staff, and Health In-charges and DOTS Facilitators at clinical sites. Interviews were conducted at the interviewee's work place or other location convenient to the interviewee, and lasted between 45-60 minutes.

During the SSIs, questions were asked about using pre-developed interview guides. Questions were asked about the priorities for the National TB programme in each country and tobacco control in the wider context. Questions were also asked about which, if any, existing policies and programmes would include an element of tobacco cessation (TC), or what future plans there would be for tobacco cessation, in terms of policy making and implementation. Also, questions were asked about obstacles/challenges that might be encountered within the health system to implement TC within TB programmes, and whether there are financial resources for TC available, or if DOTS facilitators/health professionals would need any additional skills to deliver tobacco cessation.

All interviews were audio recorded, transcribed and translated into English. Transcripts were organised electronically and analysed using NVivo, (qualitative data analysis software). Analysis was conducted using a coding framework, developed in conjunction with WP1. The coding framework included codes on context, such as challenges and opportunities in implementing tobacco cessation, myths and social perceptions about tuberculosis and tobacco, resources available (to health workers), and patient tobacco use.

In consultation with local national partners, during the SSIs the COACH - Context Questionnaire (COntext Assessment for Community Health) was pre-tested for feasibility and relevance in all three countries. (1) This questionnaire, mapping the institution and health professional (meso/micro) level, will be administered to the doctor In-charge in each of the ten sites in each country during the trial. The COACH tool is a quantitative measure that provides an overview of organizational resources, community engagement/monitoring, sources of knowledge, commitment to work, work culture, leadership, and informal payment.

Policy document review

In conjunction with WP1 and the local national partners, a review was undertaken of all available policy and programme documents of the National TB Programmes (NTPs) and Ministries of Health and relevant international and local organizations working on tobacco cessation. This review focused on national commitment (policy and resources) for tobacco cessation and the relevant organizations and donors working in this area within each country. Different types of documents were identified. The main sources for this review were (i) available published literature, (ii) national TB health programs and national health plans, and (iii) existing laws and policies. From these compiled documents, individual country summary reports were developed.

Preliminary Fieldwork

A WP5 researcher conducted preliminary fieldwork in Bangladesh and Nepal alongside WP1 data collection, with the aim of collecting contextual information. The WP5 researcher took the opportunity to attend several meetings to conduct the audio recorded SSIs. Detailed field notes were also taken, supported by photographs and observation of facilities. The researcher compiled and organized these different forms of data, in order to develop an understanding of the local context and to contribute to developing a framework for WP5 analysis during the remaining years of the project.

Developing analytical framework for data analysis

The Consolidated Framework on Implementation Research Constructs (CFIR) tool was suggested by a TB & Tobacco project member for its likely applicability to context analysis. The CFIR consists of 39 constructs which are related to effective intervention implementation. There are five main sections: intervention characteristics, outer settings, inner settings, characteristics of individuals, and process. (2)

Two researchers (one from WP1, one from WP5) tested the feasibility of the CFIR tool for contextual analysis, using one WP1 interview transcript. One researcher used an inductive approach to code the transcript and other one used a deductive approach for coding. The two coded transcripts were then compared, while deductive codes were matched with the codes applied, using the CFIR coding framework. Where codes were not found that could be matched, additional codes were added as the “emerging codes” to the CFIR. Those were (i) reporting, (ii) monitoring, and (iii) organization priority. The resulting framework with the emerging codes for WP5 is now being discussed with WP4 partners for its applicability for the future qualitative analysis of WP4 data. It is anticipated that this tool will be ready for use by December 2016.

III. Findings

Literature Search Results

The initial and the subsequent widened literature search was completed under the supervision of the literature search department of the Institute of Scientific Information of the First Faculty of Medicine, Charles University in Prague http://uvi.lf1.cuni.cz/en/. As mentioned above, the widened search based on the keywords described on page 2 yielded some useful information, after all. The following databases were used: Embase, Medline, EBSCO, PubMed, and Web of Science. A total number of 72 eligible articles were identified, from which only 27 articles (37.5%) were deemed relevant for context analysis.

In addition to known barriers often found in low SES populations (e.g. lack of information, lack of motivation, high stress level), there are barriers specific for the three study countries (e.g. accessibility to treatment, no treatment available, lack of information about the health impact of tobacco use, or community/peer pressure), as described in more detail below.

Implementation of tobacco dependence treatment programs for tobacco treatment providers according to the requirements of WHO (the recommendations of FCTC Article 14 or the FCTC Article 14 guidelines) are less frequent in low- and middle-income countries (LMICs). (3)

LMICs have less tobacco dependence treatment provision than high-income countries, and lower availability of basic treatment infrastructure and national cessation support systems, including national treatment guidelines. (4) Tobacco cessation interventions for LMICs require understanding of diverse tobacco products, development of low-cost cessation interventions, integration of tobacco cessation into health systems, and understanding of tobacco use behaviours across different contexts. (5)

Integrating community health workers as members of the health care team improves access to preventive services and thus increases adherence to tobacco use treatment guidelines and provides better help to smokers. (6, 7)

Many community health workers in LMICs felt that a barrier to routinely offering cessation services is that this is not one of the national prevention priorities. Lack of training and time constraints are also frequently cited barriers. The suggestion is to extend the treatment of tobacco use beyond primary care settings and to increase access to smoking cessation services. (8)

There are common personal factors considered as barriers to smoking cessation, including smoking for stress management, lack of support from health and other service providers, the high prevalence and acceptability of smoking in vulnerable communities, perceiving it to be too difficult, lack of patient interest in smoking cessation, pressure from cigarette sharing and gifting customs. Financial costs, social support, and social influence are also important barriers. Other personal factors are unique to six selected vulnerable groups: 1.low socioeconomic status; 2.indigenous (e.g. cultural and historical norms); 3.mental illness (e.g. maintenance of mental health) and substance abuse; 4.homelessness (e.g. competing priorities); 5. prisoners (e.g. living conditions); and 6. at-risk youth (e.g. high accessibility of tobacco). (9, 10,11)

Barriers specific to TB patients could include; lack of true understanding of the harm of smoking and second-hand smoking; lack of access to and knowledge of effective smoking cessation; lack of awareness of smokers about pharmacotherapy. Tobacco dependence treatment should be a part of the national health insurance programs of LMICs. (12, 13)

Studies on specific populations at risk in middle and high-income countries imply (suggest) that some recommendations may also find a place in culturally diverse LMICs. Despite comprehensive tobacco policies targeting e.g. indigenous populations in high-income countries, there could be an ‘implementation gap’ for remote indigenous communities. (14)

The quitting success rate among TB patients is positively associated with TB-specific quit smoking messages delivered in TB clinics or at home by family members trained to be DOTS supporters. There was no statistically significant difference between the results of family and non-family community DOT. (15, 16)

Although the evidence that second hand smoking exposure may increase the risk of acquiring TB infection and progression to TB disease is scarce and weak, passive smoking should be included in tobacco control in national TB programs. (17, 18)

Psychological distress is the major comorbidity among TB patients that increases the risk of treatment nonadherence. Although current smoking history did not persist in predicting psychological distress significantly, smoking is a risk factor for psychiatric disorders and treatment of tobacco dependence improves depressive symptoms. (19, 20, 21)

TB is a socioeconomic as well as an infectious disease problem. Despite free TB care, having TB was expensive for impoverished TB patients. Adverse TB outcomes were associated with incurring higher relative costs and lower household income, mainly in patients with multi-drug-resistant TB. Prevalence of smoking is higher among the poor, as well as among illiterate people. Thus tobacco use and poverty have become linked in a vicious circle. (22, 23, 24)

Few studies have examined the perceptions and attitudes of tuberculosis patients towards using SMS technology to increase treatment adherence. SMS technology has been shown to be an efficient way to transmit motivational texts on treatment, health education information, and simple reminders to increase treatment adherence for low-income TB patients (e.g. in Peru). Evidence for the efficacy of text messaging interventions to reduce smoking behaviour, to support quitting behaviour, and ultimately to achieve long-term smoking abstinence is well established. (25, 26)

For the tobacco control programmes to be effective, they should include training and incentives for staff to implement smoke-free policies and cessation services. (27)

Macro Level findings

From the country policy review completed within WP1 (which also informs this part of WP5), we found that little is mentioned in national policies in the three countries about the linkage between TB and tobacco use. Significant emphasis is placed in these documents on Multi-Drug Resistant TB (MDR) and the connection of TB to HIV. Across all three countries, however there is no mention of TB and the need to address the tobacco use epidemic. An opportunity might exist in Bangladesh, since collaboration on TB and HIV already exists; this could provide the potential to adapt a TB/Smoking collaboration, using a similar framework.
With regard to tobacco control, most work to-date seems to have been done in Nepal, where anti-tobacco awareness campaigns and co-curricular activities have been conducted. However, there is a policy gap in terms of lack of training and lack of information provided about the harmful effects of tobacco. It is anticipated that possible suggestions for solutions on TC integration into regular health care will be confirmed by our analysis (e.g. during an interview with the central level NTP in Pakistan, one suggested opportunity might be to work with the cardiac health projects focusing on tobacco cessation and introduce connections to TB programmes.)

Meso/Micro Level Findings

Although the start of data collection for WP5 (done in conjunction with WP1) was delayed, collection was completed by the end of August 2016. Given project timelines, analysis for the development of the behavioural support (BS, under WP1) materials was prioritized and the qualitative data analysis for WP5 was begun in October 2016 and is on-going. We anticipate the national country partners will have this analysis completed by the end of December 2016. Again, the qualitative analysis will be done using NVivo and a thematic framework will be

developed, based on the COACH questionnaire as well as CFIR (as mentioned in detail above).
Even though analysis has not yet been completed (as was originally anticipated in the TB & Tobacco project plan), the fieldwork observations and the SSI analysis have revealed several issues which will need to be explored in detail in the analysis. Frequent issues mentioned by the health care providers during the fieldwork and the SSIs concerned high patient burden, lack of monitoring and supervision, lack of resources and lack of training.

IV. Timeline

December - June 2016: Literature review (barriers & facilitators)
April-May 2016: Developing additional questions for context-related data collection; collecting country specific policy documents
June-August 2016: Qualitative data collection through SSIs (Bangladesh, Nepal, Pakistan, 25 in total)
July-August 2016: Country policy document analysis
September-December 2016: Qualitative data analysis by local country partners
October 2016: Deliverable 5.1 Report completed.

Flowchart (diagram)

V. Final Remarks

The factors likely to be influential in the delivery of tobacco cessation within TB programme contexts have been explored and identified, in accordance with the requirements of Deliverable 5.1.
In the beginning, we anticipated that the literature search would yield proven evidence on the barriers and facilitators existing in low and low-middle income countries in relation to implementing tobacco treatment within a TB care context. However, the literature review yielded only limited published works that could be used to map this problem. In order to better understand the situation and the context in question, we decided to review the tobacco

cessation and treatment context in underserved populations, regardless of the country's geographical and economical classifications.

There is a dearth of literature on carrying out a contextual analysis for large healthcare systems, especially with regard to tobacco cessation and opportunities for development. This will be an important focus over the next two years to develop best practices for conducting this kind of analysis and research.

The literature review, the completed policy review and the qualitative data analysis from SSIs will provide us with an established process of contextual mapping and analysis for the purpose of tobacco cessation intervention implementation within TB programmes. The general issues have been highlighted at the three levels. Over the next two years these will be explored further, using several data collections.

VI. References

1. Bergström A, Skeen S, Duc DM, Blandon EZ, Estabrooks C, Gustavsson P, Hoa DT, Källestål C, Målqvist M, Nga NT, Persson LÅ, Pervin J, Peterson S, Rahman A,Selling K, Squires JE, Tomlinson M, Waiswa P, Wallin L. Health system context and implementation of evidence-based practices-development and validation of the Context Assessment for Community Health (COACH) tool for low- and middle-income settings. Implement Sci. 2015 Aug 15;10:120.
2. Damschroder, L.J., Aron, D.C., Keith, R.E., Kirsh, S.R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. Implement Sci, 4(1), 50.
3. Rigotti NA, Bitton A, Richards AE, Reyen M, Wassum K, Raw M. An international survey of training programs for treating tobacco dependence. Addiction. 2009. 104 (2) (pp 288-296).
4. Piné-Abata H, McNeill A, Murray R, Bitton A, Rigotti N, Raw M. A survey of tobacco dependence treatment services in 121 countries. Addiction. 2013. Aug;108(8):1476-84.
5. Parascandola, M, Bloch, M. The Global Laboratory of Tobacco Control: Research to Advance Tobacco Cessation in LMICs. Journal of Smoking Cessation. 2016. Vol. 11 Issue 2, p70-77.
6. Shelley D, VanDevanter N, Cleland CC, Nguyen L, Nguyen N. Implementing tobacco use treatment guidelines in community health centers in Vietnam. Implement Sci. 2015. Oct 9;10:142.
7. McRobbie, H, Raw, M, Chan, S. Research Priorities for Article 14—Demand Reduction Measures Concerning Tobacco Dependence and Cessation. Nicotine & Tobacco Research. 2013, Vol. 15 Issue 4, p805-816.
8. Shelley D, Nguyen L, Pham H, VanDevanter N, Nguyen N. Barriers and facilitators to expanding the role of community health workers to include smoking cessation services in Vietnam: a qualitative analysis. BMC Health Services Research. 2014, Vol. 14 Issue 1, p606-613.
9. Twyman L, Bonevski B, Paul C, Bryant J. Perceived barriers to smoking cessation in selected vulnerable groups: a systematic review of the qualitative and quantitative literature. BMJ Open. 2014 Dec 22;4(12):e006414.
10. Rosenthal L, Carroll-Scott A, Earnshaw VA, Sackey N, O'Malley SS, Santilli A, Ickovics JR. Targeting cessation: understanding barriers and motivations to quitting among urban adult daily tobacco smokers. Addict Behav. 2013 Mar;38(3):1639-42.

11. Brown CH, Medoff D, Dickerson FB, Fang LJ, Lucksted A, Goldberg RW et al. Factors influencing implementation of smoking cessation treatment within community mental health centers. J Dual Diagn. 2015;11(2):145-50.
12. Agaku IT, Ayo-Yusuf OA. A global assessment of knowledge of dental students about nicotine replacement therapy: findings from 43 countries. Eur J Dent Educ. 2014 Aug;18(3):154-61.
13. Cai J, Wang X, Ma A, Wang Q, Han X, Li Y. Factors associated with patient and provider delays for tuberculosis diagnosis and treatment in Asia: a systematic review and meta-analysis. PLoS One. 2015 Mar 25;10(3):e0120088.
14. Robertson JA, Conigrave KM, Ivers R, Usher K, Clough AR. Translation of tobacco policy into practice in disadvantaged and marginalized subpopulations: a study of challenges and opportunities in remote Australian Indigenous communities. Health Res Policy Syst. 2012 Jul 28;10:23.
15. Nichter M, Padmawati S, Ng N. Introducing smoking cessation to Indonesian males treated for tuberculosis: The challenges of low-moderate level smoking. Soc Sci Med. 2016 Mar;152:70-9.
16. Tian JH, Lu ZX, Bachmann MO, Song FJ. Effectiveness of directly observed treatment of tuberculosis: a systematic review of controlled studies. Int J Tuberc Lung Dis. 2014 Sep;18(9):1092-8.
17. Dogar OF, Pillai N, Safdar N, Shah SK, Zahid R, Siddiqi K. Second-hand smoke and the risk of tuberculosis: a systematic review and a meta-analysis. Epidemiol Infect. 2015 Nov;143(15):3158-72.
18. Leung CC, Lam TH, Ho KS, Yew WW, Tam CM, Chan WM et al. Passive smoking and tuberculosis. Arch Intern Med. 2010 Feb 8;170(3):287-92.
19. Tola HH, Shojaeizadeh D, Garmaroudi G, Tol A, Yekaninejad MS, Ejeta LT et al. Psychological distress and its effect on tuberculosis treatment outcomes in Ethiopia. Glob Health Action. 2015 Nov 24;8:29019.
20. Pasco JA, Williams LJ, Jacka FN, Ng F, Henry MJ, Nicholson GC et al. Tobacco smoking as a risk factor for major depressive disorder: population-based study. Br J Psychiatry. 2008 Oct;193(4):322-6.
21. Stepankova, L, Kralikova, E, Zvolska, K, Pankova, A, Ovesna, P, Blaha, M, Brose, LS. Changes in depression levels after one-year abstinence from smoking. Poster at SRNT Europe 2016, 17th annual conference, 8-10 September 2015, Prague, Czech Republic
22. Wingfield T, Boccia D, Tovar M, Gavino A, Zevallos K, Montoya R et al. Defining catastrophic costs and comparing their importance for adverse tuberculosis outcome with multi-drug resistance: a prospective cohort study, Peru. PLoS Med. 2014 Jul 15;11(7):e1001675.
23. Djibuti M, Mirvelashvili E, Makharashvili N, Magee MJ. Household income and poor treatment outcome among patients with tuberculosis in Georgia: a cohort study. BMC Public Health. 2014 Jan 29;14:88.
24. WHO. Tobacco Free Initiative. Poverty. http://www.who.int/tobacco/research/economics/rationale/poverty/en/
25. Albino S, Tabb KM, Requena D, Egoavil M, Pineros-Leano MF, Zunt JR et al. Perceptions and acceptability of short message services technology to improve treatment adherence amongst tuberculosis patients in Peru: a Focus Group Study. PLoS One. 2014 May 14;9(5):e95770.

26. Scott-Sheldon LA, Lantini R, Jennings EG, Thind H, Rosen RK, Salmoirago-Blotcher E et al. Text Messaging-Based Interventions for Smoking Cessation: A Systematic Review and Meta-Analysis. JMIR Mhealth Uhealth. 2016 May 20;4(2):e49.
27. Vijayaraghavan M, Hurst S, Pierce JP et al. Implementing Tobacco Control Programs in Homeless Shelters: A Mixed-Methods Study. Health Promot Pract. 2015 Dec 17.