System level approaches for mainstreaming tobacco control into existing health programs in India: Perspectives from the field

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Abstract

Introduction: India is the second largest consumer of tobacco in the world, and varieties of both smoked and smokeless tobacco products are widely available. The national program for tobacco control is run like a vertical stand-alone program. There is a lack of understanding of existing opportunities and barriers within the health programs that influence the integration of tobacco control messages into them. The present formative research identifies such opportunities and barriers. **Methods:** We conducted a multi-step, mixed methodological study of primary care personnel and policy-makers in two Indian states of Andhra Pradesh and Gujarat. The primary purpose of our study was to investigate health worker and policy-maker perceptions on the integration of tobacco control intervention. We systematically collected data in three steps: In Step I, we conducted in-depth interviews (IDIs) and focus group discussions with primary care health personnel, Step II consists of a quantitative survey among health care providers (n = 1457) to test knowledge, attitudes and practices in tobacco control and Step III we conducted 75 IDIs with program heads and policy-makers to evaluate the relative congruence of their views on integration of the tobacco control program. **Results:** Majority of the health care providers recognized tobacco use as a major health problem. There was a general consensus for the need of training for effective dissemination of information from health care providers to patients. Almost 92% of the respondents opined that integration of tobacco control with other health programs will be highly effective to downscale the tobacco epidemic. **Conclusions:** Our findings suggest the need for integration of tobacco control program into existing health programs. Integration of tobacco control strategies into the health care system within primary and secondary care will be more effective and counseling for tobacco cessation should be available for population at large.

Keywords: Health care providers, health systems, integration, program managers, tobacco

Introduction

India is the second largest consumer of tobacco in the world after China.[1] Recent estimates indicate that 10% of tobacco consumers globally reside in India.[2,3] Tobacco in India is used in myriad forms.[4,5] India enacted a comprehensive national legislation for tobacco control and was one of the early large countries in signing and ratifying the WHO framework convention on tobacco control (FCTC) in 2003.[6] However, until now its enforcement has been ineffective at the state-level.[7] In an effort to catalyze FCTC, the National Tobacco Control Program (NTCP) was launched in 2007–2008 to enforce tobacco control laws and along with other components, create awareness about the harmful effects of tobacco use.[7] In its current state, NTCP resembles a vertical stand-alone program with no convergence mechanism with other existing state

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health programs.[8] This vertical approach to tobacco control poses serious concerns due to a number of reasons such as limited capacity in state-level agencies, poor engagement of civil society organizations, low level of community mobilization, and problems with coordination among multiple stakeholders.[9]

Epidemiological projections indicate tobacco prevalence globally will continue to grow at alarming rates if prevention programs are not intensified.[10] This is especially so in countries like India where the problem is complex due to myriad varieties of tobacco and stakeholders involved.[11] Tobacco control is a complex issue in India, and its prevention will only be possible if efforts engage stakeholders at the macro-, meso-, and micro-level.[12] The macro-level requires attention to the global and Indian corporations that sell tobacco in India, and the populations that they target for retail. The meso-level requires an understanding of how national tobacco control policies are constructed and how they are enacted at the state-level. The micro-level change often is the most difficult to implement which is to enact behavior change. Understanding how various dimensions of tobacco control are defined and enacted within and between the macro-, meso-, and micro-levels is critical for successful tobacco control programs.[13]

Methods

This study was conducted in 12 districts of two states of India, Gujarat, and Andhra Pradesh. The study examines varied perspectives of different stakeholders within the health department and considers views on what should be done for strengthening system level approaches for tobacco control integration. We examine how integration is understood and enacted through policy-makers and health service delivery points in these two states. The first level was at the administrative and bureaucratic (e.g., program managers and policy-makers) level. The second level was at the health service delivery level (e.g., medical officers, pharmacists, nurses, midwives, and accredited social health activists [ASHAs]).

Study design and area

We conducted a multi-step, mixed methodological study of primary care personnel and district-level program heads and policy-makers in two Indian states of Andhra Pradesh and Gujarat. We systematically collected data in three steps. The findings of Step I guided the designing and development of the survey tools for Step II. In Step I, we conducted in-depth interviews (IDIs) and focus group discussions (FGDs) with primary care health personnel, including medical officers and specialists, laboratory technicians, and pharmacists, ASHAs, auxiliary nurse midwives (ANMs) and nurses. Based on the data from Step I, we developed a survey for Step II to test baseline knowledge, attitudes, and practices around tobacco control and administered it to 1457 primary care health personnel (MO - 238, Lab technicians and pharmacists - 137; ANMs and nurses - 1082), which were different from respondents approached in Step I. The health personnel at public health facilities are a first port of

call to the sick and those who directly report or are referred for preventive, promotive, and curative health care. In Step III, we conducted 75 IDIs with program heads and policy-makers to evaluate the relative congruence of their views on the integration of the tobacco control program.

Health personnel were approached by a research consultant and invited to participate in an (IDIs), FGDs and survey. The IDIs, FGDs, and surveys were conducted in local language and English. These data were collected from six districts of Andhra Pradesh and Gujarat. These districts were selected based on recommendations of the respective state governments and were the districts where the NTCP has not been rolled out.

Sampling method

Public health facilities providing primary care were identified through systematic random sampling. All the health facilities providing primary care in the district were listed. The first health facility was selected at random and then every fifth health facility was selected for inclusion in the sample. Health care providers were recruited by simple random sampling in Step II. Purposive sampling technique was used to recruit the study respondents in Steps I and III. A snowballing approach was also used to support recruitment. IDIs were conducted until saturation was achieved and until patterns were captured related to study objectives.

Study period

The study was conducted from March to June 2011. The ethical clearance was obtained from Institutional Ethical Committee (IEC no 65/60).

Step I
Data collection

A total of 59 IDIs and nine FGDs were conducted in two districts and five blocks of Gujarat and Andhra Pradesh. IDIs were conducted with medical officers and district-level officials. FGDs were conducted among ANMs and Directly Observed Treatment, Short-course providers. Data gathered was elaborated through field notes, recorded tapes, and reviewing transcripts of the interviews. The transcripts were translated to English for analysis. Content analysis was done by coding dialog around themes specific to integration of the tobacco control program. The survey included (a) background characteristics, (b) practices in tobacco cessation, (c) knowledge of health care providers on health effects of tobacco and tobacco cessation interventions, (d) and attitude toward tobacco cessation.

Analysis

We used a deductive strategy to analyze the qualitative data could help us formulate a targeted survey that addressed core issues facing health personnel working at the community level health centers.

Step II
Data collection

We interviewed health personnel at two community health centers (CHCs), 10 primary health cares (PHCs), and 24 h Sub-

centers in each district. Consent procedure was the same as Step I. We interviewed 744 health personnel in Andhra Pradesh and 713 in Gujarat (total n = 1457). Survey was conducted from January to March of 2011.

Analysis

Three separate questionnaires were developed for the three respondent categories: Medical officers and specialists; ASHAs, ANMs, and nurses; and pharmacists and laboratory technicians. The questionnaires were translated and back-translated from English into the local language and pilot tested. Descriptive statistical analyses were conducted for all relevant variables and $P \leq 0.05$ were accepted to be statistically significant.

Step III
Data collection

Recruitment and IDI administration were conducted in the same six districts as the first two steps in Andhra Pradesh and Gujarat. The total sample size of interviews conducted in Andhra Pradesh was 40 and in Gujarat was 35, including seven district officials from each study district, (total n = 75). Health personnel at the district-level were approached and invited to participate in an IDI that addressed the following themes: Knowledge about tobacco use and related practices; attitudes toward roles of health services personnel and training needs; and perceptions of barriers and facilitators to implementation of the NTCP. The qualitative interviews were transcribed to English from local language as some of them had not been conducted in English.

Qualitative analysis

We systematically analyzed the qualitative content presented in these interviews according to themes developed by investigators; however, data analysis also revealed potential new themes and findings. Two coders evaluated the transcripts and found high inter-coder inter-reliability in their evaluation of these themes. Representative quotes corresponding to these key questions are presented to represent major findings.

Triangulation of the data

Three steps of data were triangulated. The data presented here focus specifically on views around the integration of the tobacco control program at the following two levels of the health system. On one hand, we present perceptions of tobacco control put forth by doctors, nurses, ANMs, and ASHAs working at the field level and discuss similarities and differences between them.

Viewpoints from program heads and policy-makers of various health programs at the district-level were also presented.

Table 1 describes the profile of the people interviewed in Step II of the study. All ANMs, ASHAs, and nurses were female. The majority of respondents were <40 years of age (ranging from 61% of pharmacists to 97% of ASHAs); and serving in rural areas (ranging from 55% of nurses to 97% of medical officers and specialists and ANMs).

Results

Step I: Qualitative perspectives from primary care providers

The need for tobacco control integration at the primary care level was evident from in-depth exploratory interviews with primary care providers (PCPs). The fact that tobacco is so easily available and that so many primary care patients use tobacco products makes integration of tobacco all the more challenging as well as important for PCPs. PHC practitioners were aware of the enormity of the problem as well as the damages to the human body. One physician described:

"Eating of gutkha (chewed tobacco) causes ulcer in the mouth and could lead to cancer, digestion becomes difficult, and if pregnant woman eats gutkha it affects the growth of the child, throat and lung cancer, cough, and respiratory problems."

Resistance to the integration of tobacco control into routine primary care was evident in interviews with PCPs. Nevertheless, most PCPs mentioned that they counsel tobacco users when they discover a patient uses tobacco regularly or has a health complication that may be a result of tobacco use, as demonstrated by the following respondents:

"In the case a patient is a tobacco user, we tell them to stop taking tobacco, following which we explain to them health problems as a result of tobacco."

Another medical officer mentioned that they normally counsel the patients on the health problems of tobacco use but expressed the need of infrastructure.

Step II: Quantitative results

Table 2 describes the profile of the respondents interviewed

Table 1: Interviews conducted steps 1, 2 and 3	
	Gujarat	**Andhra Pradesh**
Step 1	29 IDIs-Medical Officers at CHCs and District Hospitals - 20 and District-Level Officers such as District TB Officer, District NCD Officer - 7, Chief Medical Officer and Medical Superintendents - 2	30 IDIs-Medical Officers at CHCs and District Hospitals - 20 and District-Level Officers such as District TB Officer, District NCD Officer - 5, Chief Medical Officer and Medical Superintendents - 5
Step 2	713 semi-structured interviews - Medical officers - 110; Lab technicians and pharmacists - 83; ASHA and ANMs - 520	744 semi-structured interviews - Medical officers - 128; Lab technicians and pharmacists - 54; ASHA and ANMs - 562
Step 3	32 IDIs-District program manager (7), District training officer (7), District IEC officer (7), District training coordinator (7), Chief District Medical Officer (2)	40 IDIs-District program manager (7), District training officer (7), District IEC officer (7), District training coordinator (7), Chief District Medical Officer (7), District-level director (5)

ANMs: Auxiliary nurse midwives, ASHA: Accredited social health activist, IDIs: In depth interviews, CHCs: Community health centers, NCD: Noncommunicable diseases, TB: Tuberculosis, IEC: Institutional ethical committee

in Step II of the study. All ANMs, ASHAs, and nurses were female. The majority of respondents were <40 years of age (ranging from 61% of pharmacists to 97% of ASHAs); and serving in rural areas (ranging from 55% of nurses to 97% of medical officers and specialists and ANMs).

In Step II, 89% of ASHAs and 96% of Nurses recognized tobacco use as a major health problem in their state. Table 2 examines PCPs perceptions regarding the importance of setting up tobacco cessation facilities. Among them, the majority believed that establishing such a center was extremely important. However, 11% of medical officers and specialists perceived this to be not so important or that there was no need for such a center.

Table 3 demonstrates general consensus across the primary care providers that tobacco cessation training would be suitable for implementation at any point of contact between a health care professional and patient. Medical officers and specialists maintained the belief that tobacco cessation counseling would be suitable for implementation across all levels of trained health professionals. Laboratory technicians and pharmacists held similar beliefs, but prioritized nurses and doctors abilities (and interestingly laboratory technicians favored pharmacists and

vice-versa). These professionals, however, were less likely than nurses and ANMs to support the use of frontline health workers for tobacco cessation. In fact, ASHAs and ANMs were often the least favorable workers for tobacco cessation, and nurses were often the most favorable (with the exception of ASHAs, who preferred specialists).

Table 4 examines the preferences of PCPs for linking tobacco control efforts with existing national and state health and development programs. National Health Programs are programs that are institutionalized and being implemented under the Ministry of Health and Family Welfare, like the cancer control program, and the NTCP. State health programs are those running under the directives of the state-level administration, for example, the School Health Program running since 1997 in Gujarat. Most respondents from all categories were largely in favor of linking tobacco control efforts with National Health Programs. Laboratory technicians also were in favor of linking with state health programs (53%).

Figure 1 depicts attitudes of PCPs regarding the effectiveness of health systems integration of tobacco control on four measures: Reducing of smoking and smokeless tobacco, putting an end to

Table 2: Demographic profiles of stakeholders

	Medical officers and specialists (*n*, %)	ANMs (*n*, %)	ASHAs (*n*, %)	Nurses (*n*, %)	Lab technicians (*n*, %)	Pharmacists (*n*, %)
Age						
Up to 40	192, 81	337, 68	495, 97	57, 83	53, 73	39, 61
41-50	37, 16	130, 26	15, 3	10, 14	18, 25	17, 27
51+	7, 3	32, 6	1, 0.2	2, 3	2, 3	8, 13
Location						
Rural	212, 90	487, 97	497, 97	38, 55	61, 84	54, 84
Urban	26, 11	14, 3	15, 3	31, 45	12, 16	10, 16
Total	238, 100	501, 100	512, 100	69, 100	73, 100	64, 100

ANMs: Auxiliary nurse midwives, ASHAs: Accredited social health activists

Table 3: Other health professionals who can be influential in counseling patients to stop tobacco consumption

	Medical officers and specialists (*n*, %)	Nurses (*n*, %)	ANMs (*n*, %)	ASHAs (*n*, %)	Laboratory technicians (*n*, %)	Pharmacists (*n*, %)
Doctors and specialists	-	57, 83	387, 77	388, 76	64, 88	55, 86
Laboratory technicians	164, 69	61, 88	319, 64	304, 59	-	48, 75
Pharmacists	186, 78	54, 78	290, 58	267, 51	58, 79	-
Nurse	200, 84	-	399, 80	414, 81	45, 62	52, 81
ANM	211, 88	54, 78	-	425, 83	62, 85	59, 92
ASHA	198, 83	20, 29	252, 50	-	54, 74	53, 83

ANMs: Auxiliary nurse midwives, ASHAs: Accredited social health activists

Table 4: Linking of tobacco control with any other existing national/state level health and development programs

	Medical officers and specialists (*n*, %)	Nurses (*n*, %)	ANMs (*n*, %)	ASHA (*n*, %)	Laboratory technicians (*n*, %)	Pharmacist (*n*, %)
No	11, 5	1, 1	13, 3	12, 2	1, 1	-
Yes, with National Health Programs	167, 70	41, 59	304, 61	267, 52	46, 63	43, 67
Yes, with State health programs	80, 34	28, 41	217, 43	205, 40	39, 53	24, 37
Yes, with National development programs	91, 38	15, 21	111, 22	155, 30	23, 31	17, 27
Yes, with State development programs	13, 5	8, 12	69, 14	66, 13	5, 7	7, 11

ANMs: Auxiliary nurse midwives, ASHA: Accredited social health activist
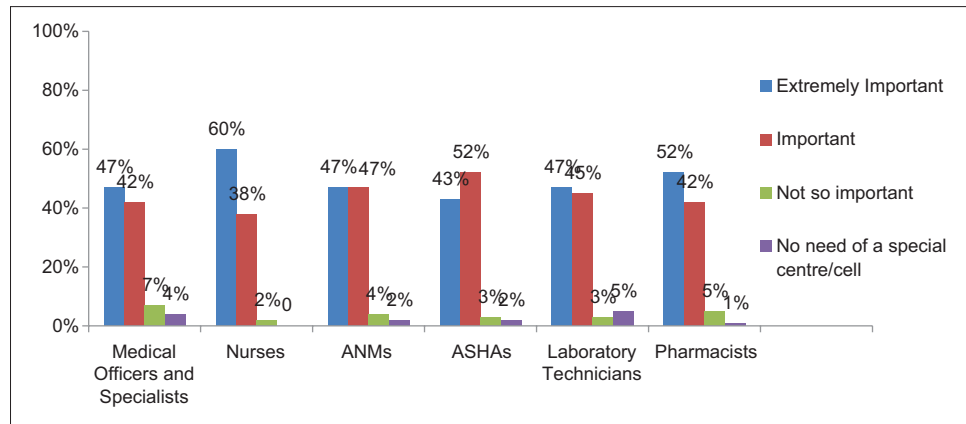
Figure 1: Importance of setting up a center/cell to help stop tobacco consumption

smoking tobacco and stopping the consumption of smokeless tobacco. Respondents were asked to rate the effectiveness (very effective, somewhat effective, or not very effective) of health systems integration of tobacco control on each of these measures. The majority of respondents at the same time also view integration to be only somewhat effective in the other three measures (reduction of consumption of smokeless tobacco, putting an end to smoking tobacco, and stopping the consumption of smokeless tobacco).

Proper training was the limitation identified overwhelmingly by all respondents, ranging from a low of 67% by ANMs to a high of 81% by pharmacists. More than 60% of providers in all respondent categories cited knowledge of tobacco control as a limitation. Moreover, health personals do not see tobacco as a problem, around 16% of medical officers and pharmacists reported tobacco control as an insignificant problem in their districts.

Step III: Program heads and policy-makers perspectives

The general belief that implementation of NTCP at the population level required more attention was widespread. Program heads and policy-makers in Andhra Pradesh and Gujarat were divided based on the experiences of the respondents and the ways in which they understood NTCP policy implementation. For some, the effectiveness of the policy was understood via outcomes, such as reduction of smoking in public places and increased social awareness of the problems of tobacco use. Others interpreted the effectiveness of the policy in terms of the process of implementation of the policy. These respondents were more likely to be less satisfied because they believed that the policy was only "ornamental."

Many respondents stated that more monitoring of program implementation was needed, and there was lack of clarity on the details of implementation procedures and accountability among government departments:

"I did not find any one from the government department who collects fines. The policy is not well-implemented. At least now, they have

to do it. I have gone to a meeting related to this, but who is going to take the responsibility and do it?" – District Training Coordinator, Andhra Pradesh.

There was also a concern with the ways in which tobacco control was currently incorporated into primary care setting. When asked if they believed counseling is an effective method of tobacco control, District officials generally agreed that counseling was an important part of tobacco control but also opined that the current form of counseling required revision. One concern was that doctors only inquired about tobacco consumption with patients who already presented with health problems that might correlate with tobacco use.

"Doctors will definitely ask about the habits of the patients, but doctors ask about the habit of tobacco consumption only if the patients are showing any indicative symptoms. I think they should ask every patient. It wouldn't take time to talk to all the patients; they need to be made aware." - District Training Coordinator, Andhra Pradesh.

Many program heads and policy-makers believed that integration of tobacco control into primary care was beneficial for NTCP because it would increase the reach and effectiveness of the NTCP. However, some respondents believed that NTCP should be a stand-alone (vertical) program, as the implementation could be done easily:

"If it is a single program, it can be implemented easily and it can give good results. This program will also be successful like the pulse polio program. The service under this program would then be fast and easy." – District-level coordinator, SACS, Andhra Pradesh.

Discussion

The data presented here provide many insights into the effectiveness of the tobacco control program and bring to light many new issues that need to be addressed as the program is scaled up across India. For example, PHC physicians who work in these programs suggested that they can be effective for enhancing tobacco cessation. Respondents also promoted the utility of

vertical programs citing dedicated resources that could be used effectively such as using one program to reach young people through school health and health check-up programs. Although respondents were aware of the challenges associated with vertical programs, the resources and the focus of such program scored above the risks of running such a program. Thus, respondents communicated that focus on systematic capacity building should be a high priority because these are strengths of vertical programs that have had success in the field, and therefore should be taken in the design and scale-up of the NTCP program.

Others suggested that NTCP should be integrated into the health system on a short-term basis, after which its effectiveness should be evaluated, and decisions about future action should be carefully considered. WHO defines integration as "The management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system."[14] Based on the data presented here, we argue that integration of tobacco control strategies into the health care system within primary and secondary care will be more effective and make counseling and tobacco cessation easily available to the population at large than having specialist clinics at tertiary centers.

Our findings suggest that best solution for tobacco control in India should be devoted to developing and testing the effectiveness of such models before resources are used to scale up NTCP and the cessation clinics. This can be done by translating findings from integrated models which have worked in other domains and contextualizing it within other large-scale programs, such as Reproductive and Child Health (RCH), HIV/AIDS, and the Revised National Tuberculosis Control Program (RNTCP). These health programs are well-established, have extensive coverage, and have robust monitoring mechanisms in place. The data also suggests that tobacco control in India can be better achieved at low cost through an approach that builds upon clinical practices of existing PHC practitioners.[15] This finding is translatable to other interventionist contexts, such as when HIV was integrated with sexually transmitted infections/reproductive tract infection programs and maternal health.[16] Thus, we argue that a tobacco control program that provides an integrated service delivery within an acceptable distance will be successful in tobacco cessation. Ensuring system level reminders to trigger staff to screen and treat tobacco dependence are also cost effective approaches.[15] These reminders can be built into existing programs with very little expenditure as many of these programs already have established monitoring indicators.

Engaging health practitioners other than doctors alone will also reap dividends. For example, smoking cessation interventions led by nurse counselors have proven to enhance cessation by 50%.[17] Research has demonstrated that interventions that use multiple providers are very effective and that all healthcare professionals can have an impact in assisting with tobacco cessation. Programs such as HIV/AIDS, RCH, RNTCP have multiple providers and can serve as the platform where tobacco control can be inoculated.[9]

Our findings indicate that integration will be effective only when values and priorities of the local systems and healthcare providers are taken into consideration. Thus, it is essential to engage effectively with the targeted workforce before models for integration are developed. Such engagement will enhance the program and require tobacco cessation implementers to focus their efforts on basic training for primary care practitioners in tobacco control methods. Integration requires active support at different levels of the health system so that policies and program implementation at different levels can complement and supplement each other. Structured assessment of health systems' needs should be a starting point of future efforts for integration of tobacco control programs.

At the level of senior managers and policy-makers, integration can only happen when decisions on policies, financing, regulation or delivery are appropriately compartmentalized. For providers, integration would mean that separate technical services and their management support systems are provided, managed, financed, and evaluated at different entry points for tobacco control either together, or in a closely co-ordinated way. The team approach of involving multiple primary and secondary care providers at different levels in the health system will help spread the dangers of tobacco more effectively. Doctors, dentists, nurses, midwives (ANMs), and counselors (in available clinics) can be mobilized and trained in counseling and behavior change techniques for tobacco control. Brief advice should be a part of the routine consultation in outpatient department clinics. All health professionals should be trained in at least the 3 As, ASK Advise and Assist. Monitoring indicators for implementation of smoke-free places should be a part of the NTCP at sub districts-level and evaluated periodically to capture progress. Cessation guidance to be expanded from the existing tertiary care centers currently located at the regional cancer centers and mental health clinics to the outpatient clinics that exist as part of secondary health care system (such as CHCs and district hospitals). This might require the services of a cadre of "stop tobacco specialists" who would be counselors trained in evidence-based tobacco cessation techniques that should be placed in both primary as well as secondary level.

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Conflicts of interest

There are no conflicts of interest.

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