

Original Article

Process evaluation of glucometer based diabetes screening initiative in India: Early experiences from North India

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ABSTRACT

Background: Government of India, launched population based screening for diabetes under the National Program for Prevention and Control of Cancer, Diabetes, Cardio-vascular Diseases and Stroke (NPCDCS). There is a need to get early feedback and to fine tune this program. **Aims and Objectives:** (1) To assess the current status of the implementation of NPCDCS piloted at sub-center level in one district of Haryana. (2) To assess the views of health workers and community leaders regarding this newly launched program. **Materials and Methods:** This qualitative study was carried in selected villages of Ambala district in North India from July 2012 to December 2012. The study used in-depth interview with screened persons and health-care workers of the study area. Field notes were taken. Informal conversations with community leaders were held. **Results:** Residents were not made aware of screening activity prior to and after launching of the health program. There was anxiety among residents regarding screening. There was no focus on health promotion activities. There was a shortage of self-diagnostic kits for screening diabetes. **Conclusion:** Adequate priming of the population was not carried out before launching the NPCDCS program. Validation of kit is questionable. Continuity of medical care in patients screened for diabetes was missing.

Key words: Diabetes, national program for prevention and control of cancer, diabetes, cardio-vascular diseases and stroke, screening

INTRODUCTION

India is in the grip of an epidemic of non-communicable diseases (NCD). They are responsible for sizeable mortality and morbidity.^[1,2] Sensing this growing concern, Ministry of Health and Family Welfare, Government of India, launched the National Program for Prevention and Control of Cancer, Diabetes, Cardio-vascular Diseases and Stroke (NPCDCS). This program envisages provision of preventive, promotive, curative and supportive services to people with NCDs at various levels of health-care starting from the sub-center level to tertiary hospitals. At

the sub-center level, three types of the package of services are planned viz. health promotion for behavior change, “opportunistic” screening using blood pressure and blood glucose measurement. Suspected cases are referred to the next level of health-care for conformation and further management.^[3]

Program evaluation enables program improvement. Information gathered from such an evaluation process can help school administrators make decisions about maintaining or modifying programs and allocating resources wisely. Both qualitative and quantitative research are designed to gain knowledge on program functioning. Both methods have different strengths, weakness. While, quantitative data explains the why and how of your program, qualitative data explains the what, who and when.^[4]

This qualitative study was planned with the objective of assessing the current status of the implementation of NPCDCS piloted at sub-center level in one district

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DOI:
10.4103/2321-0656.115307

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of Haryana and to assess the views of the community regarding this newly launched program.

MATERIALS AND METHODS

Personal interviews were conducted by trained personnel using a guide of items grouped in two heading viz. views of health-care workers about the implementation of the program and views of people who availed screening services under the program. Meetings were held with patients who attended the out-patient diabetes clinic in General Hospital Naraingarh, Ambala. The following topics were incorporated in the individual interviews: How was your experience of being screened under this program? Would you like to elaborate on the problems faced by you (if any) in this process of screening? This group consisted of twelve suspected diabetes screened patients.

Furthermore, a team of field investigators visited villages and interviewed eight patients in their houses. A focus group discussion was planned with the community leaders (two from every village). They were asked to relate the weakness of this newly launched program. Finally, health-care workers of the selected villages were interviewed to gain insight into their point of view regarding implementation of the program. Interviews were tape recorded and later transcribed by the principal investigator. During their field visit, the investigators observed some screening sessions. Data collected was typed and later theoretical categories were defined.

RESULTS

The perception of screened people: Inadequate priming

1. People generally demonstrated a lack of understanding of issues in relation to the benefits and disadvantages of diabetes screening or the implications of screening test results. "What good will this test do to me...will I get any medicines..." is what a participant remarked. Some were in contemplation mode trying to understand why this testing was being performed on such a large scale. A study participant remarked "Yeh kaunsa test hai jo sarkar muft kara ra hi hai...aur is ka mujhe kya fayda hoga...sample toh de diya...mujhe bataya theek report hai....." Another remarked, "this is new to me. I never thought of having a diabetes test at home".
2. General response of people to a positive diabetes test result was one of distress, anxiety, and upset. One study participant described feeling shocked on being told after the screening test that he was suffering from diabetes (random blood sugar of

334). The extent of anxiety was expressed by him as "I mean...I must have done some sin...raised blood sugar indicates that...maybe I ate too much sugar in life.....I am terrified as what will happen now.....and I heard it costs u a lot of money...what will happen now".

3. Many times the anti-diabetic medicines in the pharmacy were out of stock. So people were forced to buy the same from private chemist shop. Intermittent supply of medicines made them a harassed lot. Some cursed the health system while others blamed us for this. A participant remarked "had health-care workers not done this screening work, it would have been better...we were ok as such only".

The perception of community leaders

1. A community leader told that prior to conducting these tests no information was given on why these tests were being carried out and what if someone was screened positive.
2. Most of the people residing in this village had refused testing. Lambardar (community leader) of one of the villages remarked "is gaon mein log garib hain...unpad (illiterate) bhee kafi hain...unhein samaj nahin aata test kyun karvayen..... (People in this village are poor and illiterate. They do not understand the importance of getting the test done).

Interviews with health-care staff: Overburdened and ill-trained health-care workers

1. Many health workers expressed their concern related to extra work pressure on them due to this program. A health-care worker remarked "Pehle itnaa kaam hai...isse bhee karna padega...mujhe toh aaj bhee tuberculosis (TB) ka patient dekhne jaana hai...phir kal immunization bhee karni hai..."(Already I have so much work, I have to take a TB patient to the government facility, tomorrow I have to conduct an immunization session).
2. A health-care worker remarked about the inadequate training received by them. "Training ek din hui...vahan kaafi bheed thee...groups mein demonstration hua...kuch dikha...kuch nahin...kuch samaj aaya...kuch nahin..."(Training was for 1 day - it was quite crowded-it was a group demonstration - we could see some part of it, rest was not visible - we could not understand much).
3. A health worker remarked "Yeh diabetes screening kit toh 1200 se upar test nahin karti...galat report aana common baat hai...Maine Sir ko replace karne ke liye kaha hai...par kuch response nahin aaya... "(This kit does not work after testing 1200 patients...wrong reports are common...I have informed my seniors... nothing has been done until date...).

Observation by filed investigator

1. Behavior change communication was the least targeted intervention by health-care workers. People coming to sub-center, getting tested and leaving after listening to the report was a common finding at most of the sub-centers.
2. There was a long queue at the out-patient department and in the diagnostic laboratory of screened patients. The laboratory technicians were uneasy with the sudden increase in diabetes testing. The pharmacist looked concerned and frequently visited the medical officer in charge of the health facility for discussing stock of antihypertensive and anti-diabetic medicines.
3. Once there was problem with the diabetes screening kits, there was no replacement of it. Health-care workers informed their superiors about it. This should have translated into repair and replacement of products, but this did not happen.

DISCUSSION

It has often been highlighted in public health debates that some health programs do succeed, but many fail to meet their objective in some way or the other. There have been dramatic successes of health programs such as the eradication of smallpox, guinea worm and goiter and the near eradication of polio, though a bit delayed. Contrary to this, there has been the failure in reducing the prevalence of anemia by launching the national program for control of anemia. Unfortunately, anemia control efforts in population groups have suffered from stressing on single interventions, i.e., iron supplementation. A behavioral change communications strategy to promote a balanced diet and compliance with iron supplements has been the ignored component of this program.

With an aim of doing operational research aimed at improving program effectiveness of the newly launched NPCDCS we tried to analyze the results of the present study in the context of the design reality gap. Design is what our government wants its people to get from the health program. Reality is current field situation. The larger is this design reality gap, the greater risk of failure and equally the smaller the gap, the greater the chance of success. Some of the pitfalls and redressal mechanisms in the implementation of this program are enlisted in the subsequent paragraphs.

Inadequate priming

The first identified gap is that between the desired and actual preparation of community for a new program component. People were ill-informed, a reason why there was poor response to the screening component of

this program. Screening is not a simple activity, because individuals who participate in screening consider themselves to be healthy and do not have any symptoms. Further screening is not just a test and labeling strategy condition. It should be linked with interventions and treatment. Program planners and implementers have a special duty of care when conducting investigations on apparently healthy asymptomatic person in screening programs. It is desired to make a person aware of the limitations of screening and the uncertainties, in particular the chance of false positive and false negative results. They need to be explained any follow up plans, including the availability of referral, counseling and support services.

Referral continuity gap

The second identified gap was referral continuity gap. There was no required referral arrangement for screened patients. As a minimum a carefully designed standard operating procedures should be included in the screening process. This should include interpreting test results and the assistance of referral health-care institution in case of positive screening.

Training gap

The third identified gap was training gap. No training modules were given to health-care workers. Training should be extensive and using the latest teaching techniques. The use of audio-visual aids and interactive lecture sessions increase the transfer of knowledge. Furthermore, refresher course sessions need to be planned for them.

Faulty and invalidated hard component

The continuing screening activity with these fault kits raises doubts on the seriousness of health planners in the successful implementation of this health program. Questions arise when it comes to making such diagnostic kits available for large scale screening. Before rolling out the program establishing validity (sensitivity and specificity) should have been established. Invalidated faulty kits create considerable confusion and generate ethical concerns. It is morally necessary to discuss screening in terms of human rights. Labeling a person as diseased with faulty kit is a serious error. Such mass screening program should be regulated and labeled as research until it the diagnostic kits validity is established.

Health promotion gap

Our observations point out to aggressive stressing on diagnostic screening. It is in this context that sound understanding of the NCD management is necessary. Screening kits will not serve to influence a choice of healthy life-style. There is need of a comprehensive, systematic,

coordinated approach to affecting long-term health behavior change by influencing the norms of people through health education. Long-term behavior change is very difficult for most people. Strategies must provide people with health information and develop opportunities for people to practice healthful choices and encouraging them.

Manpower gap

Persistent gaps in manpower exist at the primary health-care level. The existing health manpower is overburdened by the manual tasks is collecting and transmitting data. Already there is established integrated diseases surveillance project (IDSP) system in place for transmission of information related to NCD (regular periodic surveillance). The IDSP is so designed that it has a dedicated team of experts for undertaking the scheduled activities of surveillance, data transfer and maintenance of records. Further, in this era of mobile-health improving operational efficiency through health services research can be a viable option. Mobile devices with smart application will enable health workers to record the data and send it electronically to concerned health centers.

CONCLUSION

In conclusion, this newly launched program needs some

modifications in its implementation. Priming work by means of informing and educating people before and after launching a health program should be done. Referral support for screened patients should be in place. Induction training and thereafter refresher training at regular intervals should be given to health-care professionals. Mobile health and using existing mechanism of transmission of information can ease the manpower gap.

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How to cite this article: Sharma D, Trusty K, Singh A. Process evaluation of glucometer based diabetes screening initiative in India: Early experiences from North India. *J Soc Health Diabetes* 2013;1:90-3.

Source of Support: Nil. **Conflict of Interest:** None declared.