

Prioritization Matrix for the Diabetes Prevention and Control Program: A Concept Paper

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Abstract

Introduction: The narrated NCD program is being implemented by KHS DRP in collaboration with the World Bank, New Delhi. This pilot project will involve NCD education and mobilization at the community level, provision of screening, and treatment services at the primary health-care level and strengthening diagnostic, specialist treatment services at the secondary and tertiary levels of care. This paper lists the activities of the diabetes component of the NCD program, and the prioritization matrix describes weighting of the important criteria. **Materials and Methods:** “Precede-Proceed” planning model is the better fit for our Diabetes Program. The prioritization matrix will enable weighting of each criterion against another (comparing each row heading consecutively with all the column headings), in order to decide upon its importance. **Results:** The matrix shows that awareness activities, beneficiary enumeration, mobilization of beneficiary, and behavior change interventions are the important criteria for this health promotion program. **Discussion:** The matrix shows that a large proportion of the budget should be invested in field-related activities for the success of the Program. **Conclusion:** Prioritization matrix enables the examination of all potential opportunities in a Program, by ranking the opportunities by two characteristics: importance and changeability. It systematically compares the choices through selection, weighting, and application of criteria.

Keywords: Criteria weighting, diabetes program, health promotional plan, prioritization matrix

INTRODUCTION

The Karnataka Health System Development & Reforms Project (KHS DRP), Directorate of Health Services, Government of Karnataka (GoK), is a World Bank-assisted project which aims to increase the utilization of curative, preventive, and public health services particularly in underserved areas and among vulnerable groups of Karnataka state, India, toward accelerating the achievement of health-related Millennium Development Goals.

The project is being financed by a credit from the International Development Association (IDA): the World Bank’s concessionary lending arm, which provides interest-free loans with 25 years to maturity and a grace period of 5 years. The contract exists between the World

Bank and the Directorate of Health Services, Karnataka state, India.

This project was initiated during 2006, with financing of USD 141.83 million for 6 years. Since then, the project has contributed toward development of the state’s health system, including improving administrative capacity and planning, investing in maternal health services, contracting nongovernmental organizations (NGOs) to run mobile health clinics, supporting community-level public health interventions, and contributing to a state government insurance scheme that purchases hospital services for poor beneficiaries from accredited public and private hospitals.

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During 2012, the stakeholders (Directorate) signed a USD 70 million additional credit agreement for the ongoing Program and extended the same for another 4 years.

A number of new strategies to address emerging health issues were piloted with the support of this Project, including the program for noncommunicable disease (NCD) prevention and control, focusing on hypertension, diabetes, and cancer. These diseases are imposing a growing burden on the poor in India. The following article describes the prioritization matrix of the diabetes component in this health promotional program.

The Deputy Director in-charge of the NCD program addresses the procurement, manpower, and implementation issues, including reporting and monitoring. As a Consultant with the NCD program, the author was involved with drafting of training manuals (in consultation with external agencies) uniquely for Medical Officers, Staff Nurse, Health Assistants, and accredited health activists. Other areas of work include reviewing needs assessment reports, Procurement planning, drafting of Operational guideline document (in consultation with external agencies), and terms of reference for the manpower in the Program.

The KHSDRP-NCD program has methodological changes when compared to the NPCDCS (National Program for Cancer, Diabetes, Cardiovascular disease, and Stroke). In NPCDCS, opportunistic screening is conducted in camps at the subcenter level and Institutional support is provided by the Medical officer and paramedics. In our current KHSDRP-NCD program, screening of hypertension, diabetes, and cervical cancer is done by an exclusive staff nurse at the primary health center (and other higher levels) and diagnostic confirmation by the medical officer at various levels of the public sector hospitals.

The KHSDRP pilot project in the districts of Davangere and Dakshina Kannada, Karnataka will involve NCD education and mobilization at the community level, provision of screening, and treatment services at the primary health-care level and strengthening diagnostic, specialist treatment services at the secondary and tertiary levels of care. In this Project, additional manpower will be procured, training activities will be conducted, drugs and services will be made available at all levels and referral linkages will be delineated. This model will be evaluated and best practices will be adopted for the state-wide scale-up process.

This Project's focus is to build advocacy at the community level where-in behavioral change and screening services are sought as a privilege, and are not avoided as a burden. In other words, people are made to realize that they are responsible for their own health. Simultaneously, capacity

building initiatives at the level of the health system are also being implemented.

Project goal

The goal of this project was as follows:

- a. reducing the population prevalence of risk factors by empowering individuals through health education and health promotion.
- b. effective implementation of the program (with emphasis on screening) at the health facilities, early detection activities, ensuring quality of care and adequate facilities for treatment at all levels.

The project-related data will be gathered consecutively and reported appropriately. The first part of our project is to bring in lifestyle changes, and the data for the same will be difficult to obtain. We will not be sure of the authenticity regarding: the duration of physical activity done per day, reduction in the consumption of tobacco/alcohol, consumption of prudent diet on a daily basis, and multiple sex partners. All of these data will be gathered by the health workers from the community, from among individuals with risk factors for NCDs.

The second part of our Project includes screening activities at the health center for hypertension, diabetes, and cervical cancer. The clinical data and relevant biochemical profile are captured through the health management information system, which could be cross-checked with handwritten records at the primary health centers. All these data are captured by the Staff Nurse, functioning at the NCD clinic in the health center. However, information regarding adherence to treatment, compliance to follow-up regimen, and referrals cannot be ascertained.

MATERIALS AND METHODS

“Precede-Proceed” planning model is the better fit for our Diabetes Program, as the main intent is to build advocacy among the community regarding implementing lifestyle changes and accessing screening services in a health center. These are voluntary efforts toward behavior change. During enumeration of the beneficiaries by the peripheral health workers in the community, awareness is created regarding the program. Peer-support groups will enable lifestyle changes, incentives (in kind) are provided for those seeking screening services, and mapping is done for subsequent secondary care. There is the active participation of both the Program implementers and beneficiaries.

In the prioritization matrix, certain criteria (as per the Program guideline) have been listed as column headings. The criteria for the matrix include the list of all activities included in the NCD program. These activities were provided by the World Bank, based on evidence derived from implementing such Programs in low-middle income

Ramani: Prioritization matrix for the Diabetes Program

Table 1: Prioritization matrix for the diabetes prevention and promotion program																		
Awareness activities (IEC)	Enumeration of beneficiary*	Mobilization of beneficiary	Manpower recruitment	Logistic procurement	Training	Behavioral change interventions	Adherence to treatment	Compliance to follow-up	Incentives for beneficiaries	Navigation for Referrals	Insurance coverage for tertiary care	Reporting	Supportive supervision	Monitoring & Evaluation	Supply chain systems	Intersectoral partnership	Row total	Relative decimal value
1	1	1	5	5	5	1	5	5	5	10	10	1	5	5	5	5	74	0.12
1	-	1	1	5	5	1	1	1	5	5	5	1	5	5	10	10	62	0.1
1	1	-	1	5	5	1	5	5	5	5	10	5	5	5	5	1	65	0.11
0.2	1	1	-	1	1	0.2	0.2	0.2	1	0.2	0.1	1	1	1	0.2	0.2	9.5	0.02
0.2	0.2	0.2	1	-	1	0.2	0.2	0.2	0.2	0.2	1	1	1	1	1	5	13.6	0.02
0.2	0.2	0.2	1	1	-	0.2	0.2	0.2	5	5	1	1	1	1	5	5	27.2	0.05
1	1	1	5	5	5	-	5	5	5	5	5	1	5	5	5	1	60	0.1
0.2	1	0.2	5	5	5	0.2	-	1	0.2	0.2	0.2	5	5	5	5	1	39.2	0.07
0.2	1	0.2	5	5	5	0.2	5	-	5	1	5	1	5	5	5	1	49.6	0.08
0.2	0.2	0.2	1	5	0.2	0.2	5	0.2	-	5	5	1	5	5	5	5	43.2	0.07
0.1	0.2	0.2	5	5	0.2	0.2	5	1	0.2	-	1	1	5	5	5	1	35.1	0.06
0.1	0.2	0.1	10	1	1	0.2	5	0.2	0.2	1	-	1	5	1	5	5	36	0.06
1	1	0.2	1	1	1	1	0.2	1	1	1	1	-	5	1	5	5	26.4	0.04
0.2	0.2	0.2	1	1	1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-	0.2	1	5	11.2	0.02
0.2	0.2	0.2	1	1	1	0.2	0.2	0.2	0.2	0.2	1	1	5	-	5	5	21.6	0.04
0.2	0.1	0.2	5	1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1	0.2	-	5	14.3	0.02
0.2	0.1	1	5	0.2	0.2	1	1	1	0.2	1	0.2	0.2	0.2	0.2	0.2	-	11.9	0.02
Grand total																	599.8	

*Risk factor assessment has not been considered

Countries across the Globe. Technical inputs were taken from experts while assigning the weighting scores. Also, the results of the needs assessment (both qualitative and quantitative) conducted by the hired Medical colleges in the selected 2 districts were factored in assigning the scores.

A time-bound aspect of this Project was the lag between physical progress and financial progress. The progress of the Project was monitored by the World Bank, and based on their advice the Project's focus involved expenditure towards procurement and hiring, which results in the financial progress. This matrix enables re-prioritization of Project objectives, towards achieving the aim of health promotion of the community.

The matrix will enable weighting each criterion against another (comparing each row heading consecutively with all the column headings), in order to decide upon its importance. As we cannot compare a criterion against self, such cells are left blank in the matrix. The following weighting system^[1] is used to quantify the importance:

10 = much more important,

5 = more important,

1 = equally important,

0.2 = less important,

0.1 = much less important.

Each time a weight is recorded in a row cell, its reciprocal value should be recorded in the corresponding column cell:

Weight of 10→ reciprocal value of 0.1

Weight of 5→ reciprocal value of 0.2

Weight of 1→ reciprocal value of 1

Weight of 0.2→ reciprocal value of 5

Weight of 0.1→ reciprocal value of 10

After completing the weighting of all criteria and recording of reciprocal values, the sum of each horizontal row is computed under the column heading "Row total." The Row totals are cumulated for a grand total. When each row total is divided by the grand total, we derive the "Relative decimal value" for each criterion listed as a row heading. The relative decimal values also called as "criteria weighting" indicate how relatively important each criterion is for the program. We will use the criteria weighting for comparing options at the end of the process.

RESULTS

Table 1 depicts the prioritization matrix of the NCD Program. The matrix shows higher criteria weighting for awareness activities, beneficiary enumeration, mobilization of beneficiary, and behavior change interventions. These four criteria will be the important activities for this health promotion Program.

DISCUSSION

This project was initiated in 2014, when the NPCDCS program was being implemented in five other districts of Karnataka state. The general belief in the community is to minimize their assessment of self-risk for NCDs and avoid the screening services. Through this project, our intent was to facilitate access to NCD-related care in the public health centers. Although providing logistic support for improving the NCD screening facilities in these set-ups is an arduous task, the larger challenge is to motivate and mobilize normal individuals (>30 years) to the health center to access the same, and inculcate behavior change initiatives among them.

Of the total amount budgeted for the NCD program, the matrix shows that a large proportion should be invested in field-related activities for the success of the program. Such activities include creating awareness in the community and promoting behavior change toward inculcating healthy lifestyle behaviors. Also, the matrix lists in-person interaction with the beneficiary during the enumeration process and mobilizing them for accessing screening services as important criteria for the benefit of the program.

The project objectives apart from conducting awareness interventions for the community and other strata such as school and work-place-based activities also include implementing behavior change techniques such as role-plays in the community and peer-support networks functioning through Mahila Mandals and self-help groups. The Project also has provision for navigating patients needing secondary and tertiary care to referral hospitals, by incentivizing ASHA workers for the same. Surgical interventions will be reimbursed through the public insurance: Vajpayee Arogyasri Scheme (VAS).

CONCLUSION

The funding from World Bank as soft loan for such health programs is focused on low- and middle-income countries. It enables capacity building of public health systems where processes are still developing. The focus was on vulnerable groups, which does not exclusively mean slum dwellers and tribal people, but includes the capital population of the public health centers both in rural and urban areas.

Prioritization matrix enables the examination of all potential opportunities in a Program, by ranking the opportunities by two characteristics: importance and changeability. It systematically compares the choices through selection, weighting, and application of criteria. The benefits of prioritization matrices^[1] include to:

- Enable the narrowing of all solutions to the best ones, which are more likely to increase the chances of successful program implementation.
- Enable decision criteria by limiting "hidden agendas" from the choices.
- Enable the resolving of disagreements, and consensus on decisions.

Ethical Clearance

The authors stated that the ethical clearance was not needed for this paper, because it is a concept paper and does not include gathering primary data or analysis of secondary data.

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Conflicts of interest

There are no conflicts of interest.

REFERENCE

1. Prioritization Matrix. Available from: <https://www.health.state.mn.us/communities/practice/resources/phqitoolbox/prioritizationmatrix.html>. [Last accessed on 2020 July 14].