Screening utilizing non-laboratory based Implementing an integrated m-Health system **Diabetes Risk Score** Patient Public education on diabetes Screening at health facility Screening by health workers, and hypertension through education and by nurses, physicians of referral of high risk and engagement social marketing campaigns patients who come directly those with diabetes, in patient hypertension to health facility networks by Evaluation of those referred health workers Screening of \geq 30 year olds by health workers Use of tablet based in the health by trained health workers using health worker Use of tablet based physician diabetes risk score and facility/ decision support system decision support system community glucometers (Unique ID assigned) Guideline based Assignment of unique ID and generation of electronic record management Low risk **High risk** Program Transmission to central database at call centre Provide health Refer to Follow-up, trained healthcare healthcare adherence education 11 tracking materials + system providers using m-Health Health workers, nurses, physicians, pharmacists lifestyle advice tools

Registry and Quality Improvement Program (QIP)

Register 10000 patients with diabetes

Assess their characteristics, treatments received and outcomes experienced

Implement QIP for improving diabetes and hypertension detection and management

QIP - standard baseline risk assessment directed at detection of diabetes and hypertension, initiation of guideline based non-pharmacological and pharmacological therapy, measures of follow up and referral

Through representative surveys at baseline (Year 1), mid-term and post intervention (end of Year 4)

Expected to significantly increase over baseline the levels of :

- The public's awareness and knowledge about diabetes and hypertension
- Those aware, diagnosed, treated and controlled to recommended targets
- The use of guideline based management by providers leading to improved outcomes
- Access to care, adherence to treatment, and the degree of conformity to the Indian Public Health Standards





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Implementing a **Comprehensive Diabetes** Prevention and Management Program in India



Rationale

Diabetes and hypertension are increasingly rapidly in India. Despite availability of proven and effective prevention strategies and treatments, the detection and control rates of diabetes and hypertension are abysmally low. Thus, great potential and opportunity exists to reduce their rising burden through concomitantly improving their prevention, detection and control. This 5 year program envisages comprehensively addressing the whole continuum of care from prevention, to detection and management.

- In India, 61 million people currently have diabetes; 101 million will have by 2030
- In India, 118 million people had hypertension in 2000; 213 million will have by 2025
- Cardiovascular disease (CVD) is the major cause of death and disability in people with diabetes
- Up to 75% of CVD in people with diabetes is attributable to co-existent hypertension
- Hypertension is a contributing factor to diabetic complications: retinopathy, nephropathy and amputations

To prevent, detect, reduce the risk of diabetes and hypertension and to improve the treatment and management of individuals with either conditions by implementing a comprehensive diabetes prevention and management program in the selected sites

Determine in the selected sites:

- The awareness, the knowledge levels about diabetes and hypertension, the proportion treated and controlled among a representative sample
- The patient knowledge levels and self management skills among a representative sample of those diagnosed with diabetes and hypertension
- Healthcare providers' knowledge and practices related to diabetes and hypertension management.
- The level of access and potential barriers to diabetes and hypertension care provided by the public health system and the degree of conformity to the Indian Public Health Standards (IPHS)
- The cost-effectiveness of the intervention program in improving diabetes and hypertension treatment and management outcomes

- Two geographically and culturally distinct (South and North India) sites: Vishakhapatnam (Vizag) in Andhra Pradesh and Sonepat in Haryana
- In both sites, urban and rural sub-sites will be selected, each with a minimum population of approximately 100000 people, yielding a total population of 400000
- All adults aged \geq 30 years will be enumerated, invited for screening and based on risk assessment and stratification, subsequently linked to healthcare and tracked

To establish baseline, inform interventions to improve populations, patients and providers behaviors; mid and end of program surveys to assess program impact



Reporting and Advocacy

Widely disseminate findings and advocate for program replication with the government

Interventions

5 Synergistic multi-component, multi-level interventions

- Build awareness on diabetes and hypertension through social marketing, health promotion and screening events
- Improve patient education and self management by:
- « Training health workers in diabetes and hypertension detection, referral, follow-up and in imparting patient education
- Enabling health workers with low-cost technology supported decision support systems
- « Creating patient networks
- Increase healthcare provider capacity by:
- « Developing evidence based management guidelines for diabetes and hypertension
- « Implementing a diabetes registry with a quality improvement program
- Improve access to treatment by working with local healthcare institutions and advocacy
- Widely disseminate the findings to the scientific community, general public, and government and leverage the findings to effectively advocate with relevant stakeholders for improving care

Surveys

« Training healthcare providers (health workers, nurses, pharmacists, physicians) in guideline implementation