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POLICY BRIEF

Economic Evaluation of the Implementation of the WHO Package of Essential Non-Communicable Disease (PEN) Interventions in Indonesia

A collaborative study was conducted by representatives from the Ministry of Health's Directorate of Non-Communicable Disease (NCD) Control and the National Institute of Health Research and Development (NIHRD), the WHO Indonesia office, the WHO Southeast Asia Regional Office, and the Health Intervention and Technology Assessment Program (HITAP) to assess the value for money and budget impact of the current PEN interventions compared to "no screening" and other policy options. This economic evaluation assessed the integration of screening and treatment for diabetes and hypertension, which are part of NCD interventions in the WHO Package of Essential Non-Communicable Disease (PEN) program, into primary health care in Indonesia and found that it yields cost savings to the government and society. The findings are expected to be used as a tool to assist the government in making resource allocations in this area.

Policy Options[1]	Total cost per patient (million IDR[2])	Total DALYs[3] lost per patient
No Screening	IDR 58.33 *(Most Expensive)*	7.14
Current PEN Policy Random CBG[4] for people aged 15+ at PBD[5] Random CBG; Aged 15+; Posbindu (PBD) Communtiry Based	IDR 57.86	7.10
PEN PBD (community)-Based Selective Screening Fasting CBG for people aged 40+ at PBD Fasting CBG; Aged 40+; Posbindu (PBD) Communtiry Based	IDR 57.88	7.12
Recommended Option **PEN PKM[6](Primary health care)-Based Selective Screening** FPG[7] for people aged 40+ at PKM FPG; Aged 40+; Puskesmas (PKM) Primary health care	IDR 57.66 *(Least expensive)*	7.11

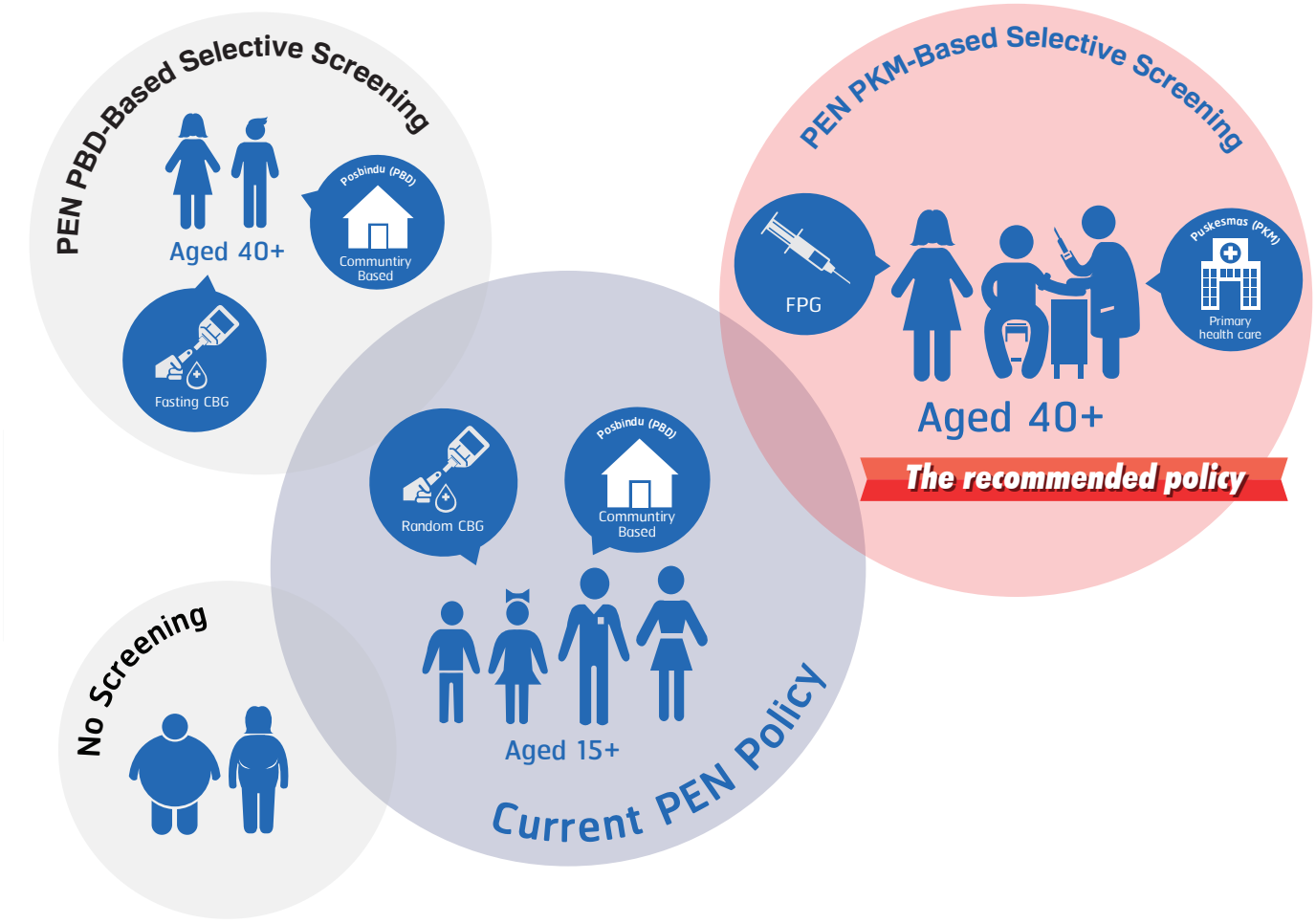
[1] For all options (except "No screening"), positive cases are referred to PKM where a confirmatory test by FPG and treatment is provided.
[2] Indonesian Rupiah (IDR)
[3] DALYs (Disability Adjusted Life Years)
[4] Capillary Blood Glucose (CBG)
[5] Posbindu (PBD) are centers and/or activities organized by trained village health care volunteers to conduct community-based engagement and programs for the prevention and control of non-communicable diseases.
[6] Puskesmas (PKM) refers to primary health care facilities.
[7] Fasting Plasma Glucose (FPG)

Non-Communicable Diseases (NCDs) – A National Burden

Indonesia's trend of aging population and unhealthy lifestyles spell increasing health – and economic – impact from NCDs. In 2014, the World Health Organization (WHO) estimated that 71% of total deaths in Indonesia were due to NCDs, of which 61% were due to diabetes and cardiovascular diseases (CVDs). In an attempt to counter the rising threat of NCDs, the delivery of screening and treatment for diabetes and hypertension, which are part of NCD interventions in the WHO's recommended Package of Essential Non-communicable disease (PEN) interventions, have been integrated into primary health care in Indonesia in 2011. Indonesia implements the PEN program nationally through Posbindu (PBD) and Puskesmas (PKM). PBD is where trained village health care volunteers conduct activities for a community engagement and community-based awareness including screening for hypertension and diabetes using Random Capillary Blood Glucose (RCBG) for the Indonesian aged 15 years and older. Following this, positive cases are referred to PKM (primary health care facilities) where a confirmatory test by fasting plasma glucose (FPG) and treatment is provided.

Evaluation of Policy Options for PEN program in Indonesia

The study assessed the value for money and budget impact of the current PEN interventions compared to three policy options, particularly focusing on the main disease-burdens diabetes and hypertension. Alternative policies include, "No screening," "PEN PBD-Based Selective Screening"and "PEN PKM-Based Selective Screening". An economic model was developed using local, regional, and global information to quantify the potential lifetime costs and outcomes of each policy option in terms of disability-adjusted life years (DALYs).



Value for money

The study found that the Current PEN Policy of screening for diabetes and hypertension in Indonesia is cost-saving compared to no screening. This entails that the cost of investing in screening and early treatment interventions is less than the cost of late-stage treatment interventions. While these results are encouraging, the current policy coverage is low and needs improvement. Additionally, the study also finds that a policy of PEN PBD-Based Selective Screening is cost-ineffective compared to the Current PEN Policy. Alternatively, a PEN PKM-Based Selective Screening was found to be cost-saving with only a small loss in health benefit relative to the Current PEN Policy (due to not screening the younger generation which has a low disease prevalence). With reference to a PEN PKM-Based Selective Screening, the Current PEN Policy costs 52.14 million IDR more for every DALY averted.

However, to consider whether or not Indonesia should switch to a PEN PKM-Based Screening instead of the Current PEN Policy, the willingness to pay of Indonesia policy decision maker to avert one unit of DALY should be identified explicitly.

Budget Impact

Analysis on budget impact shows that under the "Current PEN Policy" only 28% of the population is covered. When compared to "PEN PKM-Based Selective Screening," there is potential for using the same budget amount to increase coverage to 63% of the targeted population and/or reallocate budget savings to other programs without significantly compromising health outcomes.

Comparing Two Scenarios

If implementing PEN PKM-Based Selective Screening:

- Target **high-risk age groups** for screening of diabetes and hypertension.
- **Reallocate costs** from savings through targeted screenings to cover treatment for a higher percentage of the population and/or improve screening options:
  - o Improve financial access to early treatment.
  - o Cover PKM screening costs for the confirmation test.
- Consider **further use of PBD** (which are already mobilized) to implement public awareness and health-promoting campaigns, and if necessary to conduct screening in areas with limited access to PKM.

If maintaining current PEN Interventions (Current Policy):

- Cover **outreach populations** through innovative public awareness and advocacy programs.
- Use **PBD screening and diagnosis** in areas where access to PKM is difficult.

- **Posbindu (PBD)** are centers and/or activities organized by trained village health care volunteers to conduct community-based engagement and programs for the prevention and control of non-communicable diseases.
- **Puskesmas (PKM)** refers to primary health care facilities.

Policy Recommendations

- Continue implementing the **PEN** as it has been shown to be cost-saving so far in Indonesia;
- Implement **primary prevention** strategy in conjunction with PEN diagnosis and treatment programs;
- Improve **coverage** of the program, regardless of the policy option, especially for under-represented, poor, and vulnerable groups.

Acknowledgement

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For more information on this study, please go to *www.globalhitap.net/projects/pen_ee*

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