Assessing the value for money of hypertension control in Pakistan

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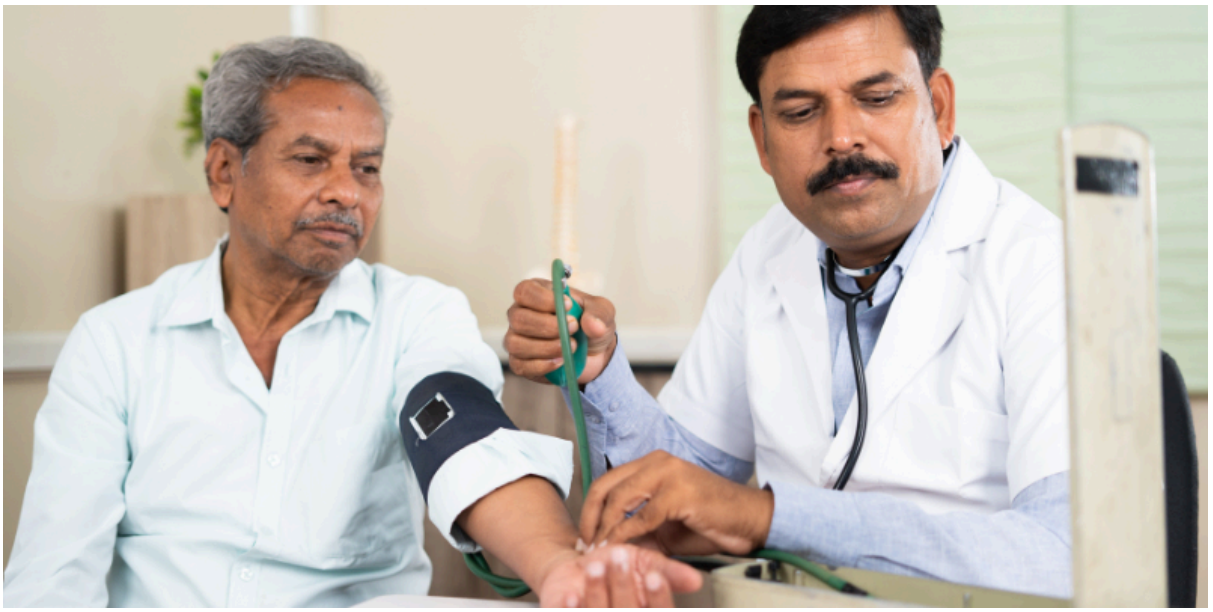

Hypertension (high blood pressure) is often called a "silent killer" because many people feel fine until a serious cardiovascular event (e.g. stroke, heart attack) happens. In South Asia, the condition is widespread and health budgets are tight, so decisions about scaling up programmes must consider what other services might be displaced as a result. Our research looked at the costs and benefits of an intervention to reduce blood pressure in the context of Pakistan.

A low-cost programme called the "Control of Blood Pressure and Risk Attenuation-Bangladesh, Pakistan, Sri Lanka" (COBRA-BPS), has been found to be effective in reducing blood pressure in rural Pakistan, focusing on community-based interventions and tailored healthcare strategies. A previous economic evaluation suggested COBRA-BPS was also cost-effective, but this was based on a comparison with a benchmark or threshold relating to the level of gross domestic product (GDP) in Pakistan. This sort of cost-effectiveness threshold does not reflect the real opportunity costs of investing in the programme in countries where health care resources are very limited as it does not take full account of the health benefits lost in other areas when investments in new programmes are made. The evaluation also did not consider downstream lifetime healthcare costs associated with cardiovascular events, nor the cost savings arising from preventing such events in individuals with hypertension.

Our research aimed to use a more realistic threshold against which to assess cost-effectiveness, as well as factoring in the long-term savings made from avoiding cardiovascular events. This helps to decide whether COBPRA-BPS represents value for money in Pakistan and if its introduction would improve population health.

We used a type of model (lifetime Markov model) for adults with hypertension and no prior cardiovascular disease. This allowed us to consider how patients would move from one health state to the next. It linked the observed blood pressure reduction from COBRA-BPS (about 4 mm Hg) to future risks of stroke, myocardial infarction and heart failure, using data from the literature. The model also captured the healthcare costs associated with the intervention, future health events and follow-up care. Outcomes were measured in disability adjusted life years (DALYs) averted.

Our results showed that compared to standard care, COBRA-BPS increases costs by about US$105 per person but averts about 0.416 DALYs over a lifetime, giving a measure of extra cost per DALY averted (incremental cost-effectiveness ratio - ICER) of around US$252. This is much lower than the results from the previous study which estimated US$2,270 per DALY averted. One of the main reasons the ICER is much lower than that reported in earlier work is that our study includes downstream cost savings from avoided cardiovascular events.

We also considered the results when we used a different type of benchmark to the GDP measure to assess overall cost-effectiveness. Using a more realistic threshold for Pakistan, our results suggest that COBRA-BPS would not be cost-effective as the alternative cost-effectiveness threshold for Pakistan is $183 per DALY averted. So, despite the lower cost per DALY averted calculated by factoring in wider costs and impacts, the programme would still not be judged cost-effective against this benchmark. This shows the importance of using context-specific thresholds to calculate the cost-effectiveness of new programmes.

The challenge for policymakers is to look for other ways to improve value for money before large-scale roll-out of programmes. In the context of COBRA-BPS, this might include delivery efficiencies, integration with existing services, or targeting higher-risk groups.

Read the full paper, funding sources and disclaimers in BMJ Public Health.

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