INVITATIONS AND INCENTIVES FOR PRIMARY CARE SCREENINGS IN ARMENIA
HIGHLIGHTS

Invitations from family physicians and pharmacy vouchers increased primary care screening attendance for hypertension and diabetes in Armenia. When the vouchers were conditional on screening, attendance increased by 31.2 percentage points while invitations and unconditional vouchers led to increases of about 15 percentage points. In contrast, only 3.5 percent of individuals in the control group, who received no intervention, were screened for hypertension and diabetes. Invitations and vouchers conditional on screening were equally cost-effective, and more cost-effective than labelled unconditional vouchers. Personal invitations from family physicians prompted users to consider their need for screening, but attendance also depended on the personal value on one’s health and the perceived health benefits of screening.
BACKGROUND

Non-communicable diseases such as hypertension and diabetes mellitus account for 93 percent of deaths in Armenia\(^1\) and cost up to 6.5 percent of annual national income.\(^2\) Furthermore, diabetes and heart disease, which is a complication of hypertension, increase the risk of severe illness from COVID-19.\(^3\) Over one in four Armenians are deemed to be at risk of severe illness from COVID-19.\(^4\) Detecting hypertension and diabetes mellitus is essential to initiating treatment, achieving disease control, and preventing complications. However, only 44 percent of the Armenian population above 15 years have had their blood pressure measured by a health provider, while only 24 percent have had their blood glucose measured in the previous 12 months.\(^5\) There is a widely held view that primary care is of poor quality. In addition, the cost of outpatient medicines and hospital care, when needed, lead to delays in initiating and complying with care.\(^6\)

Screening programs at the primary care level can facilitate the diagnosis of hypertension and diabetes, even in apparently healthy and asymptomatic patients, through medical examinations and tests. Since 2011, the Government has implemented a national performance-based financing scheme which has given financial incentives to providers for screening the population, including for hypertension and diabetes. In addition, there have been investments in training health workers on clinical guidelines and mass media campaigns to increase demand. However, the diagnosis of hypertension and diabetes has remained low. Global experience indicates that conditional financial incentives can increase preventive health care use by removing resource constraints to adopting healthy behaviors and by helping overcome issues of “bounded rationality or willpower.” Messaging interventions, including mass media messages and personal invitations, can also increase preventive health care use by reducing obstacles to change, adjusting perceptions of social norms, or associating the desired behavior with valued outcomes.

This study estimates the impact of demand-side financial incentives and invitations from a family physician on primary care screening attendance rates and examines potential mechanisms of action.

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EVALUATION

From Armenia’s e-health database, 2,000 individuals who had not been screened for hypertension or diabetes in the preceding year were randomly selected across four Marzes and assigned to one of four intervention arms or the control group (Table 1). Printed invitations signed by physicians were personally delivered by study field workers for all groups. In addition, intervention group 2 received information indicating that peers in their community had screened. Pharmacy vouchers worth 5000 AMD were provided as an unconditional encouragement with invitation letters to intervention group 3 and conditioned upon verified screening attendance for group 4 (Figure 1). In addition, 80 service users and 20 service providers were randomly selected and interviewed for qualitative interviews to understand the factors leading to decision to screen and following through with that decision.

**Table 1 • Overview of interventions**

<table>
<thead>
<tr>
<th>Study Groups</th>
<th>Description</th>
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<tbody>
<tr>
<td>INTERVENTION GROUP 1</td>
<td>Personal invitation to come to the health clinic for diabetes and hypertension screening.</td>
</tr>
<tr>
<td>personal invitation signed by a physician</td>
<td></td>
</tr>
<tr>
<td>INTERVENTION GROUP 2</td>
<td>Personal invitation to come to the health clinic for diabetes and hypertension screening with information on screening among peers.</td>
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<tr>
<td>personal invitation with peer group information</td>
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</tr>
<tr>
<td>INTERVENTION GROUP 3</td>
<td>Personal invitation to come to the health clinic for diabetes and hypertension screening and pharmacy voucher incentive, not conditioned on being screened.</td>
</tr>
<tr>
<td>personal invitation with a labeled pharmacy voucher</td>
<td></td>
</tr>
<tr>
<td>INTERVENTION GROUP 4</td>
<td>Personal invitation to come to the health clinic for diabetes and hypertension screening and pharmacy voucher incentive conditional on being screened.</td>
</tr>
<tr>
<td>personal invitation with a conditional pharmacy voucher</td>
<td></td>
</tr>
<tr>
<td>CONTROL GROUP</td>
<td>No personal invitation for screening or voucher. Exposure to general mass-media campaign to encourage health screenings that have been ongoing for several years.</td>
</tr>
<tr>
<td>no invitation or pharmacy voucher</td>
<td></td>
</tr>
</tbody>
</table>
RESULTS

Intervention group 4, who received personalized invitations and conditional vouchers, had the greatest increase in screening rates for hypertension and diabetes of about 31.2 percentage points, compared to the control group screening rate of 3.5 percent. Screening rates for both conditions increased by about 15 percentage points in intervention groups 1, 2, and 3 (Figure 1).

Participants are more likely to screen if they value their own health, perceive hypertension and diabetes as harmful but preventable, and if they perceive screenings to be useful. External motivators such as personalized invitations and vouchers motivated screening attendance. The invitation also prompted individuals to consider the preventive health benefits of screenings, although the fear of being diagnosed and requiring unaffordable treatment discouraged attendance.

Administering personalized invitations with conditional vouchers was about equally cost-effective compared to personal invitations only. Intervention administration ranged between AMD 29,681 and AMD 30,592 per additional person screened for hypertension and diabetes for groups 1, 2, and 4. For group 3, which received unconditional pharmacy vouchers, every additional person screened was about twice as expensive at AMD 60,650 (Figure 2).
POLICY LESSONS

Invitations from physicians and financial incentives can be useful for improving screening in Armenia. Personalized letters and unconditional pharmacy vouchers were similarly effective in increasing screening rates among those who had not screened in the previous year. Adding conditionality to the vouchers doubled the effect.

When intervention costs are considered, simple invitations and conditional incentives are more cost-effective than labeled unconditional incentives. Administering conditional vouchers costs about the same than administering the unconditional vouchers, but they are twice as effective. Simple invitations were less expensive than but equally cost-effective as conditional incentives. Hence, similar invitations and conditional vouchers would be a useful addition to the policy mix for improving screening care use in Armenia.

Personalized invitations and financial incentives may also have the potential to increase primary health care use, which has historically been low in Armenia. These interventions increased screening care use among those who had not screened in the past year, and who would be less likely to have contact with primary health care. Hence, simple invitations and financial incentives can increase contact with primary care facilities and facilitate better management of NCDs.
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