

Population Health Screenings for the Prevention of Chronic Disease Progression

Background

- Annual health screenings sponsored by employers can help identify patients with early indicators of disease and connect them to care.
- However, the effect of annual health screenings on disease progression and health outcomes is not well studied.
- **Objective:** In this study, investigators 1) determined the frequency of previously unrecognized chronic diseases detected during annual health screenings and 2) estimated the outcomes.

Methods

- The study population included 35,258 employees and spouses (65% women; mean age: 46 ±12 years) who participated in annual health screenings in 2017.
- Participants with conditions that were previously unrecognized (defined as detection in 2017 but no evidence of the disease in prior year) were identified by test results:
 - Pre-diabetes: HbA1c from 5.7% to 6.4%, or fasting glucose from 100 to 125 mg/dL
 - Diabetes: HbA1c >6.4%, or fasting glucose >125 mg/dL
 - Chronic kidney disease (CKD): estimated glomerular filtration rate <60 mL/min·1.73 m⁻²
- Colorectal cancer screening was offered to employees and spouses aged 50 to 75 years old; results were examined for 2013 through 2017 (n=18,976 tests).
- Estimates of outcomes were based on data from published literature.

Results

- For every 10,000 people screened, 1,185 (11.9%) had previously unrecognized pre-diabetes.
 - For every 1,000 people with confirmed pre-diabetes, diabetes could be prevented in an estimated 210 people over 5 years.
- For every 10,000 people screened, 287 (2.9%) had previously unrecognized diabetes.
 - For every 1,000 people with confirmed diabetes, complications were estimated to occur in 489 people within 5 years.
- For every 10,000 people screened, 73 (0.8%) were estimated to have previously unrecognized CKD.
 - For every 1,000 people with confirmed CKD, end-stage renal disease was estimated to occur in 34 people within 5 years.
- For every 10,000 people screened for colorectal cancer, 669 (6.7%) had positive results.
 - Among these 669, an estimated 263 adenomas and 14 colorectal cancers would be identified by 525 colonoscopies.

Conclusions

- Employer-sponsored annual health screenings can identify many cases of previously unidentified chronic diseases.
- Connection to appropriate follow-up medical care may improve health outcomes of employees and spouses and decrease the economic burden of chronic disease.

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