

Review: Periodic health examination increases delivery of some clinical preventive services and reduces patient worry

Boulware LE, Marinopoulos S, Phillips KA, et al. Systematic review: the value of the periodic health evaluation. *Ann Intern Med.* 2007;146:289-300.

Clinical impact ratings: GIM/FP/GP ★★★★★☆☆ Public Health ★★★★★☆☆

QUESTION

In adults, is the periodic health evaluation (PHE) beneficial in terms of delivering preventive services, improving clinical outcomes, and reducing health care costs?

METHODS

Data sources: MEDLINE, the Cochrane Library, Health Technology Assessment Database, National Health System Economic Evaluation Database, and Cumulative Index of Nursing and Allied Health Literature (to September 2006); hand-searches of 24 general medicine, preventive medicine, and public health periodicals; and reference lists. **Study selection and assessment:** English-language randomized controlled trials (RCTs) and observational studies that evaluated the benefits and harms of the PHE compared with usual care in adults. PHE was defined as ≥ 1 visit with a health care provider for the primary purpose of assessing the patient's overall health and risk factors for preventable disease. It consists only of the relevant history-taking, risk assessments, and physical examinations that could lead to delivering preventive services. 10 RCTs and 23 observational studies met the selection criteria, but only the 21 studies (10 RCTs, 2 cohort studies, and 9 cross-sectional studies) that were considered to provide "best available evidence" (according to the Grading of Recommendations, Assessment, Development, and Evaluation [GRADE] classification scheme) were included in the analyses. **Outcomes:** Delivery of clinical preventive services, short-term clinical outcomes, and long-term clinical outcomes and costs.

MAIN RESULTS

The strength and consistency of the evidence varied widely across outcomes, and the magnitude and even the direction of the treatment effect varied within some outcomes. The PHE showed benefit in increasing use of the gynecologic examination or Papanicolaou smear, cholesterol screening, and colon cancer screening and decreasing patient worry (Table). The effect of the PHE on other outcomes, including costs, was mixed (Table).

CONCLUSION

In adults, the periodic health examination shows benefit over usual care through increased delivery of some recommended clinical preventive services and reduced patient worry.

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Effect of the periodic health examination (PHE) vs usual care on delivery of clinical preventive services, clinical outcomes, and health care costs in adults

Outcome categories	Specific outcomes	Number and type of studies*	Quality of evidence	Direction (magnitude) of effect†
Delivery of preventive services	Gynecologic examination/Papanicolaou smear	2 RCTs	High	Beneficial (small to large)
	Counseling	1 RCT, 6 Obs	Low	Mixed
	Immunizations	3 RCTs	Medium	Mixed
	Cholesterol screening	1 RCT, 4 Obs	Medium	Beneficial (small to large)
	Colon cancer screening	2 RCTs	High	Beneficial (large)
Short-term clinical endpoints	Mammography	1 RCT, 1 Obs	Low	Mixed
	Disease detection	2 RCTs	Medium	Mixed
	Health habits	5 RCTs	Medium	Mixed
	Patient worry	1 RCT	Medium	Beneficial
	Health status	2 RCTs	Medium	Mixed
	Blood pressure	2 RCTs	High	Mixed
	Serum cholesterol	1 RCT, 1 Obs	Low	Mixed
Long-term economic and clinical endpoints	Body mass index	3 RCTs	Medium	Mixed
	Costs	4 RCTs	Medium	Mixed
	Disability	2 RCTs	Medium	Mixed
	Hospitalization	3 RCTs	High	Mixed
	Mortality	5 RCTs	Medium	Mixed

*RCT = randomized controlled trial; obs = observational study.
†Beneficial = all studies showed a benefit of PHE over usual care; mixed = some studies showed a benefit of PHE, but others showed harm or a neutral effect.

COMMENTARY

The review by Boulware and colleagues touched on 2 central questions in preventive health care. First, does each individual component of the PHE (such as Papanicolaou smear or blood pressure measurement), if actually done and coupled with follow-up care, improve health outcomes? Second, does providing preventive health care during periodic visits for that purpose alone (variously called health maintenance visits or, misleadingly, "annual physicals") produce higher rates of preventive care than adding this agenda to visits for acute and chronic illness? Unfortunately, this review mixed the 2 questions and thus was limited in what it could accomplish. As the authors pointed out, the included studies were characterized by "complexity and heterogeneity." Several studies were done in the 1960s and 1970s, before most evidence for the effectiveness of preventive care was available. Component studies included different screening tests, immunizations, and behavioral interventions and assessed different outcomes over different follow-up periods. Thus, the review could have failed to detect preventive care that is actually effective. Even so, the review supports some practices: gynecologic examinations and Papanicolaou smears, cholesterol screening,

and fecal occult blood testing. In practice, clinicians should include in their preventive efforts only those components with strong evidence for efficacy. Several organizations, such as the U.S. Preventive Services Task Force and the Canadian Task Force on Preventive Health Care, provide rigorous reviews of the evidence and recommendations. As for how preventive care should be delivered, clinicians are free to choose any way that works in their setting. But they should understand that preventive care is usually more complete when offered during periodic evaluations rather than as part of usual care (1) and when it involves systems and teamwork. Of course, periodic evaluations only work for patients who come in for them. For those who do not, opportunistic prevention is better than nothing.
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Reference

1. Ruffin MT, Gorenflo DW, Woodman B. *J Am Board Fam Pract.* 2000; 13:1-10.