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## Q / Do standing orders help with chronic disease care and health maintenance in ambulatory practice?

### EVIDENCE-BASED ANSWER

**A** / **RESULTS ARE MIXED.** Studies of standing orders tend to examine their effect on compliance with preventive interventions for chronic disease rather than disease outcomes. In the ambulatory setting, they improve rates of influenza vaccination (strength of recommendation [SOR]: **C**, consistent cohort studies measuring vaccination rates), pneumococcal vaccination

(SOR: **C**, consistent randomized controlled trials [RCTs] measuring vaccination rates), childhood immunizations (SOR: **C**, inconsistent RCTs measuring vaccination rates), and mammograms (SOR: **C**, RCT measuring screening rate).

Standing orders don't improve screening rates for colorectal cancer (SOR: **C**, RCT measuring screening rate).

### Evidence summary

Organizational changes in physician offices can improve delivery of services for preventing and controlling disease.<sup>1</sup> Standing orders—typically defined as physician-approved protocols that authorize nurses or other staff members to perform procedures, such as immunizations without direct physician involvement<sup>1</sup>—are readily applicable in ambulatory settings. However, only 30% of physicians use standing orders in their practices.<sup>2</sup>

Research on standing orders in ambulatory care has focused on immunizations and cancer screening (**TABLE**). Interventions implementing standing orders typically have multiple components and include staff education, chart flow sheets, and recall-reminders for patients.

#### Improvement in pneumococcal and flu vaccine rates

Three multicomponent RCTs of outpatient standing orders reported improved pneumococcal vaccination rates.<sup>3-5</sup> Similarly, 2 pro-

spective, multicomponent cohort studies<sup>6,7</sup> and 1 retrospective study<sup>8</sup> found improved rates of influenza vaccination with standing orders.

#### Childhood vaccination rates also show positive trends

Two controlled trials (1 randomized<sup>3</sup> and 1 nonrandomized<sup>9</sup>) that incorporated standing orders examined their use in childhood immunizations (measles, mumps, and rubella [MMR]; oral polio vaccine [OPV]; *Haemophilus influenzae*, type b [HIB]; diphtheria and tetanus toxoids with acellular pertussis [DTaP]; and hepatitis B). One trial reported increased use of acute care immunization opportunities;<sup>9</sup> the other showed a nonsignificant positive trend in vaccination rates.<sup>3</sup>

#### Standing orders increase 1 form of cancer screening, not another

A multicomponent RCT of standing orders for mammography and colorectal cancer screening

TABLE

## Effect of standing orders in ambulatory practice

Disease	Standing order	Improvement in vaccination or screening rate	NNT*
Pneumococcal disease <sup>3-5</sup>	Pneumococcal vaccine	Baseline range: 5%-15%; Follow-up range: 25%-28.3%	3.7-10
Influenza <sup>6-8</sup>	Influenza vaccine	Baseline range: 32%-51.4%; Follow-up range: 58%-74.6%	3.8-4.3
Cancer screening <sup>3</sup>	Mammogram	Baseline: 33%; Follow-up: 60%	3.7
Childhood illnesses <sup>9</sup>	Immunizations, ages 2-5 yr	Baseline: 14%; Follow-up: 29%	6.7

\*Number needed to treat (NNT) is based on the number of additional patients who receive an intervention based on the number who may be exposed to the standing order.

found a statistically significant increase in screening for mammography, but not colorectal cancer.<sup>3</sup>

### Recommendations

The Society of Adolescent Medicine recommends standing orders for administration of influenza vaccine during flu season.<sup>10</sup>

The Task Force on Community Preventive Services recommends standing orders for adult vaccinations based on "strong evidence," but states that insufficient evidence exists to

recommend standing orders for childhood vaccinations.<sup>11</sup> Vaccines examined include MMR, DTaP, HIB, hepatitis B, and varicella for young children; hepatitis B, varicella, MMR, and tetanus-diphtheria toxoids (Td) for adolescents; Td for adults up to 65 years of age; and influenza and pneumococcal vaccines for adults 65 years and older.

The Advisory Committee on Immunization Practices of the Centers for Disease Control and Prevention recommends standing orders for influenza and pneumococcal vaccines.<sup>12</sup> **JFP**



**ACIP** recommends standing orders for influenza and pneumococcal vaccines.

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