

Increasing Appropriate Vaccination: Standing Orders

Task Force Finding and Rationale Statement

Intervention Definition

Standing orders authorize nurses, pharmacists, and other healthcare personnel where allowed by state law, to assess a client's immunization status and administer vaccinations according to a protocol approved by an institution, physician, or other authorized provider. The protocol enables assessment and vaccination without the need for examination or direct order from the attending provider at the time of the interaction. Standing orders can be established for the administration of one or more specific vaccines to clients in health care settings such as clinics, hospitals, pharmacies, and long-term care facilities. In settings that require attending provider signatures for all orders, standing order protocols permit assessment and vaccination in advance of the provider signature.

Task Force Finding (March 2015)

The Community Preventive Services Task Force recommends standing orders for vaccinations on the basis of strong evidence of effectiveness in increasing vaccination rates among adults and children; when used alone or with additional interventions; and across a range of settings and populations.

Rationale

Basis of Finding

The Task Force finding is based on evidence from a Community Guide systematic review completed in 2009 (29 studies, search period 1997–2009) combined with more recent evidence (6 studies, search period 2009–February 2012). Based on the combined evidence, the Task Force reaffirms its recommendation based on strong evidence of effectiveness.

The Task Force considered evidence from 35 studies. Of these, 27 studies provided a common measurement of change in vaccination rates with a median increase of 24 percentage points (interquartile interval [IQI]: 12 to 35 percentage points). Nine studies that examined the impact of standing orders alone documented a median increase of 16 percentage points (IQI: 9 to 29 percentage points). Nineteen studies that evaluated standing orders when combined with additional interventions documented a median increase of 27 percentage points (IQI: 13 to 40 percentage points). Seven studies that did not provide a common measure of change for vaccination rates all reported favorable results after implementation of standing orders.

Applicability and Generalizability

The reviewed studies evaluated the effectiveness of standing orders across a wide range of clinical vaccination settings, health care personnel, and client populations. Standing orders were found to be effective in various settings including clinics, hospitals, and long-term care facilities. Interventions were effective when used with different vaccination providers including nurses and pharmacists. While most studies looked at adult populations, four examined intervention effectiveness among children and found a median absolute percent increase of 28 percentage points (range: 8 to 49). While no studies specifically evaluated the impact of standing orders for vaccination of adolescents, evidence from this review is likely applicable to this population. In addition, a subset of the included evidence suggests that standing orders may be more effective in improving vaccination rates in both inpatient and outpatient settings when compared to a provider reminder system.

Other Benefits and Harms

The Task force postulates that standing order interventions have the potential to improve the efficiency and flow of patient care in busy inpatient and outpatient care settings. No evidence of harm was identified.

Economic Evidence

Three U.S. studies that evaluated the economics of standing orders for pneumococcal, influenza, and Tdap vaccines were included in the economic review (search period 1980–2012). All monetary values are reported in 2013 U.S. dollars. Intervention groups had a median size of 11,813 clients (IQR: 1068 to 24,266, 3 studies). The median cost per person per year to implement the intervention was \$5.55 (IQR: \$5 to \$13, 3 studies), and the median cost per additional vaccinated person was \$29 (IQR: \$18 to \$63, 3 studies).

Considerations for Implementation

One paper from the updated search period described the following barriers encountered during implementation of a pneumococcal vaccination standing orders program in three hospitals: gaps in staff education and training; personnel concerns about additional workload; staff reluctance to administer vaccines without a physician's order; attending physicians' resistance to having hospitalized patients vaccinated; and logistical difficulties. Some attending physicians expressed concern that vaccination would interfere with scheduled treatments or procedures. Other attending physicians did not consider inpatient stays to be an appropriate time for vaccinations (Middleton et al. 2005).

An additional study reported barriers to implementation of influenza and pneumococcal vaccination standing orders in various health care settings. Findings suggested that the adoption of these policies may have been too difficult to administer, staff were unclear or unconvinced of program benefits, and there was perceived physician discomfort with delegating responsibility for immunizations to nursing staff. A few of the respondents also indicated that resources, effectiveness of the vaccine, and time required to administer the vaccine were barriers for adoption. The majority of these barriers were specific to the administration of the influenza vaccine (Goldstein et al. 2005).

Evidence Gaps

Standing orders were shown to be effective in increasing vaccination rates for influenza and pneumococcal vaccines. Additional research is needed, however, to determine if these interventions are effective for different vaccines (e.g. hepatitis, tetanus and vaccines recommended for adolescents). More evidence is also needed on ways to address barriers to the implementation of standing orders in health systems.

The data presented here are preliminary and are subject to change as the systematic review goes through the scientific peer review process.

References

- Goldstein AO, Kincade JE, Resnick JE, Gamble G, Bearman RS. Policies to increase influenza and pneumococcal immunizations in chronically ill and institutionalized settings. *American Journal of Infection Control* 2005;33(8):463-8.
- Middleton DB, Fox DE, Nowalk MP, et al. Overcoming barriers to establishing an inpatient vaccination program for pneumococcus using standing orders. *Infection Control and Hospital Epidemiology* 2005;26(11):874-81.

Disclaimer

The findings and conclusions on this page are those of the Community Preventive Services Task Force and do not necessarily represent those of CDC. Task Force evidence-based recommendations are not mandates for compliance or spending. Instead, they

provide information and options for decision makers and stakeholders to consider when determining which programs, services, and policies best meet the needs, preferences, available resources, and constraints of their constituents.

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