



BEST PRACTICES IN HOSPITAL IMMUNIZATION

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BACKGROUND

The medical literature provides a wide range of immunization practice recommendations in the hospital setting. However, there is not one resource that reviews best vaccination practices in this important area of patient care.

OBJECTIVES

This poster compiles best immunization practices in the hospital setting. System-, vaccine-, disease-, patient- and healthcare worker (HCW) specific issues are addressed. Also, logistical issues including handling and storage and financial considerations will be presented. Key recommendations will be provided.

METHODS

A literature review was conducted using PubMed, Google Scholar and IPA databases. The following keywords were used: “standing order”, “pre-printed order”, “physician reminders”, “inpatient”, “hospital”, “children”, “immunocompromised”, Hep B, “pneumococcal vaccine”, “influenza vaccine”, “sickle cell disease”, “pre- and post-op” and “vaccination”. The search was limited to publications after 2000. Government and other official websites were also reviewed and referenced for pertinent information. Websites were considered reliable by assessment of the currency, depth and accuracy of the information by the “co-authors”, who are immunization trainers. Opinions of healthcare practitioners in hospital settings and from immunization experts were also collected. The data were synthesized and categorized as health system infrastructure components or patient care processes (administer, recommend, administer or refer, document and report).

RESULTS

Table 1. Health System Infrastructure Components

Component	Responsibility
Administrative support	Provide resources and foster an environment which promotes preventative health; establish a system with a culture of assessing, recommending, administering or referring and documenting and reporting immunization; delegating responsibility and authority to ASP.
Multidisciplinary team	Administrators, physicians, nurse practitioners, physician assistants, nurses, pharmacists, informatics specialists; develop policies, procedures, and standing orders for vaccine administration.
Immunization champion	Advocate for advancing immunization practices; responsible for education, training, and coordination of quality improvement efforts.
Quality assurance	Routinely assess effectiveness and safety of immunization practices; establish, maintain and improve a reporting system.

RESULTS

Table 1. Health System Infrastructure Components (Cont.)

Information technology	IT has the potential to minimize expenditure of health care resources while optimizing vaccination rates. Employ clinical decision support software to consistently identify health, age, lifestyle and other factors necessary for immunization decisions; IT may also be used to document education (VIS), log vaccine data, report to state IIS, and report quality measures.
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ASP, antimicrobial stewardship program; IT, information technology; VIS, vaccine information statement; IIS, immunization information systems

Table 2. Best Practices in Hospitalized Patients and Hospital Health Care Worker Immunization

Assess

- Establish a protocol as part of a SOP to consistently assess vaccination status of all hospitalized patients and HCW.
 - Adults/HCW – Hepatitis B, HPV, Influenza, Meningococcal, Pneumococcal, Tdap, Varicella and Zoster.
 - Adolescents – Influenza, HPV, Meningococcal, Pneumococcal, Tdap, Hepatitis A & B; MMR and Varicella.
 - Children – Influenza, Pneumococcal, Hepatitis A & B, Polio, Rotavirus, MMR, Hib, Varicella and DTaP.
- Develop a policy and procedure to review immunization history and provide recommended vaccines to all HCW employees.
 - Address beliefs, provide education, training and easy access to vaccines.
 - Consider moral, ethical and legal implications of policy and procedure (e.g. consequences for refusal of vaccination).
- Review state IIS for vaccination history of HCW or patients.
- Assess all hospitalized patients for vaccine indication using screening tools such as HALO; incorporate as part of the clinical decision support software.
 - Consider new diagnosis when assessing individual’s immunization needs.
- Establish SOPs for patients with specific needs (e.g. foreign born, patients with sickle cell, pre- and post-op, immunocompromised patients, cocooning).

Recommend

- All health care professionals should offer a strong recommendation for vaccination of hospitalized patients, when indicated.
 - The larger the number of stakeholders recommending vaccination, the more effective the immunization neighborhood.
- Educate hospitalized patients with high risk conditions about the importance of being protected against VPDs.
- Provide the patient with the information listed below:
 - Explain why the vaccine is important considering patient’s HALO.
 - Share your own personal experience to highlight benefits of, and boost confidence in, vaccines.
 - Address patient’s/care giver’s questions, concerns and/or beliefs.
 - Remind patients that adult VPDs are present in our communities and vaccination offers protection.
 - Describe the costs and impact of the illness associated with VPDs.

RESULTS

Table 2. Best Practices in Hospitalized Patients and Hospital Health Care Worker Immunization (continued)

Administer or Refer

- Generate a list of vaccines to administer to hospitalized patients.
- Administer vaccine to hospitalized patients with indications for vaccination.
 - Develop a policy and procedure to refer patients who require vaccines not available in the hospital.
- All HCW should be vaccinated according to the most recent ACIP/CDC guidelines.
 - Health systems should offer vaccines at no cost to HCW.
- Consider establishing an immunization clinic to administer vaccines to family and friends of patients with high risk conditions.
- The use of written or electronic prescriptions on discharge may be more effective than an oral recommendation.
- Develop standard protocols for storage, handling, and administration of vaccines
- Institute protocols to manage, document and report severe adverse reactions
- Obtain patient consent and distribute VIS to all hospitalized patients prior to vaccination.
- Immunization reminder-recall systems are cost-effective methods to identify and notify patients when vaccine is indicated.
 - Reminder-recall methods include phone calls, auto-dialers, mail reminder cards/letters, text messages, and patient portals.

Document and Report

- Document all vaccine administration in the patient’s medical record immediately following vaccination.
 - Date of administration.
 - Vaccine manufacturer and lot number.
 - Name, address, signature and title of the vaccinator.
 - The date of publication of the VIS given to the patient.
 - The date the VIS was given to the patient.
- Report immunization of hospitalized patients and HCW to the state IIS.
- Provide patients with own vaccine record, particularly if not reporting to IIS.
- Report any adverse reactions to VAERS.

SOP, standing order program; HCW, health care worker; HPV, human papilloma virus; Tdap, tetanus, diphtheria, acellular pertussis; MMR, measles, mumps, rubella; Hib, *Haemophilus influenzae* type B; DTaP, diphtheria, tetanus, acellular pertussis, VPD, vaccine preventable diseases; HALO (Health, Age, Lifestyle, Occupational and other factors); P&T, pharmacy and therapeutics; ACIP, Advisory Committee on Immunization Practices; CDC, Centers for Disease Control and Prevention; VIS, vaccine information sheet; IIS, immunization information systems; VAERS, vaccine adverse effects reporting system.

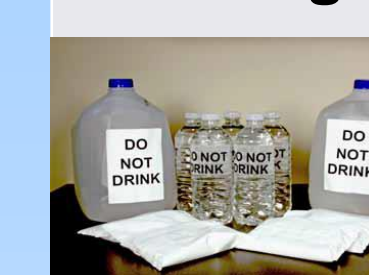


RESULTS

Table 3. Handling & Storage and Financial Considerations

Logistics

Storage & Handling



Financial



Considerations

- Check and log refrigerator temperatures at least twice daily.
- Unpack and store vaccines immediately.
- Replace crisper bins with water bottles (labeled “Do not drink”) to maintain consistent temperature.
- Leave 2-3 inches between vaccine containers and refrigerator walls. Do not store vaccines in the door or floor of the refrigerator or use dormitory-style refrigerators.
- Use a safety-lock plug or an outlet cover to prevent unplugging power supply.
- Post warning signs at plugs and on storage units alerting staff, custodians, electricians or other workers not to unplug units.
- Storage units should be equipped with alarms to alert staff when temperatures are moving out of safe range.
- Backup generators should be available and off-site storage units ready to accept vaccine inventory if power interrupted for extended period.
- Proper aseptic technique.
- Account for direct and indirect cost; Administration fee (time to educate, following safety, ensuring required documentation).
- Smart purchasing (order from manufacturer not a distributor, invest in group purchasing, avoid over purchasing).
- Accurate inventory system including manual inventory.
- Policies for handling and storage of new inventory (assign an employee, contingency plan, color-coded bins in refrigerator).
- Reduce waste (obtain consent before withdrawing dose, training to minimize accidental breakage).

SUMMARY

- Establishing a robust hospital immunization program with a culture of accountability for assessing, recommending, administering or referring and documenting and reporting, is essential to an effective antimicrobial stewardship program.
- Educating HCW and hospitalized patients, and addressing beliefs about immunization are important.
- SOPs are cost effective and increase vaccination rates in hospitalized patients.
- Information technology has the potential to minimize expenditure of health care resources while optimizing vaccination rates, improving IIS documentation and reporting quality measures.
- Immunizing HCW and hospitalized patients improves vaccination rates of the larger community.