Best Practices in Hospital Immunization!

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Purpose: 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. Thus, this poster attempts to compile best immunization practices in the hospital setting.

Design: Literature review was conducted using PubMed, Google Scholar and IPA databases. The following keywords or terms 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 between 2000-2016. Governmental 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 and validity was verified by the "co-authors", who are immunization trainers. Opinions of healthcare practitioners in hospital settings and from immunization experts were also collected.

Findings: Recommendations and benefits of proven immunization practices in the hospital based on patient age, gender, specific medical conditions, immune system status, and pre-op / post-op status will be presented. In addition, best practices in immunization of hospital healthcare providers and in handling and storage of vaccines in the hospital setting are presented.

Implications: The findings emphasize the important role trained healthcare providers can play in providing and promoting immunization assessment and recommendations in the hospital setting, and in administering vaccines. Standing order programs based on best practices are crucial to this effort.

BEST PRACTICES IN HOSPITAL IMMUNIZATION

SYSTEM

- Identify the Goal: Vaccinate at risk patients
- Address attitudes/beliefs towards inpatient vaccination
- Multidisciplinary team (physicians, ER physicians, nursing, pharmacists, NP, information system specialists (ISS)/informatics
- Evaluate existing program, physician reminder programs; rates, barriers, etc. (prescribing step; dispensing step; administration step)
- Address immunization as part of an antimicrobial stewardship program
- Establish SOP, pharmacy driven???
- Careful planning between all involved (nursing, pharmacists, pharmacy technicians/students
- Define responsibilities; early screening
- Define criteria for each vaccination/ (patient afebrile, etc.);
- Educate practitioners on indication, contraindication (ACIP recommendations), vaccine safety, handling and storage, patients with unknown vaccination status, importance of vaccination in inpatient setting
- Use of technology/work closely with ISS
- Get approval from the P&T and formalize/approve a policy for the vaccine program
- System to notify primary care physician of the vaccination
- Indicators of quality: Vaccination rates (threshold 90%), percentage of omitted doses (zero tolerance for error); immunization champion to monitor progress and adherence
- **SOP:**
    - Educate the patient, provide VIS before vaccination
        - Patient education by pharmacist or pharmacy intern showed a trend toward increased pneumococcal and influenza vaccination acceptance rates for inpatients who had initially declined
    - Vaccine admin date and time
    - Parameters for IM or SQ admin
    - Day 2 of admission to allow time for screening, obtain consent, writing orders, allowing physician to cancel the order if they chose, delivering the vaccine, to the unit, educate patient, order to state administer now and stays active until the vaccine is administered
    - Compliance system with the documentation requirements for vaccine/electronic charting (date, time of administration, site, initial, refusal and prior vaccination, vaccine manufacturer and lot number with the publication date)
    - Vaccine kit (vaccine CDC VIS, wallet card for the patient to document)

VACCINE SPECIFIC

Vaccine	Health	Age	Lifestyle	Occupation	Gender	Special Situations
Hepatitis B		Infants				Single women more likely to have an infant not vaccinated. Minority women were less likely to have an infant who lacked Hep B at hospital discharge than Caucasian women.
Pneumococcal	PPSV 23 without PCV13): acute diabetes, post MI, COPD, CHF, as well as conditions with immune compromise.	50 y/o or older >=2 y/o at increased risk of pneumococcal disease Only if clearly indicated for pregnant women Caution with nursing woman				Not effective in patients with chronic CSF leakage. Treat injection site for pain/swelling/induration
Influenza		>6 months with no contraindication to the vaccine				Data supports vaccinating surgical inpatients against influenza Standing order programs (SOP) are more effective than education programs and physician reminders in offering and administering influenza and pneumococcal vaccines to hospitalized patients.
Other						

PATIENT SPECIFIC

- Foreign born patients (e.g. Rubella)
- Vaccination disparities/access/Insurance issues
- Vaccination rates for patients with sickle cell disease is poor. Implementing a SOP for this patient population may improve infectious disease-related outcomes for this population.
- Hospital initiation of a vaccine schedule improves long-term vaccine coverage of ex-preterm children.
- Pre-op and evaluation of hepatitis B and improved vaccination.
- Pre-p and Post-operative vaccination

    - No strong evidence of increased risk for adverse outcomes was found in comparisons of patients who received influenza vaccine during a surgical hospitalization and those who did not. The data support the recommendation to vaccinate surgical inpatients against influenza
- Children/adolescents:
    - Obtain immunization records
    - Determine immunization status
    - Inform parent/guardian if catch-up dose (s)
    - HPV (Dose 1); Varicella Zoster (dose 2) and meningococcal conjugate vaccine were the most commonly identified dose (s) needed.
    - Resulted in improved immunization status
    - Therefore, inpatient setting maybe used with other national strategies to help address missed vaccination opportunities
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HCW SPECIFIC

- Nationally, uptake among hospital HCWs was less than 20% prior to 2014.
- Address beliefs about VPD
- Non-vaccinated HCW show higher tendency for laboratory-proven influenza than the vaccinated HCW
- Education is needed to improve compliance of HCP and addressing personal beliefs and habits
- Compulsory vaccination policies with appropriate weighing and managing the moral, ethical and legal implications with implementing them
- Employee services

BEST PRACTICES IN HANDLING AND STORAGE

WHAT IS NEEDED FOR INCREASE UPTAKE?

Expanded authorization of Standing Order Programs

Save patient and physician time; increase capacity of non-physicians to deliver vaccinations, promote vaccination in readily accessible community settings, support patients who have limited access to health care.

Standardization for inpatient settings with legal foundation for SOPs.

Take a Stand: national program developed by the IAC in partnership with Pfizer aimed at boosting adult immunization rates through increased utilization of standing orders in medical practices.

Pharmacists:

(states with laws permitting pharmacists to prescribe vaccines: 5 has delegated authority to RPh, 3 allow under own authority, 1 state prohibit (South Dakota), No laws in NE.

(states with laws permitting pharmacists to assess patient vaccination status: 3 has delegated authority to RPh, 2 allow under own authority). No laws in NE.

(states with laws permitting pharmacists to administer vaccines: 42 has delegated authority to RPh to administer vaccines, 14 allow under own authority). No laws in NE.

Very Important service, very likely prevent an illness down the road.

BEST PRACTICES IN FINANCIAL ISSUES

- SOP are more cost effective and increase vaccination rates in hospitalized elderly patients
- Account for direct and indirect costs
- Vaccine for children program is federally funded but controlled by individual state, still has cost.
- Cost Include:
    - Personnel cost
    - Storage
    - Insurance against loss
    - Allowance for waste and nonpayment
    - Expense for funds tied up in inventory

It is recommended to charge 125% of current CDC vaccine price list in the private sector.

Administration fee:

- Time to educate
- Follow safety
- Documentation in chart and state vaccine registrar

Best Practices:

1. Smart Purchasing:
    a. Order from manufacturer not a distributor,
    b. invest in group purchasing,
    c. Avoid over purchasing by working with a distributor that can promise a fast delivery time if practice needs to order more
2. Accurate Inventory
    a. No electronic system that capture all required infor to distinguish between VFC program and privately purchased
    b. Manual inventory system is needed
3. Account for products that need to be unpacked and placed in refrigerator or freezer right away.
    a. Assign one employee for managing vaccine but also a contingency plan
    b. Have a contingency plan
    c. Color-coded bins in refrigerator/freezer
4. Reduce waste: 5% estimated waste is not uncommon
    a. Accidental breakage
    b. Parent or patient refusal once the vaccine is withdrawn
    Get confirmation first before w/d dose.

- I reviewed the CDC and ACIP websites and did not find any recommendations specific to hospital practice. Maybe I am looking in the wrong place. If there are no recommendations
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