

KU Pediatrics Immunization Program

Improving Vaccine Delivery

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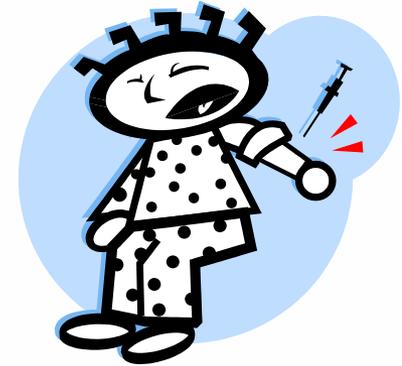
Preventative Health Coordinator

KU Pediatrics

The Basics

- Routine vaccination against 14 diseases
- Recommended vaccination against 2 additional diseases.
- Follow annual CDC,ACIP and AAP guidelines
- Participate in Vaccine For Children Program
- MOBI site(Maximizing Office Based Immunizations)
- Routine CO CASA/AFIX reports
- Developed several systems to achieve maximum immunization rates
- Participate in State Registry (WebIZ)

The Numbers



Calendar Year 2010

- KU Campus Clinic

- **4,129** patients received at least 1 vaccine
 - 82% were VFC eligible
 - 18% had Private insurance or were over the age of 19.
- **16,025** individual vaccines were administered.

- Prairie Village Clinic

- **1,665** patients received at least 1 vaccine
 - 78% were VFC eligible
 - 22% had Private insurance or were over the age of 19
- **5,632** individual vaccines were administered

The numbers

What does it Cost?



- Vaccines are expensive!
 - Complete vaccination per ACIP guidelines
 - \$2400 of vaccines during their first 18 years
 - \$1270 of that is within the first 2 years
 - At KU Pediatrics, our monthly costs are about \$100,000.
 - Annual costs are > \$1,000,000 (This DOES NOT include flu vaccine)
- Per VFC recommendations we maintain 2-3 month supply on hand at all times to insure we can vaccinate during times of
 - manufacturer or distributor back orders
 - shipping delays
 - during increased volume due to seasonality such as back to school or new recommendations.

The Numbers: a Practice can Make Money

- Administration fees charged vs. collected
- New Coding by Component
- Combination vaccines
- Streamline costs/use free resources
- Decrease wastage

Clinic Staff-They are Key



You Are The KEY



- To the health of your patients:
 - Children, adolescents and adults
 - A safe and healthy community
 - Financial Health of the Country

- To the Success of your Clinic--
 - Best in Care, Every Patient, Every Visit
 - Efficient delivery of care
 - Increased Provider and Patient satisfaction
 - Education of Residents

Immunizations: Skill & Art

- Knowledge
- Rapport with Patient/Family/Provider
- Effective Communication
 - What/Why/When/How are you giving immunizations?
- Providing Reassurance and Comfort
- Working Safely/Efficiently
- Documenting Correctly
- Initiating workflow improvements

KU Pediatrics Vaccine Orders

- Our Nurses are the Experts
- Follow Standing Orders-Allows vaccines to be given at anytime during the visit.
- Communication with Providers, Residents and Parents is Essential
- Double check your resources and with the Provider if there are any questions, problems or concerns
 - interval questions
 - parent concerns or refusals
 - catch up schedules
 - lack of historical documentation
- Make sure all documentation matches
 - standing Orders match what Provider writes in the note
 - billing matches the actual administered vaccine
 - consent matches orders
 - provide parent with current copy of vaccine record

KU Pediatrics Standing Orders: Ages and Vaccines

Birth- Hep B

2 month- Dtap, IPV, Hep B, Hib, PCV 13, Rotavirus

4 month- Dtap, IPV, Hib, PCV 13, Rotavirus

6 month- Dtap, IPV, Hep B, Hib, PCV 13, Rotavirus

12 Month- MMR, Varicella, PCV 13

15 month- Dtap, Hib, Hep A

18 Month- Hep A if not previously given at 15 month visit

24 Month- Hep A

4 to 5 yrs- Dtap, IPV, MMR, Varicella

11 to 12 yrs- Tdap, Menactra, HPV

16 years- Menactra

All children 6 months and older- Seasonal Flu

33 Vaccination, 21 Injections (plus influenza)

Goals, projects, and Resources



Goals of KU Pediatrics Immunization Program

1. Vaccinate and protect 100% of our eligible patient population against all Vaccine Preventable Diseases as recommended for the USA by ACIP and CDC guidelines
2. Meet the above goal with maximum accuracy and efficiency
3. Educate our Clinic staff and Pediatric Residents on the importance of vaccination and vaccine accuracy
4. Educate parents, patients, and community partners on the importance of vaccinations
5. Meet all State, Federal and Internal guidelines for reporting and documentation of vaccines
6. Establish Policy and Procedures for all aspects of the vaccine program

Current projects

- Writing Policy and Procedures
- Employee Training
- Grant writing specific to vaccine outreach
- WebIZ Interface with EMR
- Adult TDAP Project
- Flu Vaccine Coverage for Patients, Parents and Employees

Resources

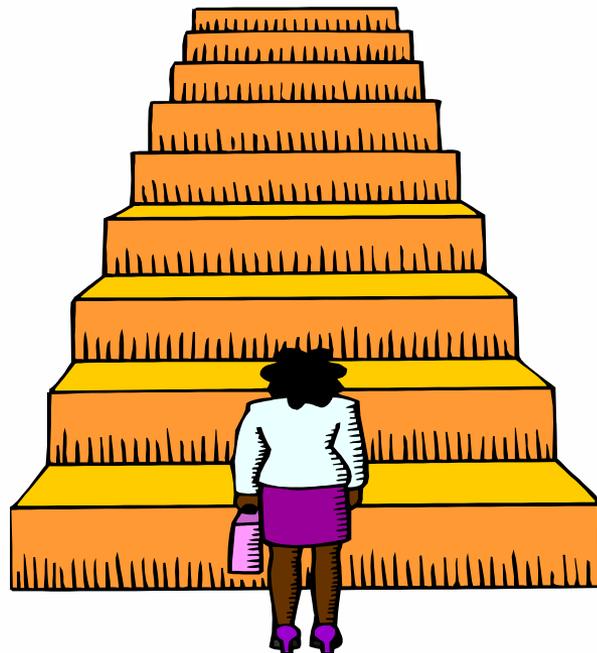
- Use all that are available and reliable
 - VFC
 - MOBI
 - CDC
 - Immunize.org

Vaccines For Children Program

All recommended childhood immunizations are provided to participating providers at no cost to vaccinate children under age 19 who are on Medicaid, Healthwave, or who are uninsured. This is a key program to our success and to improving vaccine rates for all children.

- KU Pediatrics participates in the Kansas VFC program.
- Annual contractual agreement per individual site (KU Peds currently has 3)
- Monthly Inventory Reconciliations and monthly temperature log submissions.
- Annual site visit, AFIX reports and chart review.
- 1000+ immunizations per month through VFC
- Benefits of this program
 - “free” vaccine to provide to eligible children
 - many educational support materials and resources.

Steps to reach the goals



Maximizing efficiency

Currently using immunization only nursing staff to provide all immunizations per standing orders during the clinic day.

- Goal of 1-2 Nurses providing all the immunizations for all Providers during clinic day.
- Allows Nurses to spend additional quality time achieving their assigned tasks.
- Standing orders decreases wait times
- Standardized process allows for decreased errors and complete quality care to all patients
- More individual accountability with possible errors for vaccine counts.

Maximizing Accuracy

Set Policy and Procedure designed to decrease errors, increase patient safety, and increase accuracy of vaccinations given.

- Set guidelines for “Comforting Restraint”
- Review of Immunization records at every visit
- Use of Registry system for most up to date information and complete accurate documentation
- Initial, probationary, and annual skills competency check off
- Immunization Manual and multiple additional resources for information for staff, Providers and parents
- Program design following ACIP, CDC, and AAP approved guidelines

Comprehensive orientation/training

Orientation and training is comprehensive and standardized for each clinic staff person who will be giving immunizations.

- Multiple instructional modalities to insure all types of learners get what they need.
- Standardized Skills Checklist used for each nurse with self assessment and supervisor check-off piece.
- Checklist completed
 - at time of hire
 - at approximately 90 days
 - annually.
- Preventative Health Coordinator responsible for
 - all new hire training
 - re-orientations as needed
 - frequent routine training of all staff to keep them up-to-date on current issues.
- Standardized processes in-place to insure best care every patient every visit.
- Pre and post test of overall immunization knowledge recently developed and in the process of being implemented.



Documentation

Accurate and complete documentation of immunizations administered to patients is vital to the success of an immunization program. While all medical documentation is vital documentation of vaccines can become cumbersome with all of the details required for accuracy.



- KU Pediatrics uses Kansas WebIZ to do all documentation of all vaccines administered.
- Kansas WebIZ is a statewide birth to death web-based immunization registry.
 - Electronic data entry of all the vital components of vaccine documentation.
 - Generates required forms, required reports and manage inventory issues for all vaccines.
 - Secure system
 - User ID
 - Pin Numbers
 - RSA tokens that change pass code every 60 seconds
 - The WebIZ system is currently being used by
 - all Kansas Health Departments
 - 160+ private vaccine providers
 - 67% of all Kansas VFC providers
 - multiple Kansas School Districts
 - Contains records of 1.8 million Kansans

Documentation

So as shown with our quick working overview WebIZ streamlines a complex set of requirements and features to be able to accurately, efficiently and effectively manage a large immunization practice.

- Individual patient documentation and consent
- State and Federal documentation requirements met
- Practice, school, daycare and VFC forms generated with minimal if any handwritten documentation needed
- VFC Monthly and annual reporting generated all from 1 system

“DownTime” Documentation

As with all things electronic there may be times of “technical difficulty” that will require the Nurse to revert to temporary “paper” documentation



- During “downtime” of the electronic system the nurse will do complete hand written documentation of all required fields for vaccines.
- A standard “paper consent” is provided by the Kansas Immunization Program.
- A paper “pink card” will also be completed to provide to Parent/Patient
- The Nurse will “back enter” the information into the electronic system when next available.

VIS- Vaccine Information Sheet

- Required By Federal Law
- Recommended prior to vaccine Administration (at check in currently)
- Updated as vaccine or recommendation changes
- Provided free from Kansas Immunization Program in English and Spanish
- Multiple other languages and recorded available at Immunize.Org
- Include info on What, Why, When, and What if.
- Nurse should know the basics of the information contained in the VIS and be able to answer questions asked by the parents or patients.

Parents Who Question Vaccines

- Establish an Office Policy
- Educate your Nurses and your Providers
- Educate your Patients/Parents with good resources and take your time.
- Immunize.org has great **FREE** multi-language resources

Safe and Efficient Vaccine Administration

The goal of vaccine administration is to provide the best in care to every patient every visit. Vaccines safely and efficiently and accurately is key to any Pediatric Practice as every patient will get vaccines at most visits.

- **Safety**
 - Comforting Restraint
 - 2 patient identifiers
 - Safety syringes
 - Detail oriented and effective communication
- **Efficiency**
 - Know your schedule and your standing orders
 - Know your resources
 - Communicate with your Providers, your peers and your patients
- **Accuracy**
 - Triple check your work
 - Document completely
 - Ask questions if needed
 - Complete trainings and vaccine related CEU

Vaccine Storage and Handling

- Written Plan for Routine and Emergency Use
 - Immunization Manual
 - Posted in Nurses Station
 - Posted on the Refrigerators

- Written Waste Reporting Protocol
 - Immunization Manual
 - Posted on the Refrigerators

Vaccine Reactions

As with any medication there is a chance for a reaction from mild to severe.

- **Emergency Medical Protocol**
 - Posted on the Refrigerator
 - In the Immunization Manual
- **Know the possible reactions to each vaccine and what to do if they occur**
 - Local-redness, pain, swelling (avoidable with proper route)
 - Systemic-fever, fussy, rash
 - KNOW WHERE YOUR SUPPLIES ARE IN YOUR CLINIC
- **Information available for Nurse and Parent in the VIS**
- **VIS Guidance**
 - What to expect
 - What is unusual and what to do

Vaccine Administration

- Standing Orders
- Follow Recommended Schedule
- Right Patient
- Right Vaccine and diluent
- Right dose
- Right Route
- Right site
- Right needle size



Right Patient

- Have the Parent/Patient Identify themselves by 2 documented identifiers
 - Full Name
 - DOB
- “Please tell me your child’s name and birthday”
- Check your documentation/consent form for accuracy.

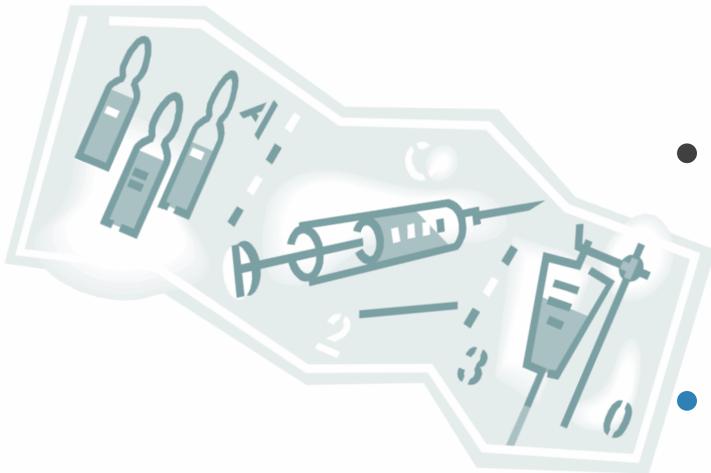


Right Vaccine and Diluent



- Follow Standing Orders
- Check vial and diluent 3 times prior to drawing up
- Use only manufacturer provided diluent
- Label each syringe
- Check again prior to administration

Vaccines and Diluents



- Pentacel-vials in pairs in the box must be mixed together to contain all 3 components of DTaP-HIB and IPV
- ActHib-vials in pairs in the box
- Rotarix- diluent in oral syringe kept at room temp.
- MMR and Varicella- single dose sterile water at room temp
- **NO HOME BREWS THEY DO NOT WORK**

Right Vaccine

This includes the right vaccine from the proper inventory determined by VFC eligibility, the right vaccine within proper age and intervals, and the right vaccine for any true contraindications.

- **VFC vs. Private Insurance**

- VFC Eligibility must be screened and documented every visit in which vaccines will be administered.
- VFC vaccine may only be given to a child under age 19 who is:
 - ❑ Uninsured
 - ❑ Kansas Medicaid or Kansas Healthwave (Unicare or FHP)
 - ❑ Native Alaskan or American Indian.

- **Age and Interval requirements**

- Minimum age and interval requirements must be met

- **Contraindications**

- Screening for contraindications needs to be done prior to each visit requiring vaccines. A list of true contraindications are available.

Right Dose

Most vaccines in stock are in single dose vials. Exceptions are Multi dose vial polio and Seasonal Flu.

- Polio is currently only available in a Multidose vial. The dose is 0.5ml.
- Seasonal Flu is also available in a Multidose vial. Each flu season an algorithm is published to determine dose. (TRIPLE CHECK YOUR WORK)
- Again the dose is only correct if when needed to be reconstituted it is done with the correct diluent.

Right Route

Vaccines are available for injection, oral and nasal

- Know the correct route for each vaccine.
- Most injectable is IM
 - MMR, MMRV, Varicella, Adult prep Meningococcal are SC
 - IPV is either IM or SC
- Both Brands of Rotavirus are oral (no re-dosing if spit out or spit up)
- Seasonal Flu is currently available injectable, nasal and intradermal.

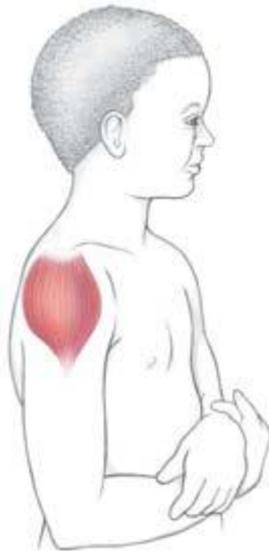
Right Site

- All children birth thru age 3 years the correct site is bilateral vastus lateralis for IM injections



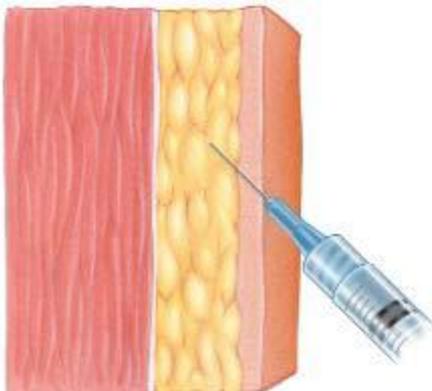
Right site

- Children age 4 and over and Adults the correct site is bilateral deltoids for IM injections



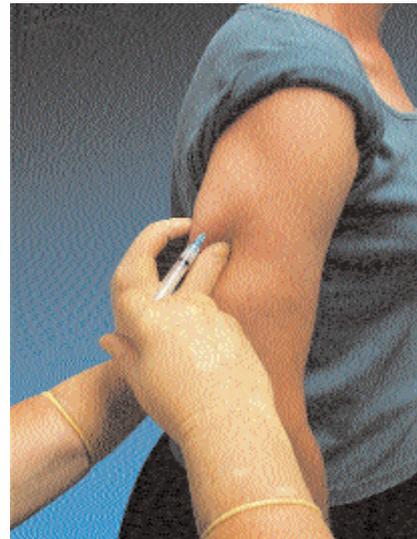
Right Site

- All children age birth thru age 3 years the correct site for SC injections is bilateral Anterior Lateral Thigh.
- This is achieved by pinching up the fatty area and injecting at a 45 degree angle



Right Site

- Children and Adults 4 years and older the correct site for SC injections is bilateral Posterior Upper Arms



Right site

When choosing sites you must consider age, muscle mass and any potential limitations to the site such as deformity or medical equipment such as shunts or long term intravenous lines. Just number of injections is NOT a reason to delay vaccines.

- In general all *needed* vaccines may be given simultaneously with out regard to the NUMBER of injections.

Giving All the Doses 12 Months and Older

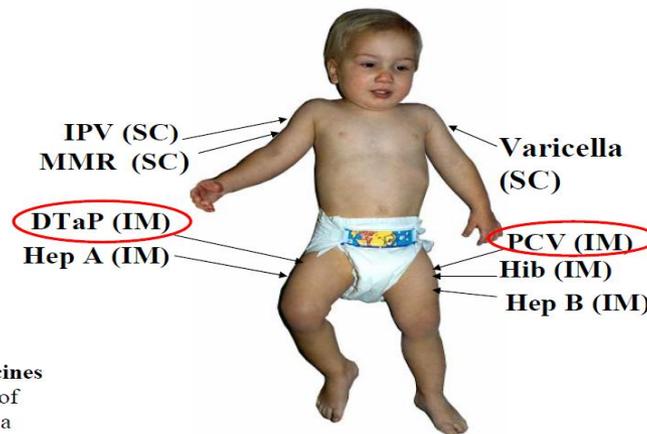
- Needle Lengths
IM=1 to 1.5 inches
SC=5/8 inch

- Separate injection sites by 1-2 inches

- Anterolateral thigh is the **preferred** site for multiple IM injections

- Deltoid (upper arm) is an option for IM in children ≥ 18 mo with adequate muscle mass

- Using **combination vaccines** will decrease the number of injections needed to keep a child up-to-date



Right Needle Size

It is important to place IM recommended vaccines in the muscle and SC recommended vaccines in the subcutaneous tissue. This is due to immunogenicity and localized reaction potential.

- All IM vaccines are to be given with a 25 gauge 1 inch needle.
- All SC vaccines are to be given with a 25 gauge 5/8th inch needle.
- **THE EXCEPTION** is NICU infants with low birth weight and minimal muscle mass. It is then a nursing judgment if the smaller needle length is needed.

**Who will do all
this??????**



Vaccine Program Management

Due to the volume of vaccines administered and the volume of patient served, KU Pediatrics have chosen to have a dedicated Preventative Health Coordinator. This was created as a dual role. Vaccine Program Management and Community Outreach. This role has improved the vaccine program

- Preventative Health Coordinator
 - Manages all aspects of the Vaccine Program
 - ❖ Manages all vaccine inventory, both Private and VFC
 - ❖ Coordinates all reporting and contractual requirements for State, Federal and individual insurance companies
 - ❖ Developed and conducts comprehensive training and orientation program for all new and existing clinic staff.
 - ❖ Updates Providers and Residents of changes and up dates in the vaccine schedules.
 - ❖ Works directly with staff for troubleshooting and problem solving for WebIZ, minimum interval issues, and parent questions or concerns.
 - ❖ Coordination of improvement projects to reach goal of 100% immunization rates including reminder recall initiations and community outreach projects.

Vaccine Program Management

Preventative Health
Coordinator



- Community Outreach Education
 - Provides education and community partnerships to area schools on Preventative Health topics such as immunizations, hand washing, car seat safety, etc.
 - Projects such as “Germ City” and “Kindergarten Round Up”
 - Partnership with Shawnee Mission Headstart Program.
 - Currently developing this portion of the Preventative Health Coordinator role. Future aspects include infant/child CPR training and Certified Car Seat Installation services.

Lessons Learned

- Errors will be made...acknowledge them, problem solve to learn from them and educate all involved including current and future staff
- If one approach fails... try another...each setting may require something different
- One person may not learn the same as the next....educate on an individual basis... for staff and patients
- Insure the details are followed...they can make or break your program
- Details,details,details

Conclusions

KU Pediatrics is on the cusp of excellence in Immunization Practices. Many of the changes that have occurred in the past year have shown an overall improvement in accuracy and efficiency.

Items that have lead to these improvements include:

- 1) Using WeblZ to its full capacity
- 2) Comprehensive Standardized Staff Training
- 3) Becoming a MOBI Office and follow their suggestions
- 4) Initiation of Preventative Health Coordinator Position
- 5) Continuation of VFC Program

The measurable proof that there has been improvement is that in calendar year 2009 KU Pediatrics complete recommended series immunization rates for children 24 months old was 58% as of April of 2011 it was 72% which is currently above the national average.