

A Model Process for Refugee Immunization

University of Louisville Global Health Initiative

Refugee Vaccination Clinic (UL-RVC)



The following document outlines the process used for the provision of immunization for the adult refugee population. Using experiences in Louisville, Kentucky, this document provides a step-by-step handbook for process development, implementation, evaluation, and performance improvement.

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Overview of the Refugee Population in the United States

Every year, more than one million people enter the United States from countries around the world (US Department of Homeland Security, 2011). A majority of these individuals enter as part of immigration pathways where they seek either temporary or permanent residence for family, business, or educational purposes. There are also groups of individuals who enter the US seeking safety from political, religious, economic, or social persecution. These individuals are deemed as “refugees” by the United Nations High Committee for Refugees (UNHCR) and it is estimated that in 2011, there were more than 10 million refugees worldwide (US Department of State, 2013). The US Department of State defines a refugee as someone who has fled from, and cannot return to his or her home country due to “persecution based on religion, nationality, political opinion or membership in a particular social group”, and in 2012 approximately 58,238 refugees entered the US as part of the resettlement process (Department of State, 2013). Upon entry into the US, refugees begin a resettlement process that may place them in almost any state in the country. This influx of individuals and families, both immigrants and refugees, serve to increase the cultural, social and economic makeup of the country.

Refugees Resettling in Kentucky

Resettlement programs are administered through one of three distinct programs; 1) state administered programs; 2) Wilson Fish programs; or 3) via a public-private partnership. In Kentucky, refugee resettlement is a Wilson Fish program and is one of thirteen states using an alternative to traditional state administered resettlements. The Kentucky Office for Refugees (KOR) regulates and oversees the dispersal of federal funds from the federal Office of Refugee

Resettlement (ORR) to Kentucky's four refugee resettlement programs and Catholic Charities of Louisville provides administrative oversight for the programs in Kentucky. According to the Catholic Charities of Louisville, Inc., Kentucky Office for Refugees (CC-KOR), during the calendar years of 2009-2011, a total of 6241 refugees and immigrants arrived in Kentucky as part of the federal resettlement program. A total of 44 nationalities were represented with the majority coming from Burma/Myanmar (25%), Cuba (24%), Bhutan (17%), Iraq (15%) and Somalia (8%). Thirty-seven percent were 0-18 years of age, 61% were 19-64 years of age and 2% were over the age of 64. Refugees arriving in Kentucky were placed in one of four cities: 65% were placed in Louisville; 31% in Bowling Green; 11% in Lexington; and 3% in Owensboro (Kentucky Office of Refugees, personal communication, 2013).

Refugee Health Assessment

As essential element in the resettlement process involves the conducting of a health assessment and a plan for intervention, as needed. Maintenance and compilation of health information that is accurate, complete and accessible for medical providers is a challenge. Upon entry into the resettlement process and before the refugee arrives to their settlement state, one of the last encounters between the refugee and the federal government as they are preparing to enter the US involves a physical examination and health assessment, known as the "overseas medical examination". This examination occurs in the country where the refugee is residing at that time and is performed by a panel physician designated by the local US embassy or consulate. The results of this examination become part of the individual refugee's US entry information and serves as a vital piece of information that is used to identify and address

conditions requiring intervention. The record of this examination is often a paper copy, as no single database exists for housing the results of these examinations. Information provided in this examination typically includes elements provided in a routine physical examination and immunization review. However, it also seeks to identify presence of an infectious disease of importance to the federal government, as well as presence of a mental or behavioral condition that may place others at risk. If one of these conditions is identified, the refugee may be denied entry into the US. Therefore, the findings of the overseas examination are important as they serve as documentation that these conditions of interest, also known as Class A or Class B conditions were not identified upon entry into the resettlement program. These findings are critical for achievement of US citizenship because the information is reviewed during the final pathway to citizenship.

Class A medical conditions preclude a refugee from entering the US. Examples of these conditions include a communicable disease of public health significance; a physical or mental disorder with associated harmful behavior; drug abuse or addiction. Class B medical conditions are defined as “physical or mental abnormalities, diseases, or disabilities serious enough or permanent in nature, as to amount to a substantial departure from normal well-being”. Examples of this condition include human immunodeficiency virus (HIV) infection, asthma and diabetes. (INA, 1990). These conditions do not prevent a refugee from entering the US, but they are important health issues that need to be addressed.

Kentucky Refugee Health Program

Upon arrival into Kentucky, the Kentucky Refugee Health Program (KRHP) works in partnership with local health care providers to improve the health of refugee communities by identifying health care conditions of newly arriving refugees, providing necessary health education to refugees, and expanding access to culturally and linguistically appropriate health care. In addition, protection of the US population is a primary consideration. The KRHP addresses this by: 1) ensuring follow-up (evaluation, treatment and/or referral) of refugees identified as having health conditions of particular importance (e.g., physical, mental, or behavioral, but not deemed as Class A) during the overseas medical exam; 2) identifying persons with communicable diseases of public health importance; 3) identifying personal health conditions that adversely impact effective resettlement; 4) initiating referral for appropriate continuing care, and 5) introducing and integrating the refugee into the US healthcare system, including education and orientation to local health care services. Having access to existing health records (e.g., the overseas medical examination), results from primary care provider visits, results from specialists receiving referrals from the primary care providers, as well as immunization records are important from continuity of care, public health protection, and financial perspectives.

To understand the scope of the health information available for each refugee, elements included in Refugee Health Screening (RHS) provided in Kentucky follow the domestic health screening guidelines outlined by the Centers for Disease Control and Prevention Division of Global Migration and Quarantine (CDC-DGMQ) (CDC,2012). However, additional screening

components may be added in order to facilitate streamlined referral services and access to appropriate care. In Kentucky, health data include a review of the overseas medical exam, a comprehensive psycho-social and medical history and physical exam taking into consideration the migration patterns and trauma experiences of each individual, screening for tuberculosis, hepatitis B, intestinal parasites, syphilis, malaria, HIV, elevated blood lead levels, cholesterol, hearing, vision, gross dental needs, anemia, and an assessment of nutritional status and development. Additional screening tests may also be performed on specific individuals as clinically indicated. Services are provided to refugees by designated RHS clinics contracted with CC-KOR. Once the RHS is complete, refugees are referred for necessary follow-up care to specialists, mental health providers and local health departments, as identified through the RHS. While childhood immunizations are initiated through the RHS, adults are referred to the appropriate health department or a contract agency (e.g., the University of Louisville) for immunizations required by the United States Citizenship and Immigrant Services (USCIS) for the adjustment of status to permanent resident (Green Card). In Louisville, management of the immunization process is performed by the University of Louisville Division of Infectious Diseases Global Health Initiative (UL GHI) with services provided in the UL Refugee Vaccination Clinic (UL-RVC) .

Surveillance of refugee health allows the KRHP to gain a better understanding of the health needs of newly arriving refugees and target education and intervention activities accordingly. In addition, it provides a mechanism to control the spread of disease in communities. Kentucky has direct experience with the importance of refugee health surveillance, and the importance of coordination between the overseas and domestic refugee

health screening processes. In early 2010, two days after the arrival of a Burmese family, the 2-year-old child was transported to a children's hospital 2 hours away, suspected of having measles. The child was subsequently confirmed to have measles. Rapid and comprehensive public health response occurred by the local and state health departments and no further cases were identified. The cost and associated personnel time used to prevent the further spread of measles and care for this child was estimated at \$25,000 (Coleman, 2011). While it is unlikely that this refugee would have received a RHS within 2 days of arrival in Kentucky, this outbreak and subsequent coordination among public health agencies highlights the importance of and need for effective and timely surveillance; access to available health information; coordination of health information; collaborative response, and ability to share data in order to prevent the spread of disease and ensure appropriate health care for newly arriving refugees.

It is clear that refugees resettling in the US experience a full spectrum of healthcare needs including the primary prevention of certain diseases provided through a coordinated immunization process. Prior to 2011, Kentucky's refugees were referred to the local health department for their vaccines. Refugees would often arrive at one of the designated clinics for immunization and need interpreting services. The healthcare provider would often use a language telephone line for those services, but without a scripted process to ensure consistent information both to and from the refugee. This process not only led to variability in that information, but also costs associated with individuals needing interpreting services, and lack of individual records showing vaccines that had been previously received and/or titer results. As the refugee is seeking those vaccines necessary for their green card application, and those requirements involve only a single dose of a series vaccine (e.g., one dose of the two dose MMR

or varicella series), the refugee often failed to complete immunization requiring a series. This failure results in a public health concern. Further, some refugees wait until they are eligible to apply for their green card before beginning the immunization process. This is approximately 8-12 months after arrival in the US and beyond their coverage period for those vaccines to be provided as part of the resettlement process. In Kentucky, Medicaid does not reimburse the cost of MMR, varicella or Tetanus (Td) vaccines, and most refugees are unable to afford the subsequent charges. As refugees are initially assigned housing where there is the potential for large numbers of under- or unimmunized individuals to live in close quarters, usually in the same apartment complexes, the opportunity for vaccine-preventable diseases to emerge and spread is evident. The end product of that faulty process was a service that was costly, inconsistent, lacking in transferrable documentation, and incomplete immunization, and one that represented preventable public health risks. The existing process was not meeting the overall objectives for refugee health and community safety, so steps were taken to redesign the process.

Immunization Program Redesign

In recognition of improvement opportunities, the Kentucky Office of Refugees sought assistance from faculty and staff with the University of Louisville School of Public Health and Information Sciences (UL SPHIS) in order to develop a process for consistent and sustainable gathering of refugee health information and a re-imagining of an immunization process. In early 2011, the UL SPHIS team began development and implementation of a new process to gather and analyze the refugee health information. Results of that analysis demonstrated an

opportunity to redesign the immunization process with the overarching goal of providing and documenting all age appropriate vaccines recommended by CDC for all adult refugees resettling in the Louisville area. These vaccines included: 1) the 3-dose tetanus series [2 doses of Td and 1 dose of tdap]; 2) two doses of MMR; 3) 2 doses of varicella; 4) one dose of influenza; 5) one dose of pneumococcal vaccine, when age appropriate. Not all refugees meet the criteria for all of these vaccines. Vaccines are selected based upon documentation of prior doses, titer results, age, and contraindications.

The process began with an assessment of the existing avenues that refugees might take in obtaining the vaccines indicated for them. Access to services, availability of language interpreting assistance, standard approaches toward informed consent and education, cultural competence and sensitivity, shared documentation, instruction for follow-up, and completion of vaccine series were identified as barriers and challenges to an ideal immunization process. Using results of the assessment, faculty and staff from the UL School of Medicine, Division of Infectious Diseases (formerly of the UL SPHIS) began work on a redesigned process that would involve provision of immunizations at two sites familiar to the refugee population, use of existing health information to guide the individualized immunization plan for each adult refugee, use of scripted information to ensure consistent and complete information and informed consent for each adult refugee, on-site interpretation services for some languages, use of a culturally sensitive process for administration of vaccines, use of human factors engineering to maximize efficiency and eliminate error, and use of an approach that involved a variety of health disciplines including medicine, public health, nursing, and pharmacy.

Project Mission Statement and Objectives

The mission of the project was “to provide access to age appropriate vaccines for all adult refugees resettling in the Louisville area”. The objectives of the project included 1) administration of all age appropriate vaccines for all adult refugees resettling in the Louisville area; 2) completion of all vaccine series that can be accomplished during the eight month refugee resettlement process; 3) documentation of all vaccines administered; 4) maintenance of immunization records in a retrievable database; 5) provision of all vaccine records to the refugee using the international ‘yellow card’ vaccine record with that record being provided to them upon completion of the vaccines for which they are eligible.

The Redesigned Clinic Processes

The initial referral for immunization begins when the refugee has their second health visit at the clinic in Louisville responsible for the refugee health assessment. After that visit, they are provided with an appointment date and time for one of the upcoming immunization clinics with the goal being to get them started in the process as quickly as possible. The refugees are familiar with the immunization clinic locations, as they are located in the same place where English as a Second Language (ESL) classes are provided. They are given a paper with instructions for the immunization process available at one of the two immunization clinic sites. They are also instructed to bring that paperwork with them when they come to the immunization clinic. Appendix A shows this referral/ direction and instruction page provided to each refugee. This process enables the immunization clinic personnel to know that the refugee has started in the health assessment process and their immunization records can be linked to

those entered into the database (REDCap) by the health assessment clinic staff. This provides valuable information such as varicella titer results as well as any vaccines that the refugee may have already received. The RHS clinics fax a list of patient referrals to the immunization clinic staff at the beginning of each week. Immunization clinic staff use this information to pre-fill demographic forms, review overseas medical documentation including records of prior immunization, review laboratory results for contraindications to vaccines as well as presence of immunity identified through titer results (e.g., varicella).

On occasion, a refugee will hear about the immunization clinic and come without having first been seen for a health assessment. If they have evidence of enrollment into the refugee program (e.g., a copy of the refugee insurance card, passport, or I-94 card), they will be seen and immunization initiated.

After it has been verified that the refugee is part of the immunization clinic targeted population, they will be entered into the process. On occasion, a refugee will come to the UL-RVC for immunization after their eligibility in the resettlement program has ended (e.g., more than 8 months of resettlement). Unless there are extenuating circumstances or instructed to immunize by KOR, that individual will be given information regarding the location of a public health clinic where they may be able to access the necessary vaccines.

Getting the clinic started

Using experiences gained from more than fifteen years of workplace immunization program development and implementation, the UL GHI project team began to design a new

immunization process. In planning, a roadmap for immunization, termed the Vaccine Trip Tik, was developed. This document contained demographic information about the individual refugee, questions concerning warnings, precautions, and contraindications to the targeted vaccines, and a documentation form for those vaccines. This form followed the refugee as they received all of their vaccines through this UL process. The Vaccine Trip Tik is included in Appendix B. The entire immunization process is outlined in the section below.

In preparation for the first vaccine to be administered, the work areas need to be arranged. There are four separate areas: the first area is a waiting area where refugees await entry into the interpretation area; the second area is used for the paperwork that needs to be initiated and interpretation of the information and the process for each individual refugee; the third area is where vaccines are administered; and the fourth is the check-out area.

Waiting Area

This space involves placement of chairs so refugees can gather with their groups, by language, and await entry into the language interpretation area. Appointment times were implemented in order to minimize waiting time for the refugees. Grouping the refugees by language also offers an opportunity for the project staff and the refugees to engage in conversation and promote comfort and familiarity. It also represents an opportunity to identify other needs that might be addressed during the immunization process. An example involves questions about medication that a project pharmacist/pharmacy student might be able to address.



Language Interpretation Area

Refugees are seen in groups according to language in order to maximize the time of the in-person interpreters as well as language telephone line time that may need to be purchased. In-person language interpreters generally cost about \$40 per hour and the language telephone line costs about \$1 per minute.

In an effort to standardize information provided and ensure that information is consistently provided to each refugee about the immunization process and contraindications to immunization are identified, scripts were developed and pilot tested for use. Pilot testing allowed the project team to include necessary information that is both understandable and culturally sensitive. These scripts are used with both in-person interpreters and when interpreters are accessed through the language line. Experiments using Skype connections to interpreters have been used, but the connections are not always reliable and there is some signal delay. In-person interpreters are, by far, the more ideal option.

The room is set up with a large table, chairs and a speaker telephone. The project team members sit at the table with the paperwork that need to be completed and the telephone for language line use. Refugees are seated close around the table so they are able to hear the script interpretation and ask questions. The scripts and graphic representations of the areas are included in Appendix C.



In preparation for each immunization clinic UL project team members would gather information regarding refugees who had been told to attend the clinic and initiate or update the Vaccine Trip Tik. At the interpreting sessions, these Vaccine Trip Tiks are matched to the insurance card or referral form for each refugee. During the interpreting process, each refugee is asked specifically about contraindications. The immunization schedule protocol is used by the UL project team so they can complete the Vaccine Trip Tik indicating the vaccines that are to be administered during that visit. Each refugee is then escorted out of the interpreting area and into the immunization area. For the Louisville clinics, the participating refugees have needed interpretation for the following languages: Spanish, Arabic, Nepali, Tigrayn, Oromo, Chin, Karen, Burmese, Kinyarwanda, Kirundi, French, Swahili, Somali, Farsi, Dari, Dinka, Russian, and Amharic.

In the event there is a refugee who wishes to have their vaccines administered privately (e.g., Muslim women), they are taken to an adjacent area and immunization staff bring the vaccines to them.

If there is an opportunity to participate in a vaccine manufacturer's patient assistance program, this interpreting area offers the ideal place to begin that paperwork process. Explanation of the process, obtaining demographic information and signatures, can be done in this area.

Immunization Area

The immunization area is set up while language interpreting is occurring. Recognizing that language barriers exist, the design and flow are centered around patient safety and error-proofing. To that end, the clinic is set up so there is a separate table for each vaccine that can be administered. Vaccines to be administered include tdap, Td, MMR, varicella, influenza, and pneumococcus. After each table is cleaned and disinfected with a hospital-grade disinfectant and allowed to air dry, the table will be setup with the following supplies:

- 1cc syringes
- Safety needles (23 ga 1 inch for intramuscular injection and 25ga 5/8 inch for subcutaneous injection. A small supply of 22 ga 1-1/2 inch needles is also available in the event a larger patient needs that needle length in order to achieve intramuscular injection)
- Sterile alcohol pads
- Band-Aids (latex safe)
- 2x2s (packages)
- Sharps containers (one for each table)
- Alcohol-based hand rub (one for each table)



- Germicidal wipes (quaternary ammonium)
- Individual laminated signs indicating the vaccine to be administered as well as the administration site
- Pre-printed labels with the vaccine name, lot number, and administration site.
- Box of tissue
- Garbage can with liner (placed on the floor by the table)
- Chair for refugee to sit in while vaccines are administered.

Emergency drugs, blood pressure cuff, gloves, and cold drinks and crackers/cookies are also available in the event they are needed.

The laminated signs and preprinted labels are used as a means of standardizing work so process defects/errors can be identified and prevented. Because only one vaccine is provided at each table, this process enables the nurses to administer the vaccines in a consistent site and be aware of indications that a vaccine has already been given. For example, tetanus vaccines are administered in the right deltoid. If the nurse prepares to administer tdap but sees that the patient already has a band aid on the right deltoid, he/she is aware of the need to 'stop the line' and implement an investigation before administering any more vaccines. This process also enables the nurses to respond to refugee questions about an adverse event that may have occurred after the clinic has ended. For example, if the refugee notifies the project staff that

they developed a painful right arm, the staff is able to determine which vaccine was administered at that site.

The refugees are directed from table to table until they have received all of the vaccines noted on their Vaccine Trip Tik. After they receive the last vaccine for that visit, they are directed to the check-out area. As the language barrier exists, each refugee is accompanied or physically directed to the check-out area instead of relying upon verbal instruction that can be misinterpreted or misunderstood.

Staffing the immunization process has been the responsibility of the nurse faculty member leading the project team. In addition, faculty and students from three local schools of nursing have been vitally



important to this process. At each session, at least one student group and their faculty have assisted. The ideal number of students enables two at each table (tdap, Td, influenza, MMR, and varicella). Because pneumococcal vaccines are administered infrequently, based upon the age of the refugee (65 and older), this vaccine is administered on demand and an immunizing individual takes that vaccine directly to the refugee, eliminating the need for a separate table. When it is outside influenza season, no vaccine is available and therefore, so no table is set up for influenza administration.

The immunization process is an ideal area to teach and demonstrate interprofessional collaboration among the health sciences students. To facilitate that process, an orientation session is necessary prior to the participation of any student or faculty member. The

orientation session includes an overview of the refugee population; cultural sensitivity and competence; a review of the Vaccine Trip Tik; description of the vaccines and the necessary cold chain; a review of vaccine administration techniques; safe injection practices; infection prevention and control; patient education; documentation; and emergency response.

Check Out Area

After each vaccine noted on the Vaccine Trip Tik has been administered, the refugee is taken to the check-out area. That area consists of a large table with a portable copier. If needed, an appointment for their next immunization visit is written on the bottom of the Vaccine Trip Tik, and is shown to the refugee. A monthly calendar is available to help the refugee understand their next appointment date. A copy is then made of the refugee's Vaccine Trip Tik along with their refugee insurance or Medicaid card. The original Vaccine Trip Tik is kept and the copy given to the refugee so they are able to share information regarding immunization with other healthcare providers. The refugee is then finished with the process for the day. The check-out area serves as a final verification point to ensure that the Vaccine Trip Tik documentation is complete, a follow-up appointment has been made if needed, and the refugees' questions have been addressed.

Once the refugee has received all of the vaccines able to be provided during their eight month enrollment period, they are provided with an international vaccine record (yellow card) with all vaccines that were administered through this project. They are also provided with information as to where they might go for a Civil Surgeon examination. The ID Division GHI has four designated Civil Surgeons competent to perform their examination for green card

application. For those refugees who elect that option, any vaccines that the refugee may not have received in order to complete their entire series (e.g., their third dose of tetanus vaccine) is provided at the time of the Civil Surgeon exam. More information is provided about that Civil Surgeon examination later in this document.

Vaccines

The age-appropriate vaccines for the adult refugee include a 3-dose tetanus, a 2-dose MMR series, a 2-dose varicella series, and a single dose of influenza vaccine. A single dose of pneumococcal vaccine may be provided to refugees 65 and older. The tetanus series includes one dose of tdap and two doses of Td at 0, 1 and 6 months. When possible, the protocol involves administration of tdap as the first dose of that series. Deviations from that protocol might occur if a dose of tdap was not available at the time, if there was evidence that tdap had already been received, or if the refugee was female and pregnant. In the case of the pregnant female, the tdap dose would be timed so she received that in her late second or third trimester, if feasible. Decisions concerning selection of tdap or Td could be made by UL project staff as they consider individual circumstances. The doses for both tdap and Td is 0.5ml with the injection given intramuscularly in the deltoid, with preference for the right arm. MMR consists of two doses given at least 28 days apart to individuals born after 1956. The dose of 0.5 ml is given subcutaneously in the upper arm with preference for the right arm. This vaccine requires use of a diluent provided by the vaccine manufacturer (Merck). Varicella vaccine consists of two doses given at least 28 days apart. Varicella titers are obtained on all refugees as part of their initial health assessment. Vaccine is not administered to those with serologic immunity. If

the serology is pending, the vaccine is held until results are available. The dose of 0.5 ml is given subcutaneously in the upper arm with preference for the left arm. The vaccine also requires use of a diluent provided by the vaccine manufacturer (Merck). Influenza immunization uses all available administration methods including intramuscular, intradermal and intranasal. For individuals 65 and older, high dose influenza vaccine is administered. Attempts are made to minimize the number of injections that are given to the refugee, so intranasal or intradermal may be used if the refugee is receiving multiple vaccines on a single day, if no contraindications exist (e.g., intranasal FluMist). Pneumococcal vaccine involves use of Prevnar 13 as the UL project team assumes that all recipients are pneumococcal vaccine naive. The dose is 0.5ml given intramuscularly in the deltoid with preference for the left arm. Efforts are made to separate influenza and pneumococcal vaccine by at least 28 days.

Doses are prepared immediately before administration. If it is known that multiple refugees are together in the interpreting area, multiple doses of tdap, Td, and/or influenza may be prepared while waiting for the language interpreting phase to be completed. MMR and varicella are never prepared until immediately prior to administration. To facilitate immunization of multiple refugees, syringes of diluent may be drawn up provided they will be used within the hour. If they are not used within 60 minutes, they are disposed of in the sharps container as the diluent has no preservative and could represent a safety risk to the recipient. Specific immunization processes are discussed later in this document.

Maintaining the Vaccine Cold Chain

Vaccine is maintained in designated vaccine coolers and freezers from the time they are removed from their vaccine refrigerator/freezer in the Vaccine and International Travel Center until they are returned to that refrigerator at the end of the immunization session. Generally, vaccine is out of that home environment for no more than four hours. Vaccine is transported in a refrigerator, with the frozen varicella vaccine transferred into a vaccine freezer at the immunization clinic site. The transport of vaccine involves travel time of no more than 15 minutes. The transport coolers are AcuTemp PX couriers with a 12 liter sized cooler used for the refrigerated vaccine and a 3L sized cooler used for the frozen varicella vaccine. The on-site freezer is an Engle vaccine refrigerator/freezer provided by the project staff. Upon arrival to the immunization site by project personnel, the on-site freezer is plugged in and allowed to reach freezing temperature. At that time, the entire varicella frozen transport cooler is placed inside this freezer. This is done to ensure that the frozen vaccine remains so, especially during the hot summer months. Arrival time of staff with the vaccine is staggered in order to allow the freezer to reach acceptable temperature. Temperature checks were performed during a clinic dry run and the on-site freezer reached acceptable temperature within 30 minutes. The transport vaccine refrigerator and freezer temperatures were verified as acceptable before, during the immunization clinic and after return transport. Transporting of the varicella vaccine to and from the immunization clinic site occurs in a 3 liter AcuTemp transport freezer. Photos of the transport refrigerator and freezer as well as the Engle on-site refrigerator/freezer are provided in Appendix D.

Staffing

Staffing for the event involves a minimum of two persons for the language interpreting area, two persons for the check-out area and enough faculty and student nurses or other individuals to administer the vaccine. In the interpreting area, one person works with the script and interpreters while the other completes the Vaccine Trip Tik and any other paperwork, including forms needed for a vaccine patient assistance accounting and enrollment process.

The immunization clinic offers a rare opportunity to pull together a variety of healthcare disciplines and have a living lab for interprofessional collaboration. In addition, the clinic offers lessons in cultural competence and sensitivity that may be rare. At these events, nursing, medicine, pharmacy and public health routinely work together and participants are students, graduates, and faculty. Students have been a mainstay of the program as a means of providing additional staffing, as well as the unique opportunity to learn about and practice interprofessional collaboration. All students have a designated faculty member present at the site at all times in order to provide oversight for their work. Their work may be part of a designated clinical rotation or part of service learning.

All students and faculty participate in an orientation prior to their participation.

Orientation includes the following:

- Overview of the project
- Review of the refugee population including languages, cultural competence and sensitivity

- Review of the vaccines and administration sites
- Demonstration of vaccine handling, management, preparation, and administration
- Safe injection practices and infection prevention and control
- Injection equipment, safety device activation, and proper disposal
- Documentation
- Patient education
- Emergency recognition, intervention and response

Picture descriptions of the immunization procedures are included in Appendix E. Videos of the processes are available on www.publichealthtools.com.

Public health students have been particularly important in the overall planning and ongoing evaluation of the program. Two public health students are supported by the project and are employed by the Division of Infectious Diseases. Other public health students participate in the process as part of service learning or practicum experiences. Their roles involve activities in the interpretation and check-out areas. In addition, the public health students have been important in ensuring health literacy aspects of the project as well as cultural competence and sensitivity.

Pharmacy students have been incorporated into the process in response to recognized need during evaluations. The need to have an on-site expert capable of assessing drug-drug interactions, answer questions posed by the refugees concerning their medication, and on-site evaluation of vaccine handling and management procedures were identified as necessary components. Pharmacy students now rotate through the project and have assisted with evaluation of all aspects of the process. They have assisted with verification of error-proofing measures and have become involved in vaccine preparation and administration. Their work alongside the student nurses has provided a practice benefit recognized by both professions and faculty members. These students have represented the Sullivan University College of Pharmacy and the University of Kentucky College of Pharmacy.

Infectious Diseases faculty members from the University of Louisville participate in the process through development of the immunization protocols and on-site presence at the clinic. Faculty consists of board-certified infectious diseases physicians, physician clinical instructors, fellows, residents, and rotating students. The Registered Nurse faculty member has served as the lead faculty and responsible for project concept, implementation, evaluation, and continuous improvement. An additional Registered Nurse from the Division of Infectious Diseases serves as backup in the event more staffing is needed. Clinical research staff from the ID Division remains available to assist with all aspects of the project, most notably as language interpreters. The ID Division employs a number of multi-lingual international physicians and researchers. Their skills in medicine and multiple languages have been valuable resources. These individuals have been on-site as needed and have connected via telephone and Skype.

Faculties from three area schools of nursing have assisted in all aspects of the project from its concept through implementation and evaluation. Those schools include the University of Louisville, Bellarmine University, and Spalding University. To support their involvement in the process, a Vaccine Boot camp has been developed in an effort to provide an opportunity to gain basic knowledge regarding vaccines and their delivery. The course brochure is provided in Appendix F.

Error-proofing the Process

Now that the clinic processes have been fully described, the following section contains a bullet-point list of the many error-proofing measures that have been taken to maximize the safety of the refugees, the project staff, and the participating students. It is important to note that error-proofing is part of an ongoing performance improvement arm of the project and new ways of improving safety and service delivery remain dynamic.

- Provision of one vaccine at each table
- Use of needle and injection safety devices
- Orientation of all participants before beginning their involvement in the project
- Designation of injection sites for each vaccine
- Labels containing vaccine name, lot number, site of injection
- Labels for each table noting the vaccine name and site of injection

- Standardization of the table and supplies
- Use of a Vaccine Trip Tik that follows them through all of their immunization clinic visits. This Vaccine Trip Tik includes the refugee demographics, vaccine contraindications and their individualized vaccine schedule.
- Scripts for use in interpretation of the immunization process, vaccine contraindications and warnings/precautions, and post-immunization patient education
- Identification of a private area for immunization that is easily accessible for women needing privacy for immunization
- Chairs for the vaccines to sit in during vaccine administration and a sitting area that can be used after immunization
- Emergency equipment, emergency drugs, and supplies
- Soft drinks and snacks/cookies on-site
- A check-out process that facilitates a post-immunization on-site wait time of at least 15 minutes.
- Three opportunities to assess for contraindications to immunization including review of medical information from RHA clinics, review of the referral form given to the refugee from the clinic, and direct questioning of the refugee using interpreters prior to release from the Interpreting Area.

Emergency Response

Although an emergency situation following immunization is rare, it is prudent to ensure that staff are competent and prepared to respond. Medical, nursing and pharmacy staff and students are certified in cardiopulmonary resuscitation through basic CPR training as outlined by the American Heart Association. An emergency drug kit is on-site at all times and consists of emergency drugs (epinephrine and Benadryl), administration supplies, and a blood pressure cuff for both average and large adults.

Again, although rare, the most common events involve dizziness or syncopal (fainting) episodes among vaccine recipients. All project staff and student participants are taught to recognize impending medical emergencies and first-line responses including helping the individual into a lying position on the floor, raising the legs, and physical assessment. Soft drinks, water, and cookies are available, as needed. Ice packs are in the vaccine transport refrigerators and freezers and are available for use, as needed. Activation of the 911 emergency response system should always be a consideration. Cell phones are carried by all project staff. In the event any refugees experience a syncopal episode, project staff should strongly consider contacting them the following day to ensure their well-being. During this particular project, the rate of reported dizziness post injection has been less than 1/1000 patient visits and rate of fainting post injection has also been less than 1/1000 patient visits. All responded positively to on-site interventions and recovered within 15 minutes of their immunization. It is noteworthy that all of these occurrences happened within seconds of immunization.

Civil Surgeon Examination

Following completion of the vaccines that can be given during the eight month resettlement period, each refugee is given a letter with information about their Civil Surgeon examination. The refugees are offered the opportunity to receive that examination by one of the ID Division GHI faculty who have been designed by the USCIS as a Civil Surgeon. This process enables both the refugee and the Civil Surgeon to have access to the records that show all vaccines received as part of this immunization project. The benefit to the refugee is that this project will also provide any remaining vaccines needed to complete the series. For example, if the refugee begins the immunization process late in their eight month eligibility period, they may be unable to complete the three-dose tetanus series. If they receive their Civil Surgeon examination through this portion of the project, that last dose is provided as part of the examination at no additional cost to the refugee. The project staff consider this to be an important public health component of the project.

Cultural Issues



There are a number of cultural aspects to this project that must be included in the immunization process. The most apparent involves Muslim women. These women may request a private area and a female nurse/pharmacist to administer their vaccines. Asking if this is needed is part of the initial discussion in the language interpretation area. Once this need is identified, it is communicated to the immunization staff so that woman can be escorted to a private area. Other refugees may request a private area in

response to physical characteristics they wish to keep private. Examples of this request involve refugees who may have been victims of torture and have physical evidence of that torture, including scars. All project staff should be cognizant to cultural needs of this refugee population and look for ways to address those needs.

Partnerships

The greatest opportunity for success involves partnerships in every phase of the process beginning with planning and through implementation and evaluation. Using the clinic as a learning environment for students in the health sciences, social sciences, arts and language, business, engineering as well as public safety brings a new perspective to the notion of community engagement. This particular project is still in an infant stage, but each clinic shows new opportunity for partnerships and improvement. We expect this document to remain a living and dynamic compilation of what we are learning and experiencing. The goal is to produce a process that gathers around the vulnerable refugee population and assist them in their integration into our local community and society in a way that is safe and satisfying for them and others.

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Appendices

- A- Instruction page for the refugees regarding green card immunizations
- B- Green Card Vaccines Trip Tik
- C- Interpreting scripts of the immunization process; Graphics showing the set-up of the Interpretation, Immunization, and Check-out areas
- D- Photos of the transport vaccine refrigerators
- E- Pictorial descriptions of the immunization process for intramuscular and subcutaneous vaccine administration
- F- Vaccine Boot Camp 2013 course brochure