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Summary Report of

The Hepatitis A and B Vaccination Initiative

Sponsored by the Center for Substance Abuse Treatment Substance Abuse and Mental Health Services Administration

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1 . BACKGROUND AND RATIONALE FOR THE HEPATITIS A AND B VACCINATION INITIATIVE

Hepatitis viral infection and infection with human immunodeficiency virus (HIV) are frequent co-occurring problems in drug users, especially intravenous drug users that also require appropriate medical management for best treatment outcomes. Infection from hepatitis A virus (HAV), hepatitis B virus (HBV), or hepatitis C virus (HCV) all can lead to acute liver disease with high potential for chronic liver disease from HBV and HCV infection. Co-occurring disease from HAV and HBV can also worsen liver function and disease that may already be present from HCV infection. Successful anti-retroviral medication therapy for HIV infection requires strict adherence to a medication regimen that has potentially unpleasant physical and psychiatric side effects and significant interactions with other medications. The medication regimen required to treat patients with HCV infection also requires strict adherence to therapy but has significant adverse psychological side effects. Successful treatment of infection and disease resulting from hepatitis virus and HIV requires a patient with a substance use disorder be in relatively stable recovery, meeting DSM criteria for a substance use disorder in optimally full remission whether or not on agonist therapy.

Co-occurring infections complicate the medical management of substance abuse treatment, particularly in the context of medication assistance treatment for Opioid dependence. Controlling the epidemic of hepatitis infection in injection drug users requires the development and implementation of prevention, care, and treatment strategies to reduce liver disease in persons who receive pharmacological therapies for Opioid addiction. A specific strategy to prevent liver disease in these patients is to vaccinate eligible individuals against HAV and HBV infections.

Immunization is recommended for all susceptible persons 18 years of age and older who are, or will be, at risk of exposure to both HAV and HBV, including:

1) Residents of drug and alcohol treatment centers;

2) Users of injectible illicit drugs;

3) Men who have sex with men;

4) Persons at increased risk of disease due to their sexual practices;

5) Patients with chronic liver disease, including alcoholic cirrhosis, chronic HCV infection, autoimmune hepatitis, and primary biliary cirrhosis would benefit from hepatitis A and hepatitis B immunization;

6) Individuals who are at increased risk for HBV infection and who are close household contacts of patients with acute or relapsing HAV infection and individuals who are at increased risk for HAV infection and who are close household contacts of individuals with acute or chronic HBV infection; and

7) Individuals at risk for progressive liver disease, including fulminant liver failure, or infection with hepatitis A and or hepatitis B. This includes individuals with HIV infection.

Since HAV hepatitis is generally self-limiting, with no known chronic disease, general vaccination emphasis has been placed upon HBV vaccination. However, any hepatitis among patients being treated for Opioid addiction can have negative impact on both the treatment of Opioid addiction and adherence to other medical therapies. It is also advisable to vaccinate this population against HAV. Immunizing with both vaccines separately would require following the immunization schedule for both hepatitis A and hepatitis B vaccine, resulting in five separate shots. However, a combined vaccine would decrease the number of shots to three if both were given according to a hepatitis B vaccine immunization schedule. Twinrix® vaccine is the only FDA-approved combination hepatitis A and hepatitis B vaccine and is provided via a standard three-dose regimen by intramuscular injection, given on a 0-, 1- and 6-month schedule. Twinrix® offers an opportunity to protect patients against both HAV and HBV with one combination vaccine. Twinrix® requires two fewer injections and has the potential for improved tolerability because of reduced number of injections. This may increase patient compliance, lead to time savings for you and your staff, and reduce administration costs for your practice or organization.

Twinrix® is generally well tolerated. Its safety profile was established in clinical trials involving the administration of 6,594 doses to 2,164 individuals and during routine clinical use of the vaccine outside the United States. The most common adverse events in clinical trials included soreness at the injection site, headache, and fatigue. They were mild and self-limiting and did not last more than 48 hours. Adverse events seen with Twinrix® were similar to those observed after vaccination with monovalent vaccines. As with any vaccine, vaccination with Twinrix® may not protect 100 percent of recipients. Twinrix® is contraindicated in people with known hypersensitivity to yeast or any component of the vaccine in subjects having shown signs of hypersensitivity after previous administration of Twinrix® or monovalent hepatitis A or hepatitis B vaccines.

A comprehensive approach to HAV and HBV prevention involving sites providing treatment to adults at risk can prevent the spread of the disease and reduce related liver disease, suffering, and premature death. Such a comprehensive approach would provide substantial savings to Medicare and Medicaid, which would otherwise be burdened with supporting the enormous cost of liver disease in the patients.

In 2006, the Center for Substance Abuse Treatment (CSAT) in the Substance Abuse and Mental Health Services Administration (SAMHSA) distributed 43,950 doses of Twinrix® vaccine for HAV and HBV to a network of 38 organizations providing services to persons at risk for the diseases. Twinrix® requires the administration of three vaccine doses, with the second dose 30 days after the first dose and the third dose 5 months after the second dose.

Initially, 40 providers and programs were invited and agreed to participate through signed agreements with SAMHSA for the vaccination project. These providers and programs were recruited through four different programs that involve SAMHSA grants or regulatory oversight:

- **Targeted Capacity Expansion (TCE)/HIV Program Area.** The TCE/HIV programs include the CSAT service-oriented projects that serve African American, Hispanic/Latino, and other racial/ethnic minority communities either infected with, or at high risk for, HIV. Many of the projects also serve persons with a history of intravenous drug abuse. The size of the programs may vary considerably. Six providers in the study were funded through the TCE/HIV program; one was also an Opioid treatment program (OTP), and one was also funded by the Health Resources and Services Administration (HRSA) buprenorphine program mentioned below.

- **OTPs.** Regulated and certified to operate by SAMHSA, OTPs provide methadone and buprenorphine treatment to individuals addicted to opioids such as heroin and prescription painkillers. Many, if not most, of the persons treated in these publicly funded treatment programs have a history of intravenous drug abuse. To receive treatment, patients must come to the OTP on a daily basis to receive methadone. The number of persons treated in OTPs can vary widely, from under 100 to over 1,000. Eighteen providers in the study were OTPs, and one was also a CSAT/TCE site.

- **Buprenorphine Sites.** Funded through HRSA as Special Programs of National Significance (SPNS), programs under this initiative were directed toward persons with HIV in the primary care setting who also have substance abuse issues. Sites participating in this project were testing the feasibility and/or effectiveness of integrating buprenorphine Opioid abuse treatment into HIV primary care settings. Four providers in the hepatitis vaccination study were funded through the HRSA SPNS initiative.

- **Minority AIDS Initiative (MAI) Sites**. This initiative aims to engage community-level domestic public and private nonprofit entities to prevent and reduce the onset of substance abuse and the transmission of HIV and hepatitis among minority populations disproportionately affected by these conditions. Eight providers in the hepatitis vaccination program were funded through the MAI.

Distribution of the vaccine was accomplished through a contract with Infection Control Consultation Services, Inc. *(*ICCSI). ICCSI worked with CSAT's Division of Pharmacologic Therapies and the pharmaceutical company to assure rapid on-demand shipment of single-dose Twinrix® vaccine and injection needles to designated vaccine recipients. The first vaccine shipments began in the beginning of January 2006 and the last shipments were received in the first week of October 2006.

In parallel to the distribution of the vaccine, CSAT's Division of Services Improvement contracted with Westat under an existing evaluation contract to monitor, observe, and evaluate the process of vaccine administration through these providers to determine the feasibility of providing the vaccination program on a larger scale. This report is focused on the findings of the Hepatitis Vaccination Monitoring Project that was performed under this contract.

This final report summarizes findings from the Hepatitis A and B Vaccination Initiative. Section 2 briefly describes the purpose of the project. Shipping and evaluation methods are described in Section 3 and results are described in Sections 4. Section 5 discusses the results in more detail and provides recommendations, while Section 6 presents a short conclusion. Appendices A, B, and C provide (a) tables corresponding to the figures provided in the report, (b) copies of the letter of invitation and the letter of agreement between SAMHSA and participants and a list of participating programs and sites, and (c) copies of the data collection instruments, respectively.

2 . PURPOSE

The main purpose of the hepatitis vaccine shipping and tracking contract was to ensure that identified program participants, through their participating physician, received a sufficient amount of vaccine to immunize the programs' estimated number of patients with the full vaccine series. Shipping and tracking included:

1. Establishing vaccine-ordering procedures with the program participants so that each could receive vaccine in a timely manner to vaccinate their estimated number of patients;

2. Shipping of all vaccine doses by the end of the contract period; and

3. Tracking shipments and delivery for periodic reporting and offering the Government Project Officer the opportunity to re-allocate the total number of vaccines shipped to the different program participants.

The main purpose of the Hepatitis Vaccination Monitoring Project was to assess the feasibility of providing a Twinrix® immunization delivery service at sites treating or providing outreach for substance abuse. The assessment included:

1. Gathering information on the characteristics of the sites that administered the vaccine;

2. Monitoring the status of the vaccine doses, including the number of doses administered and the characteristics of patients receiving the doses; and

3. Identifying the factors that facilitate and/or impede the distribution of the doses.

The overall goal of the project was to gather information that could support recommendations for distributing the vaccine on a much larger scale.

3 . METHODS

SAMHSA and the Government Project Officer identified and recruited 40 provider organizations that had the capability and could accept allocated vaccine delivery of a specified number of vaccine doses from a total of 43,950 contracted purchased vaccine single dose units, with injection needles included if needed. At the end of the project period, this included shipping to physician-designated recipients at 53 sites capable of appropriately receiving and storing the vaccine until vaccinations could be administered through 84 sites.

CSAT's Division of Pharmacologic Therapies had previously developed a list of OTPs that had expressed tentative interest in participating in an immunization project should funding be received. Among these programs were a small number of HRSA grantees that had been designated as SPNS that were operating with an institutional review board to develop model programs for treating HIV and HCV infection in a patient population with substance use disorders to include use of buprenorphine. Center for Substance Abuse Prevention and CSAT MAI TCE Project Officers selected candidate grantees to be invited for potential participation in this initiative. SAMHSA MAI TCE initiatives intervene with populations that have substance use disorders through prevention and treatment programs in minority populations potentially infected with HIV or HCV. These programs were sent invitation letters outlining the rationale and scope of the Hepatitis A and B Vaccination Initiative along with a letter of agreement. The letter of agreement asked for the signature of the person who would be responsible for ordering, receiving, and distributing the vaccine and the signature of the person (if different) who would be responsible for cooperating with Westat for project assessment. A copy of the program's immunization protocol or standard operating procedure was also requested to ensure that the program had the potential to appropriately use the vaccine either within the program or in collaboration with a support agency, such as a public health department or primary care provider/immunization clinic.

Contacts from the signed letters were forwarded to ICCSI for initial contact and to establish the ordering and shipping process. The Government Project Officer, with the program, estimated a total number of patients that could be immunized with three vaccinations over the following 18 months for shipment planning purposes. ICCSI would contact the vaccine point of contact, establish the ordering process with that contact, and obtain information needed to order the vaccine that included the names of the physician placing the order and the designated person who would be responsible for receiving and storing the vaccine. ICCSI reviewed with the receiving person details needed to appropriately receive and store the vaccine and the forms needed by ICCSI to order the vaccine at the government rate for the

collaborating program. Figures 3-1 and 3-2 highlight the ordering and shipping strategy that was implemented.

Figure 3-1

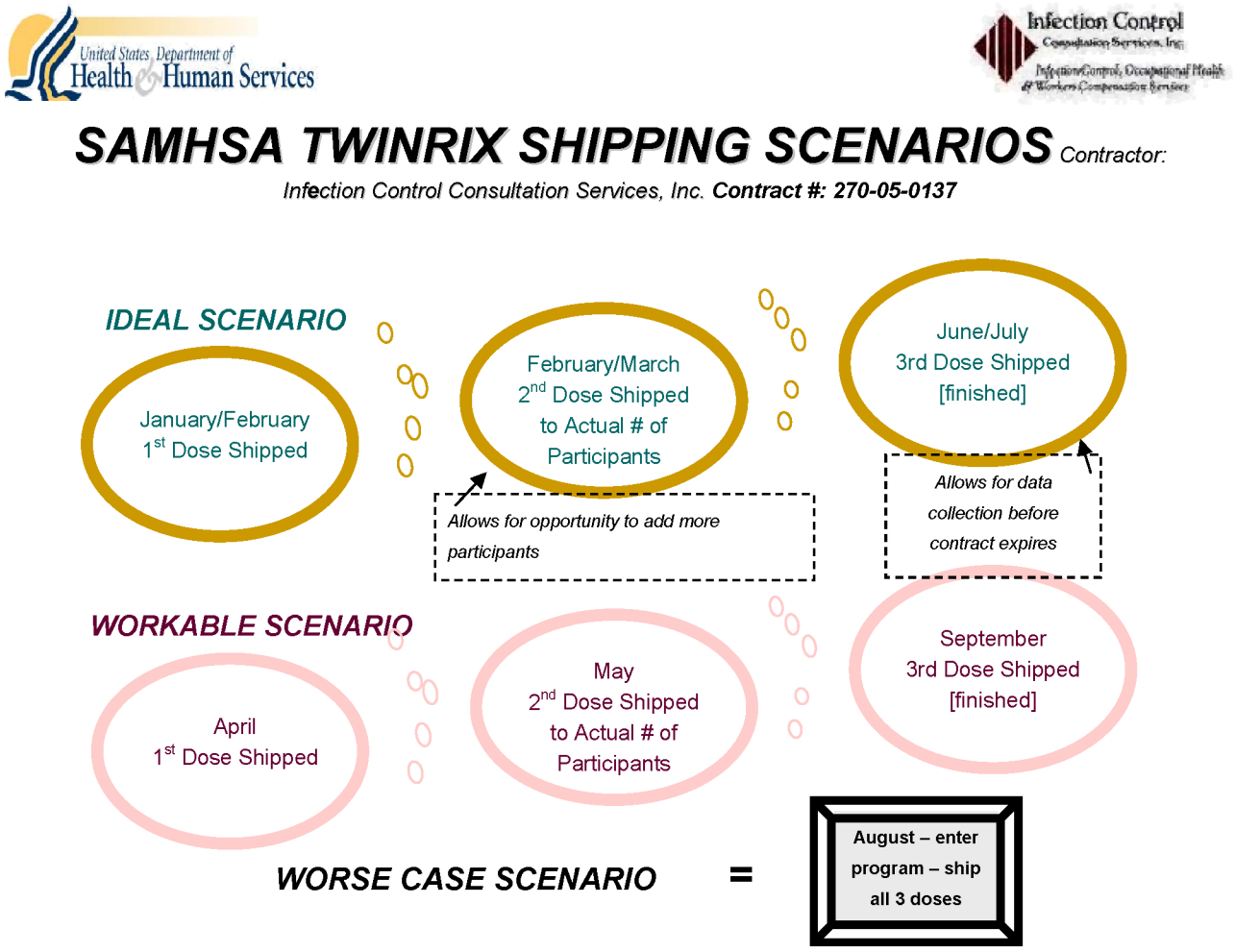
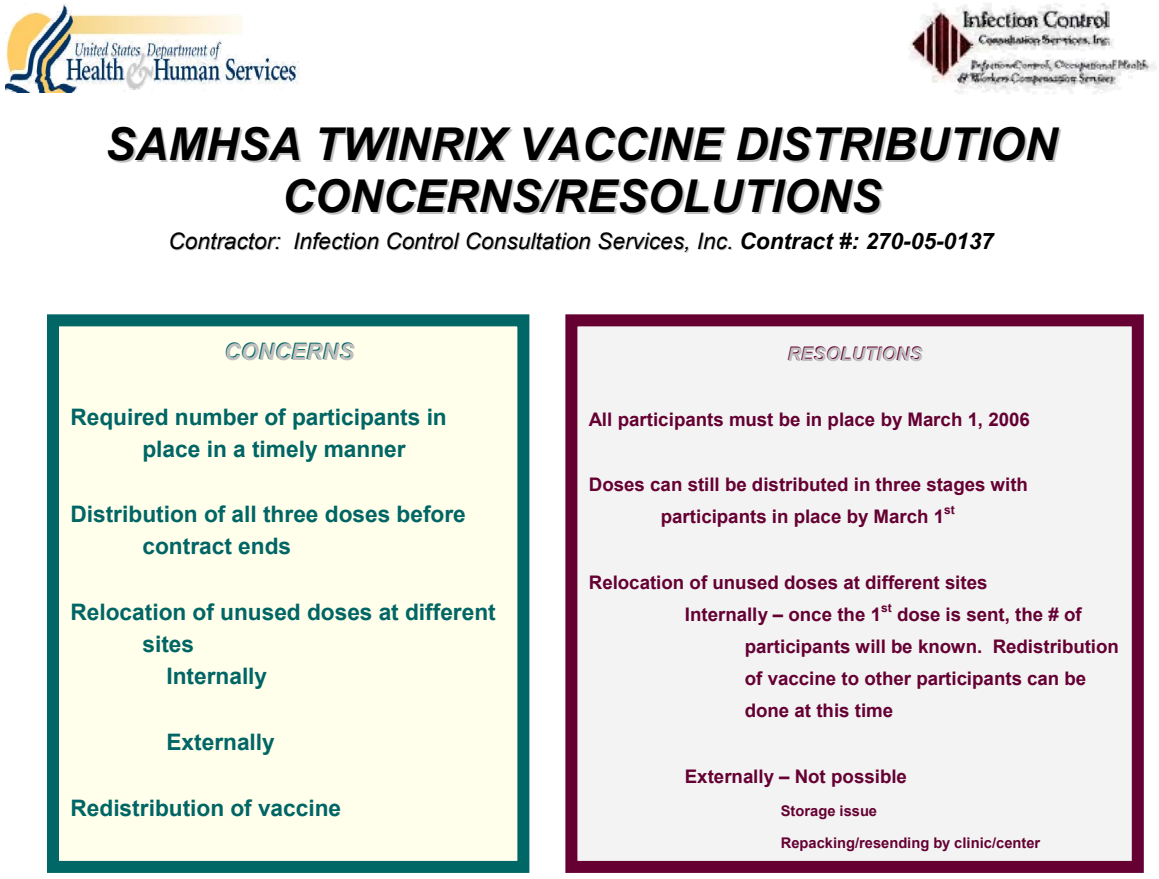


Figure 3-2



Based upon its other work, Westat coordinated with its project officer and the Division of Pharmacologic Therapies the data collection form it would use for its assessment using Westat's established methodology that was an extension of its SAIS evaluation contract. The first nine providers to be recruited participated in a brief pilot test to refine data collection procedures and forms. During the pilot, Westat tested two forms for data collection: a dose form, to be filled out when the vaccine dose was administered, and a refusal form, to be filled out when a patient refused the offer of vaccination.

Westat set up data collection activities at the sites according to a structured protocol:

1. Westat scheduled and conducted an initial call that involved provider staff, Westat staff, and the Government Project Officer. The purpose of the call was to welcome the provider organization, provide an overview of the project, gather general information about the provider and the sites participating in the study, and obtain names of the site data collection contacts and addresses for shipping forms.

2. The Westat data collection coordinator then scheduled and conducted a call with each site data collection contact at every site participating in the project. The purpose of the call was to establish the details of the data collection procedures used at the site. During the conversation, the participants:

    - Reviewed the materials received

    - Verified the circumstances under which the vaccine was being provided and the data were being collected; and

    - Confirmed quality control measures.

3. The Westat coordinator then set up ongoing weekly calls or contacts with the site contact to provide assistance to the sites if needed, to gather information about any changes to the vaccination and data collection procedures, and to ensure data quality.

Data collection procedures at the sites were also standardized. At or just after the initial call, the provider organization assigned a staff member to serve as the site contact. Although they served in different positions within their site (e.g., as program directors, physician assistants, registered nurses, counselors, and clerks), site contacts were expected to report on procedures for recruiting, vaccinating, and following up with patients vaccinated with Twinrix® and ensure that data collection forms were completed correctly and sent to Westat. In some sites, these activities were accomplished directly by the site contact, while in others the site contact assigned and trained additional staff to assist. In all sites, the dose forms were completed at the time of vaccination. In instances where patients refused the vaccine, the refusal form was completed. As forms were completed, they were collected in a central location. On a weekly basis, the site contact collected the forms on-site or arranged to receive them from off-site locations and then sent them to Westat.

During the weekly call, the site contact reported any problems with data collection activities. He or she also provided progress reports on the number of patients vaccinated and the number of forms to be shipped. Just prior to sending the forms to Westat via FedEx, the site contact sent an email or called the Westat coordinator with the tracking number of the shipment and the number of data collection and refusal forms sent. Westat requested that sites ship forms on a weekly basis. However, some sites shipped forms biweekly or monthly, depending upon patient volume.

When dose and refusal forms were received by Westat, they were receipted in a database. Data collection forms were reviewed for completeness and clarity. Forms with missing or unclear data items were brought to the attention of the Westat data collection coordinator. The coordinator consulted with the site contact to resolve missing or unclear data items.

At the end of the reporting week, a weekly status report was generated. The report contained detailed information by site, including the number of patients expected, doses administered, doses shipped; dates for the initial call, first weekly call, and when the first dose was received; and the cumulative number of doses 1, 2, and 3 and refusal forms received. The Westat project director emailed the report to the CSAT Government Project Officer on a weekly basis.

In addition to weekly status reports, Westat provided quarterly reports to CSAT describing the progress of vaccine distribution, startup activities, and factors that facilitated or impeded progress as sites were enrolled.

4 . RESULTS

ICCSI began shipping vaccine and injection needles to the first program in January 2006 and completed final shipments to all programs and sites in the first week of October 2006. After completing agreements with SAMHSA, programs were contacted by ICCSI to establish ordering procedures and orders were collected. One month after the first order, contact was made for the second shipment and modifications were made in the allocated numbers of vaccine based upon feedback from the program related to the first shipment and following shipments.

Westat was cleared to begin data collection efforts on Wednesday, January 25, 2006. By March 31, 2007, data had been collected from 36 providers administering vaccinations through 82 sites. One provider received its only vaccine shipment too late in the evaluation process to be included. In this section, we discuss (1) the general characteristics of the sites and the procedures used, (2) information on doses administered, (3) the characteristics of patients who received vaccinations, and (4) feedback from the sites.

4.1 Vaccine Shipping and Tracking

In total, 43,950 doses of Twinrix® vaccine were shipped to 38 programs. Some had more than one shipping location, so a total of 53 sites received vaccine. The initial dose of 200 vaccines was sent to a program that also worked with Westat on the evaluation report test format. Once this program and Westat agreed on the format with SAMHSA concurrence, vaccine shipments began to all participating programs. Although it was assumed that all programs would receive shipments corresponding to three vaccines per projected patient to be immunized, it became clear in May that initially allocated vaccine would not be utilized or shipped by the end of the fiscal year. Programs that had indicated interest as the project started but were not among those initial participants were placed on a waiting list and allowed to join as participants through August. After the first shipment in January, there were 6 shipments in February, 14 in March, 11 in April, 39 in May, 7 in June, 21 in July, 7 in August, 28 in September, and 15 in October.

One debating point over this period became the actual box of 5/8-inch 100 needles that were contracted to be used for the single dose vaccinations. These needles, although appropriate for thin and normal weight individuals, proved to be too short for heavier populations, not able to easily reach the deltoid muscle; moreover, some states required use of safety lock needles. To answer questions and discuss solutions, in August, several ‘office call’ conference calls were established to allow any program to come online to discuss these problems and solutions. Programs generally were able to find other

supplies of needles or exchange with other services needles if the ones supplied were not appropriate for the specific individual. Figure 4-1 highlights the course of shipping over the 10-month period of the contract in which all participating sites were to receive their allocated vaccine amounts with injection needles if needed.

Figure 4-1

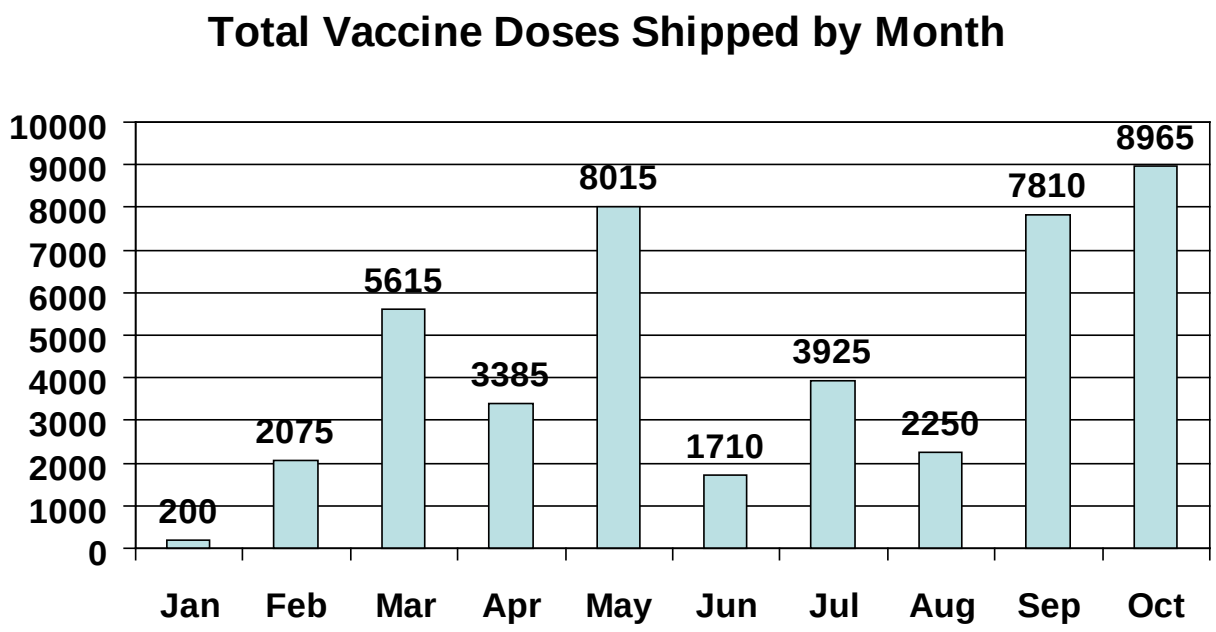


Table Associated with Figure 4.1:
Vaccine Doses Shipped by Month in 2006

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
200	2075	5615	3385	8015	1710	3925	2250	7810	8965

4.2 Site Characteristics

Sites differed significantly, both in the services they offered and in the way that vaccination procedures and follow-up were implemented. Not surprisingly, these differences were ultimately associated with the number and patterns of doses delivered. This section reviews information on the characteristics of and procedures used at the sites.

4.2.1 Services Offered

Although all sites provided treatment or outreach to persons with substance abuse problems, the programs offered varied in length and in type of services offered. In general, there were four different types of services offered at the sites:

1. **Outpatient treatment.** Provided at six sites, outpatient treatment tended to last several months. However, most patients were out of treatment by the time of the 6-month follow-up.

2. **Residential treatment.** Provided at four sites, residential treatment lasted 1 month. In most cases, residential programs attempted to administer both the first and second doses before the patient left treatment.

3. **OTPs.** Provided at 48 sites, OTPs provided primarily methadone treatment. Most patients were still in treatment after 6 months.

4. **Outreach programs.** Provided at 24 sites, outreach programs provided services beyond the 6-month minimum period for completion of the vaccination series. However, patients seen in outreach programs were typically transient.

Notably, the funding sources listed in Section 1 and the services provided at the sites did not always match. Table 4-1 displays a list of the providers and their associated sites, with the funding source and type of services offered.

Table 4-1. Providers, funding, sites, and services provided

Provider	Funding source	Sites	Services
AIDS New York (2 sites)	CSAT MAI/TCE	Bethesda House Saint Peter Addiction Recovery Center	Outpatient Residential
APRA/Unity (8 sites)	OTP	First Street Health Center Detox Oasis Partners in Drug Abuse Rehabilitation and Counseling Women Services Center United Planning Organization Comprehensive Treatment Model Treatment Program Good Hope Road	OTP OTP OTP OTP OTP OTP OTP OTP
ARCW (7 sites)	CSAT MAI/TCE	Eau Claire Green Bay La Crosse Madison Milwaukee/Kenosha Superior Wausau	Outreach Outreach Outreach Outreach Outreach Outreach Outreach
Ayudantes (3 sites)	OTP	Espanola Las Vegas Santa Fe	OTP OTP OTP
Beth Israel (13 sites)	OTP	Avenue A Billie's Place Clinic 1 Clinic 2 Clinic 3 Clinic 6/7 Clinic 8 Clinic 8D Cumberland Clinic Gouverneur Clinic Marie Nyswander Clinic St. Vincent's Clinic Vincent P. Dole Clinic	OTP OTP OTP OTP OTP OTP OTP OTP OTP OTP OTP OTP OTP
Caritas	OTP	CARITAS	OTP
CHAMP Clinic	OTP	CHAMP Clinic	OTP
CODAC	OTP	CODAC Behavioral Healthcare	OTP

Table 4-1. Providers, funding, sites, and services provided (continued)

Provider	Funding source	Sites	Services
Comm. Health Center (4 sites)	OTP, CSAT MAI/TCE	Methadone Gatehouse Meridia Raymar: Residential	OTP Outpatient Outpatient Residential
CRA	OTP	Chicago Recovery Alliance	Outreach
Crossroads (4 sites)	CSAT MAI/TCE	Methadone Outpatient Outreach Inpatient Residential	OTP Outpatient Outreach Residential
Ctr. Beh. Health, Reno	OTP	Center for Behavioral Health, Reno	OTP
DASH Clinic (2 sites)	OTP	Hilo Honolulu	OTP OTP
Drug Free Living	OTP	Center for Drug Free Living	OTP
Footprints/Genesis House	CSAT MAI/TCE	Footprints/Genesis House	Outreach
Gadsden	OTP	Gadsen Treatment Center	OTP
Georgia Therapy Assoc.	OTP	Georgia Therapy Associates	OTP
Gulf Coast	OTP	Gulf Coast Treatment Center	OTP
Hartford Dispensary (3 sites)	OTP	Bristol Clinic New Britain Clinic New London Clinic	OTP OTP OTP
Hope Action Care	CSAT MAI/TCE	Hope Action Care	Outreach
Kent/Sussex	OTP	Kent/Sussex Counseling Services	OTP
Longview	CSAT MAI/TCE	Longview Wellness Center	Outreach
Miriam Hospital (3 sites)	HRSA-funded bup, CSAT MAI/TCE	Project HAPPEN (Hepatitis C Vaccination Site) Center for Treatment and Recovery Stanley Street Treatment and Resources	Outreach OTP Outpatient
New Directions	CSAT MAI/TCE	New Directions Treatment Services	OTP
NJCRI	CSAT MAI/TCE	NJCRI	Outreach
OASIS	HRSA-funded bup	OASIS	OTP
Project SPARC	CSAT MAI/TCE	San Antonio Project SPARC	Outreach
Recovery Resource Center	CSAT MAI/TCE	Recovery Resource Center	Outreach
Rodgers	OTP	Rodgers South	OTP

Table 4-1. Providers, funding, sites, and services provided (continued)

Provider	Funding source	Sites	Services
SFGH	HRSA-funded bup	SFGH Opioid Treatment Program	OTP
Shelby	OTP	Shelby County	OTP
Shoals Treatment Center	OTP	Shoals Treatment Center	OTP
Tarrant County (2 sites)	CSAT MAI/TCE	Tarrant County MHMRTC: Addiction Services Tarrant County MHMRTC: Addiction Services	Outpatient Residential
Terros (7 sites)	CSAT MAI/TCE	Community Living Program Indian School Ladder Program McDowell Ladder Program Mesa Ladder Program Safety Counts Terros HIV Testing Terros Together	Outreach Outreach Outreach Outreach Outreach Outreach Outreach
University of Alabama	OTP	University of Alabama	OTP
University Of Miami	HRSA-funded bup	University of Miami	OTP
Yale	HRSA-funded bup	Yale University AIDS Program	Outreach

4.2.2 Site Procedures

For the vast majority of sites, there was considerable delay between the formal recruitment of the site and the initial date of vaccinations. Of the 82 sites, 15 (42%) started vaccinating in the first quarter of the project (Q1); 13 (36%) started vaccinating in Q2; 7 (19%) started vaccinating in Q3; and 1 (3%) started vaccinating in Q4. Figure 4-2 shows the discrepancy between the date of the initial call with the provider and the first vaccination.

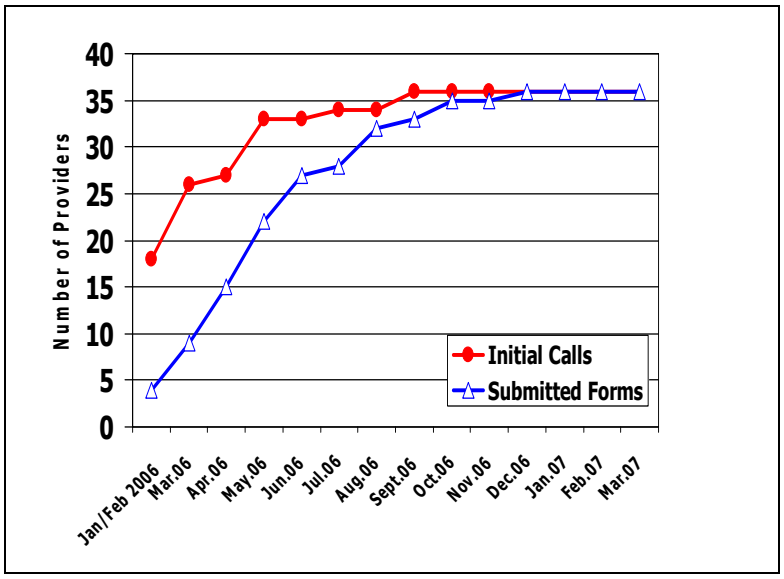


Figure 4-2. Number of initial calls and forms submitted, by month

Table associated with Figure 4-2
Total doses administered by month

Month	Dose 1	Dose 2	Dose 3
Jan/Feb 2006	146	12	5
March 2006	374	57	0
April 2006	922	145	8
May 2006	3,930	381	29
June 2006	5,372	2,313	46
July 2006	6,262	3,530	67
Aug 2006	7,338	4,177	114
Sept 2006	8,026	4,839	178
Oct 2006	8,696	5,427	326
Nov 2006	8,998	5,855	1,019
Dec 2006	9,221	6,075	2,690
Jan 2007	9,565	6,305	3,306
Feb 2007	9,934	6,454	3,531
March 2007	10,289	6,684	3,949
TOTAL	**10,289**	**6,684**	**3,949**

Sites that had an established vaccination program were able to quickly incorporate the SAMHSA vaccine into their pre-existing system. Other sites needed substantial time to train staff, establish a medical protocol, find refrigeration to store the vaccine, and create an administrative system to support the vaccination program. **The level of effort expended to create these structures was nontrivial for all sites without a pre-existing program. This is a key finding from this study.** Since most sites had very limited resources to establish these procedures, it appeared that setting up the program was a significant burden for them. Sites able to leverage funding for pre-existing vaccination programs were able to start vaccinating much more quickly.

Although there were substantial differences between the sites, there were overall patterns to the procedures they implemented, as described in the following sections.

Patient Recruitment

For patient recruitment, sites implemented one of three main strategies. Some sites mounted information campaigns using posters and brochures or even group presentations. The level of effort mounted for these campaigns varied from site to site. Sites using this approach relied on patients to approach staff for the vaccination if interested. Thus, patients self-selected for vaccinations, and few refusals were reported from sites implementing this strategy.

Other sites screened their patients for prior vaccination, risk factors, prior exposure to HAV and HBV, and other factors that would identify patients as being eligible for the vaccination. In some sites, this screening was quite extensive, involving results from blood tests; other sites merely asked a few questions. Under this strategy, only eligible patients were offered the vaccinations, and some refusals were reported.

A third group of sites approached all patients individually and recommended the vaccination, considering all patients to be at risk and eligible, and excluding those who refused or reported factors that would make them ineligible. A large number of refusal forms were collected from sites implementing these recruitment procedures.

Vaccination

There were three main strategies for vaccination. The first involved vaccinating patients individually in conjunction with contact occurring as a usual part of the program in an ongoing way. For example, treatment programs would vaccinate in conjunction with a routine scheduled intake physical or

after a counseling session, outreach programs would vaccinate during routine contact, and OTPs would vaccinate after methadone dosing. Doses were administered over many weeks as patients entered and exited the program.

In contrast, a "blitz" strategy involved mounting a massive vaccination effort to vaccinate as many individuals as possible within a day or two. Sites implementing this strategy would use informational materials to promote the event and would then vaccinate as many patients as would attend at fixed intervals, corresponding to the intervals required for a complete vaccination sequence. Using this strategy, sites with no on-site medical staff could partner with staff from the local department of health, who would visit at certain times.

A third strategy involved sending patients to the department of health for vaccinations. Patients were educated about the importance of receiving all three doses and were then sent to the department of health. Obviously, the success of this strategy depended on the level of follow-up implemented by the program sending the patient to the department of health.

Follow-up

Strategies for follow-up varied according to whether the program was still in contact with the patient at the follow-up intervals required by the vaccination protocol. Most patients treated at OTPs were still in treatment 6 months after the initial vaccination dose, so follow-up strategies there involved some kind of note in the existing medical record system that reminded nurses to offer the patient another dose.

Most patients treated in residential and outpatient programs were gone from treatment 6 months after the initial dose, and so these programs attempted to create an administrative structure for tracing. For most programs, the follow-up was too resource intensive to be practical. Some outreach programs were able to administer follow-up doses because they visited patients in their neighborhoods.

4.3 Doses Administered, Refusals Monitored, and Patients Vaccinated

From January 25, 2006, to March 31, 2007**, 10,401 patients received 20,933 doses, more than one-half of the doses distributed to the sites.** Of the 10,299 patients who received dose 1 from the SAMHSA program, 65 percent also received dose 2 and 38 percent also received dose 3. A small number of patients received dose 1 or dose 2 from another vaccination program. Figure 4-3 shows the number of doses delivered over the course of the study.

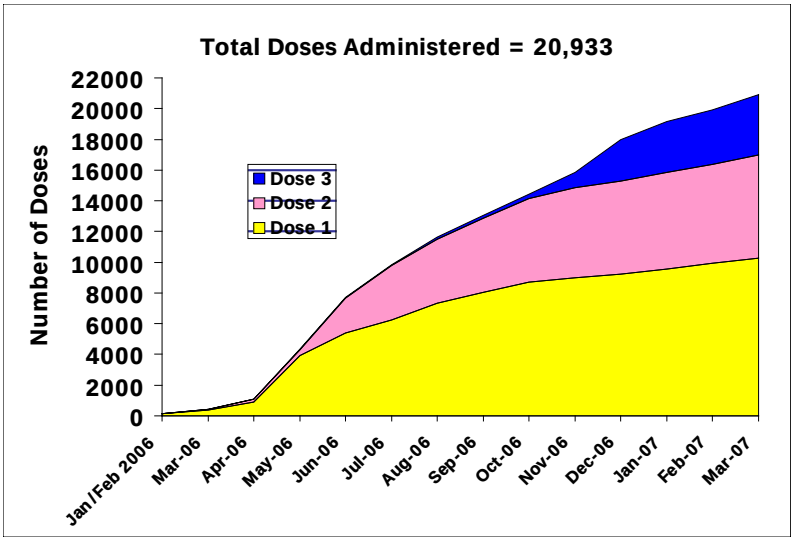


Figure 4-3. Total doses administered, by month

Table associated with Figure 4-3
Total number of doses administered, by site type

Site Type	Frequency	Percent
Outpatient	343	1.6%
Residential	362	1.7%
Methadone	12,862	61.4%
Prevention Outreach	6,956	33.2%
Missing	410	2.0%
TOTAL	**20,933**	100.0%

The vast majority of doses (94%) were administered by OTPs and outreach programs, with Beth Israel (an OTP) accounting for 7,274 doses and Chicago Recovery (an outreach program) accounting for 3,260. Figure 4-4 shows the proportion of doses delivered by each site type.

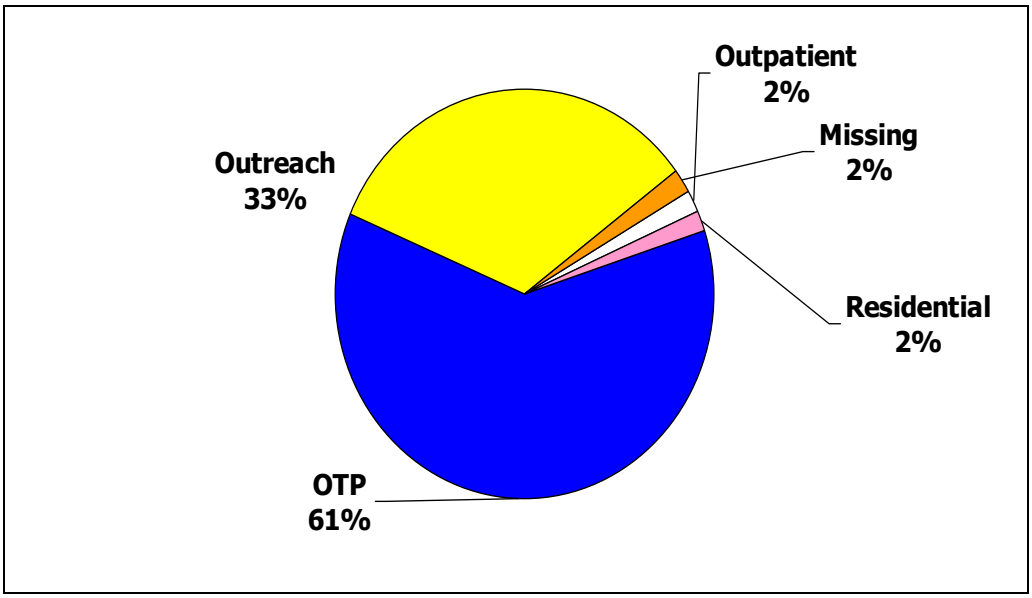


Figure 4-4. Total number of doses administered, by site type

Table associated with Figure 4-4
Followup for dose 2, by site type

Site Type	Dose 1 Administered	Dose 2 Administered	Dose 2 NOT Administered	Percent Dose 2 NOT Administered	Percent Dose 2 Administered
Outpatient	246	66	180	73.2%	26.8%
Residential	237	82	155	65.4%	34.6%
Methadone	5,295	4,324	971	18.3%	81.7%
Prevention Outreach	3,983	2,073	1,910	48.0%	52.0%
TOTAL	**9,761**	**6,545**	**3,216**		

Total is number of cases with dose 1 delivered by February 28, 2007. These are all the cases eligible to complete dose 1 and 2 within the data collection window.

All sites were able to administer at least one follow-up dose (dose 2), but only 86 percent of the sites were able to administer at least one dose 3 dose. Because many programs were delayed in starting the vaccination program, many patients could not receive dose 2 or dose 3 within the time frame of the study. Of the 10,299 persons vaccinated with dose 1, 9,761 had received dose 1 before February 28,

making them eligible to receive dose 2 before the end of the data collection window (30 days after dose 1). Of the 9,761 persons eligible, 67 percent received dose 2.

Administration rates for dose 2 varied by site type. Figure 4-5 shows that OTPs were significantly more likely than the other types of sites to complete dose 2. Beth Israel doses make up the vast majority of doses delivered by OTPs. When Beth Israel doses were excluded from the analysis, OTPs were still significantly more likely to complete the second dose.

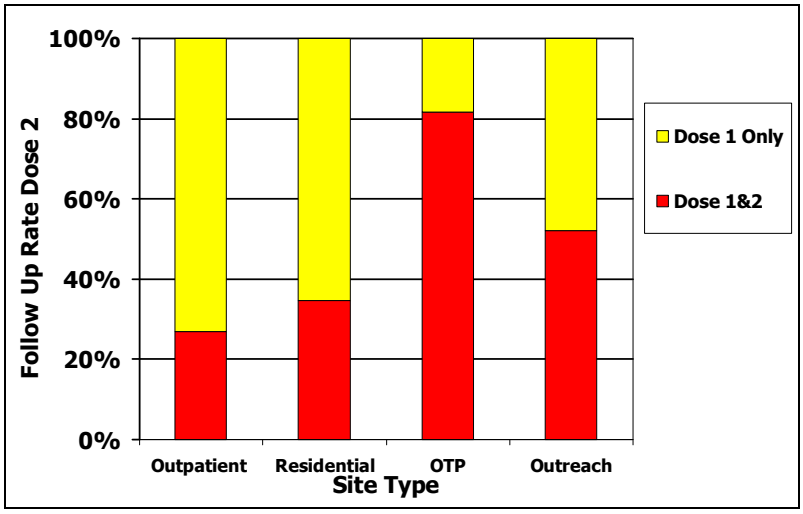


Figure 4-5. Follow-up for dose 2, by site type

Table associated with Figure 4-5
Followup for dose 3, by site type

Site Type	Dose 2 Administered*	Dose 3 Administered	Dose 3 NOT Administered	Percent Dose 3 NOT Administered	Percent Dose 3 Administered
Outpatient	41	26	15	36.6%	63.4%
Residential	38	30	8	21.1%	78.9%
Methadone	3,586	3,159	427	11.9%	88.1%
Prevention Outreach	1,058	648	410	38.8%	61.2%
TOTAL	**4,723**	**3,863**	**860**		

Total is number of cases with dose 2 delivered by September 30, 2006. These are all the cases eligible to complete dose 2 and 3 within the data collection window.

Similarly, of the 6,685 individuals who received dose 2 vaccinations before September 30, 2006, 4,723 were eligible to receive dose 3 before the end of the study on March 31, 2007 (5 months after dose 2). Of the 4,723 eligible individuals, 61 percent received dose 3, with the administration rate of dose 3 varying significantly by site type. Figure 4-6 shows that OTPs were significantly more likely than the other sites to complete all three vaccinations, and these findings held even with the exclusion of Beth Israel doses.

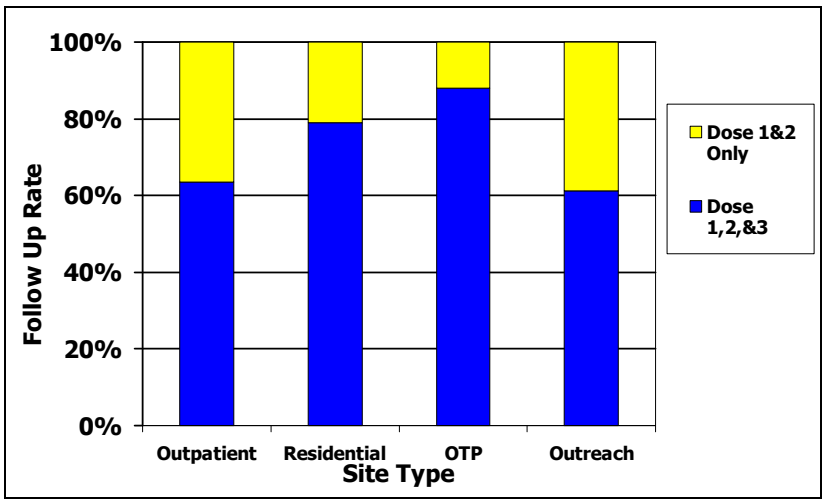


Figure 4-6. Follow-up for dose 3, by site type

Table associated with Figure 4-6
Delivery of doses 1, 2, and 3, by site type

Site Type	Dose 1 Frequency	Dose 1 Percent	Dose 2 Frequency	Dose 2 Percent	Dose 3 Frequency	Dose 3 Percent
Outpatient	251	2.5%	66	1.0%	26	0.7%
Residential	250	2.5%	82	1.3%	30	0.8%
Methadone	5,379	53.2%	4,324	66.1%	3,159	81.8%
Prevention/Outreach	4,235	41.9%	2,073	31.7%	648	16.8%
TOTAL	**10,115**		**6,545**		**3,863**	

The sites differed significantly in their ability to administer follow-up doses. Figure 4-7 shows dose 1, dose 2, and dose 3 vaccinations as a proportion of all doses delivered for each site type. Because OTP treatment tends to be long term and require ongoing monitoring of methadone doses, it was much easier for OTPs to track timing for follow-up doses and to find patients for follow-up.

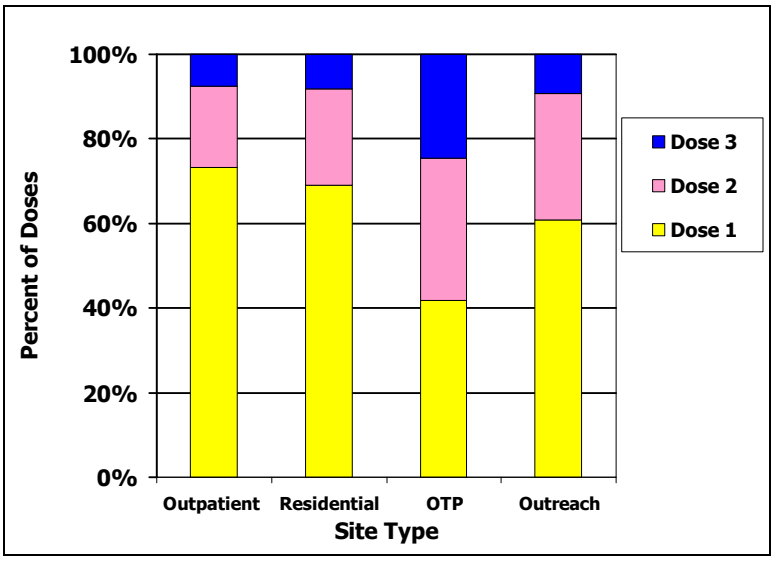


Figure 4-7. Delivery of doses 1, 2, and 3, by site type

Table associated with Figure 4-7
Number of patients receiving vaccinations, by age group

Age Group	Frequency	Percent
<18 years	27	0.3%
18-24 years	960	9.2%
25-34 years	2,101	20.2%
35-44 years	2,915	28.0%
45-54 years	3,051	29.3%
55-64 years	1,034	9.9%
65+ years	118	1.1%
Missing	195	1.9%
TOTAL	**10,401**	

Only half of the providers were able to administer more than half of their allocated doses during the data collection window. This appears to be due to three factors. First, many of the sites were delayed in setting up their procedures for vaccination. Some sites had been vaccinating for less than 6 months before the end of the data collection period. Second, the demand for vaccinations by the patients themselves was lower than expected. Sites reported that many patients had previously been vaccinated, while others were reluctant to participate. Third, many sites vastly underestimated the difficulty involved in administering follow-up doses. Many patients, particularly those in outpatient, residential, or outreach programs, could not be found or were unwilling to return to the site at which they had received the first or second doses.

We did not report the number of refusal forms returned by each site because this did not represent an accurate count of the number of eligible patients who actually refused the vaccinations. First, variation in patient recruitment methods led to wide disparities in refusal rates. Sites that offered the vaccination to each patient individually reported a higher number of refusals than sites that educated the patient population, then offered vaccinations to all who were interested. Sites using the latter procedure never counted the number of persons who were not interested, so the number of refusal forms submitted was lower. Second, procedures for reporting refusals did not adequately account for multiple offers. Patients in some sites were offered vaccinations on multiple occasions by multiple staff, which could have created multiple forms per refusal. In addition, patients who initially refused later agreed to be vaccinated. To complicate matters further, knowing that a patient who initially refused the vaccination might later agree to it, site staff were inconsistent in filling out the refusal form.

There are no simple solutions to collecting unbiased refusal data. One solution would be to construct a vaccination log containing a census of patients at each site. This log would be a single information source that would be consulted prior to presenting information about or offering the vaccination and updated after the presentation or offer. This procedure would require that resources be available for someone to coordinate the vaccination offer and administration and to document results. Copies of the log, with identifiers removed, could be sent to researchers on a regular basis. Because of the substantial level of effort involved in this procedure at the site level, it was deemed impractical for the current project but could be used in another project if sites were directly funded to provide vaccinations and data collection. In the current project, offers were not recorded or tracked, and monitoring this data point was considered to be outside the scope of the present study.

While the number of refusal forms completed per site is not an accurate reflection of actual refusal levels, it is instructive to note the reasons for the refusal. The reasons are listed in Table 4-2, below.

Table 4-2. Reasons for refusals

Reason If Known	Percent of All Recorded Refusals
Received vaccination elsewhere	32
No time to get vaccinated	43
Did not want the vaccination (for reasons unspecified)	25

Anecdotally, OTPs reported that patients who were offered vaccination after their morning methadone dose were reluctant to be vaccinated because of the observation period required after the vaccination—many were hard-pressed to get to work or their families on time after traveling for the methadone. Patients also reported that they did not want the vaccination. This seemed to be more prevalent at sites where staff and patient education was minimal.

The majority of recorded refusals were from OTPs, since staff at these sites made individual offers to a very high number of patients, which resulted in more than 12,700 doses administered as well as a high number of refusals. These sites would also be highly susceptible to over-counts, since the patients are in methadone treatment for many months and are likely to have received multiple offers. Sites that offered the vaccinations to each patient but that had no established education programs had a higher rate of refusal, and this finding was true across all types of sites.

Very few adverse reactions were reported. Of 20,933 doses administered, only 6 (0.029%) resulted in an adverse reaction, and none was serious. Anecdotally, no site contact reported that adverse reactions were problematic. The types of adverse reactions reported to Westat on the dose forms are listed in Table 4-3.

Table 4-3. Adverse reactions reported on dose forms

Reaction	Number of times listed
Given Benadryl	1
Jittery stomach and nausea	1
Red and sore	1
Right eye swelling, facial rash on right side that lasted 3-4 days	1
Funny taste in mouth but cleared up after a few minutes	1
Arm had tingling sensation 1 hour after vaccine administration	1

4.4 Characteristics of Patients Receiving Vaccinations

This section describes the demographic characteristics of the 10,401 patients receiving the vaccinations between January 25, 2006, and March 31, 2007. More males (60%) than females (39%) received the vaccine. Fewer than 1 percent of patients who received the vaccine were identified as transgender/other. The average patient age was 43 years, and 62 percent of patients belonged to minority racial/ethnic groups. Patient age and race/ethnicity characteristics are described in greater detail below.

As shown in Figure 4-8, the largest numbers of vaccine doses were administered to patients in the 35-44 and 45-54 age ranges (28% and 29%, respectively). In contrast, the fewest doses were administered to patients under 18 years (0.3%) and patients 65 years and older (1%). Interestingly, hepatitis vaccinations became part of the standard child vaccination series about 15 years ago, so it is unclear how many of the patients under 18 years of age were receiving duplicate vaccinations.

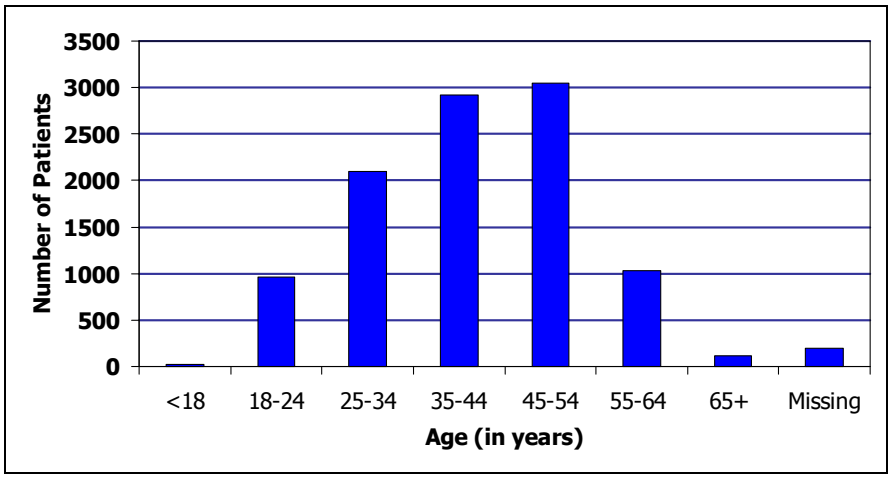


Figure 4-8. Number of patients receiving vaccinations, by age group

Table associated with Figure 4-8
Race of patients receiving vaccinations

Race	Frequency	Percent
Minority	6,513	62.6%
White	3,737	35.9%
Missing	151	1.5%
TOTAL	**10,401**	

Information on race and ethnicity was collected according to U.S. Census Bureau standards, where ethnicity (Hispanic or not) and race are not mutually exclusive. More minority patients than White patients received the vaccine (63% and 36%, respectively). This is expected, since many of the grantees were MAI grantees. Figure 4-9 shows this breakdown.

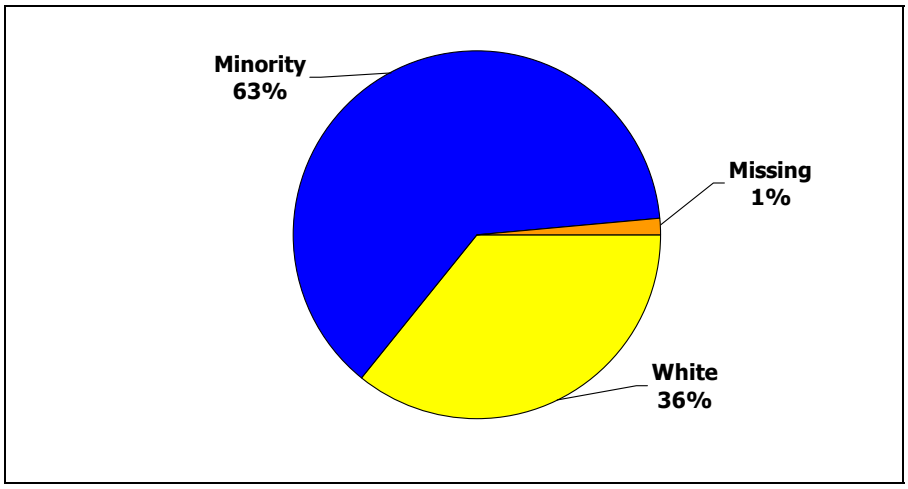


Figure 4-9. Race of patients receiving vaccinations

Table associated with Figure 4-9
Detailed breakdown of race/ethnicity for patients receiving vaccinations

Race	Frequency	Percent
Black	3,579	34.4%
Alaska Native	1	0.01%
American Indian	70	0.7%
Native Hawaiian/Other Pacific Islander	53	0.5%
Asian	115	1.1%
White	3,737	35.9%
Other	47	0.5%
Multi-racial	39	0.4%
Hispanic	2,609	25.1%
Missing	151	1.5%
TOTAL	**10,401**	

As Figure 4-10 shows, a little more than one-third of the patients receiving the vaccinations were Black/African American and 25 percent were of Hispanic ethnicity. Thirty-six percent of the patients receiving the vaccine were White.

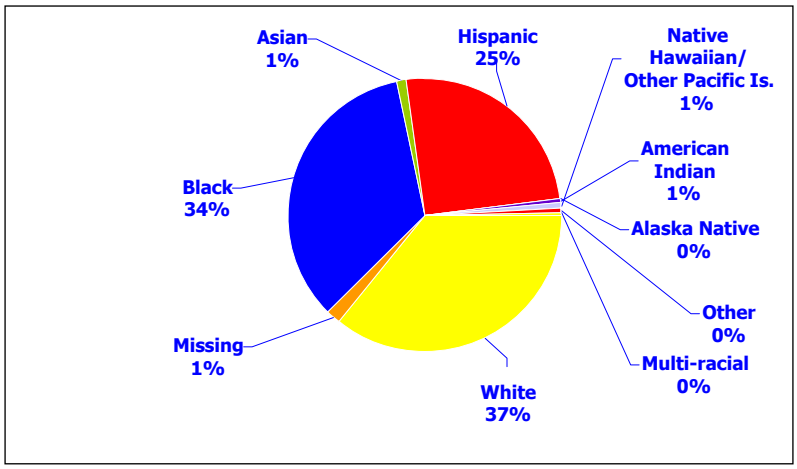


Figure 4-10. Detailed breakdown of race/ethnicity for patients receiving vaccinations

Table associated with Figure 4-10
Race/ethnicity of patients receiving vaccination, by site type

	Black	Alaska Native	American Indian	Native Hawaiian / Other Pacific Islander	Asian	White	Other	Multi-racial	Hispanic	Missing
Outpatient	42	0	3	1	0	166	0	2	29	8
Residential	79	0	1	0	3	153	0	1	6	10
Methadone	1,519	1	29	52	66	1,922	5	28	1,726	93
Prevention/ Outreach	1,899	0	37	0	45	1,372	41	8	846	24
TOTAL	**3,539**	**1**	**70**	**53**	**114**	**3,613**	**46**	**39**	**2,607**	**135**

The risk factor most often reported by the sites at the time of vaccination was intravenous drug use (51%), followed by other risk behaviors (22%), being hepatitis C positive (20%), and risky sexual behaviors (20%). Four percent of patients reported being HIV positive, as shown in Table 4-4.

Of patients who reported other risk behaviors (2,390 in total), 40 percent (958 patients) reported drug use. Other reported risk behaviors included tattoo, acupuncture, and body piercing (3%) and alcohol use (2%).

Table 4-4. Risk factors reported by patients receiving vaccinations

Risk factor	Frequency	Percent
HIV positive	*386*	*3.7*
Hepatitis C positive	*2,104*	*20.2*
Liver disease	*524*	*5.0*
Previous diagnosis of sexually transmitted disease	*872*	*8.4*
Intravenous drug user	*5,292*	*50.9*
Risky sexual behaviors	*2,094*	*20.1*
Other	*2,390*	*22.3*
Drug use	*892*	*37.3*
Alcohol use	*37*	*1.5*
Alcohol and drug use	*66*	*2.8*
Occupational risk	*235*	*9.8*
High-risk community	*39*	*1.6*
Tattoo, acupuncture, body piercing	*72*	*3.0*
Other	*60*	*2.5*
Unclear responses	*148*	*6.2*
Prior HAV/HBV infection	*21*	*0.9*
No risk factors	*303*	*12.7*
Preventative measure	*422*	*17.7*
Missing	*95*	*4.0*

Blacks/African Americans receiving the vaccine were concentrated in the outreach sites, while Whites receiving the vaccine were concentrated in outpatient and residential sites, as shown in Figure 4-11.

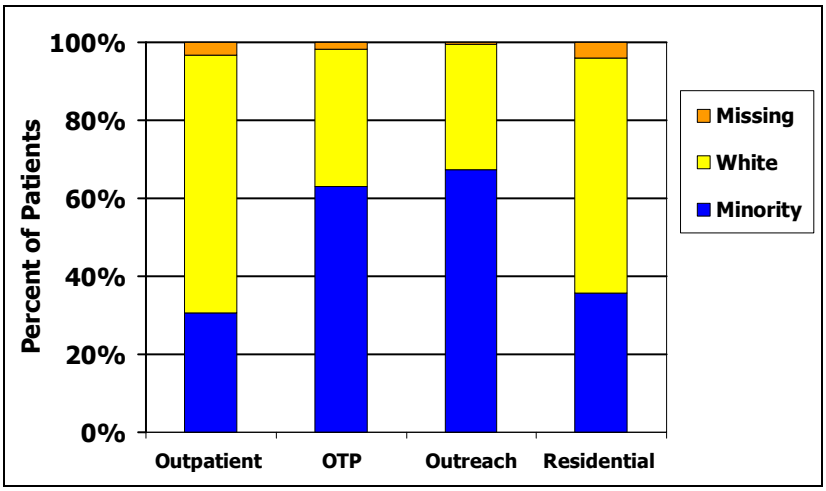


Figure 4-11. Race/ethnicity of patients receiving vaccination, by site type

Table associated with Figure 4-11
Minority status of patients receiving vaccination, by site type

	Minority Number	Minority Percent	White Number	White Percent	Missing Number	Missing Percent	Total Number
Outpatient	77	30.7%	166	66.1%	8	3.2%	251
Residential	90	35.6%	153	60.5%	10	4.0%	253
Methadone	3,426	63.0%	1,922	35.3%	93	1.7%	5,441
Prevention/Outreach	2,876	67.3%	1,372	32.1%	24	0.6%	4,272
TOTAL	**6,469**		**3,613**		**135**		

Minority patients (which includes Hispanics) receiving the vaccinations tended to be concentrated in outreach programs and OTPs, whereas White patients receiving the vaccine were concentrated in outpatient and residential facilities, as shown in Figure 4-12.

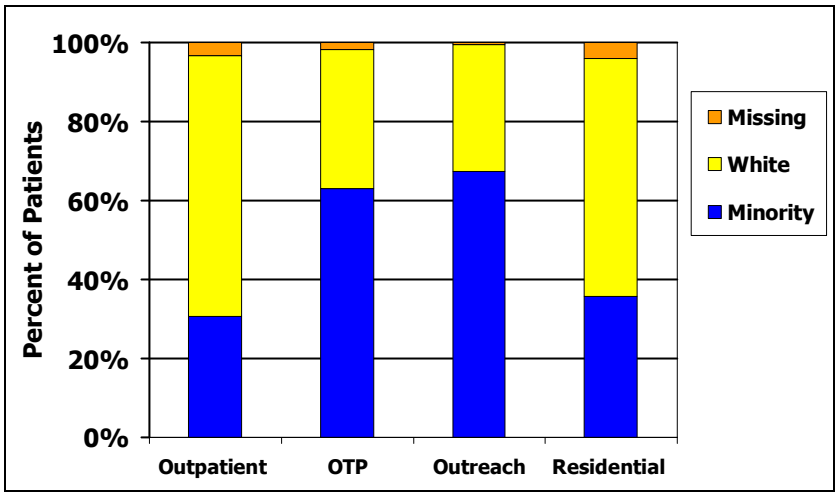


Figure 4-12. Minority status of patients receiving vaccination, by site type

4.5 Site Feedback

At the conclusion of data collection, Westat asked the site contacts for any recommendations to CSAT and advice for sites that might participate in the vaccination program in the future. The information that follows is what they provided.

- Most sites were appreciative of the opportunity to participate in the program. They were grateful for the chance to provide their patients with a benefit they would not have otherwise received. However, sites without a pre-existing vaccination program, were overwhelmed by the level of staff commitment required to set up and implement the vaccination program, even though they had thought they were prepared to do so at the beginning of the project. This finding was true regardless of the type of site involved. Many sites were not able to participate as fully as expected because of limited resources and staff turnover.

- Providers that did not have medical staff on-site found participating in the vaccination program challenging but not impossible. Coordination with the department of health or other organizations that could administer the vaccinations was extremely time consuming, but ultimately productive. With regard to the presence of medical staff on-site, OTPs were at an advantage when compared to other site types, which often had to find other arrangements for medical coverage.

- Several OTPs had chosen to vaccinate their more stable patients in methadone treatment in an attempt to maximize their vaccination followup rates. However, these same sites would have liked to have expanded the program to include persons in outpatient and outreach programs, who were often at greater risk but who were more transient and were unlikely to receive followup doses. The site contacts would like CSAT to allow them to specifically target these more transient populations if there is another study.

- Several sites, regardless of type, mentioned that the timeliness of the vaccine delivery needed to be improved and that the process of receiving the vaccine and the data collection materials should be synchronized and streamlined. They recommended the establishment of a single point of contact for vaccine/needle delivery and data collection forms.

- Sites without an established vaccination program noted that both patient and staff education is critical. Many staff did not really understand the importance of the vaccination and so were unable to communicate this to the patients. Also, handouts and posters would be helpful. Many site contacts said that they lacked the necessary resources to adequately train staff and patients and wondered if CSAT could provide educational materials and fact sheets. The finding was true for all inexperienced sites, regardless of type.

- Most sites noted difficulties in administering followup doses, particularly once patients were out of treatment. Followup dose administration was less difficult for OTPs, where patients were typically in treatment for many months. In all non-OTP sites, sites reported that a high proportion of patients initially vaccinated were difficult to find for follow-up because of incarceration, dropping out of treatment, or treatment termination. Sites that mailed reminder letters and placed telephone calls to patients often discovered that the address was no longer valid or that the telephone had been disconnected. Recommendations for followup included the following:

  - Obtain additional contact information at the time of enrollment, including names and telephone numbers of a family member, significant other, or friend who would most likely know the whereabouts of the patient if he or she could not be reached at the original telephone number;

  - Enlist the assistance of case managers;

  - Give patients wallet-sized reminder cards to increase the followup rate;

  - Ask CSAT to provide funds for incentives to patients for returning for followup doses; and

  - Ask CSAT to provide sites with guidelines and/or a spreadsheet or database program for tracking and following up with patients.

- Most sites found that data collection was not too burdensome once established. Sites that were required to fill out their own forms in addition to the study's and sites that were participating in multiple studies found the multiple data forms burdensome. Many sites divided the tasks to decrease the burden, with one staff member administering the vaccine while a second completed the data collection form.

- Filling out the refusal forms was reportedly very burdensome. This was particularly evident in sites offering the vaccinations to all patients, regardless of the type of site involved. There was ambiguity surrounding what constituted a refusal. Completion of the refusal form was much more difficult and time consuming than completion of the data collection form.

- Participating in weekly calls was generally well accepted. Sites that complained about the frequency of contact also had difficulty returning forms; sites that were well organized and returned the forms weekly generally had very brief contact with Westat and were less burdened by the calls. Regular contact with the Westat coordinator served as a good reminder to continue offering the vaccine, completing the data collection forms, and sending them to Westat. There was no difference among the site types with respect to this finding.

- One contact noted that the shipment of additional vaccine could be held until the data forms for the previous shipment was received, thus providing motivation for sending in the forms. Notably, few sites had difficulty sending forms in weekly; this strategy could help with the stragglers.

- Several sites with Internet capability noted that collecting data via the Web would be more efficient. However, the majority of the sites did not have easy Internet access to accomplish this. There seemed to be no relationship between the type of site and willingness to use the Internet for data collection.

- All sites reported that they would have no difficulty administering the remainder of the Twinrix® doses before the 2-year expiration date for the vaccine. Several sites mentioned the possibility of partnering with other service organizations or the department of health in their area, while other sites indicated that they would be using the vaccine for the benefit of their own patients.

5 . DISCUSSION

The findings of this study establish the feasibility of a Twinrix® vaccination delivery system administered through sites providing services to persons treated or at risk for substance abuse. Sites in this feasibility study differed substantially in the level of experience and the resources available to support the program, and, to a certain extent, this is reflected in the variation in number of doses delivered in the sites. Furthermore, the program required significant organizational commitment, unexpected by many of the sites that did not have an operational vaccination program in place at the start of the study.

In the following sections, we outline factors that served as barriers and facilitators to the vaccination program, as well as recommendations for the future.

5.1 Barriers to the Vaccination Program

The largest barrier to the vaccination program was lack of experience in administering vaccinations. Sites without experience seemed to vastly underestimate the level of effort required to initiate the process. Finding a location for cold storage and the monitoring of that storage, finding qualified staff to administer the vaccinations, developing protocols for potential adverse medical reactions, and training staff to educate patients and offer the vaccinations all took substantial time to complete. Notably, while OTPs ostensibly provide medical care, many needed to train or retrain staff to work with the vaccine. Many non-OTP sites did not have medical staff on-site, so arranging for vaccinations administered by outside staff was a challenge involving multiple meetings.

A second barrier encountered by many sites was a dearth of resources to support the vaccination effort. It appeared that many sites strained to find staff to manage the vaccination and data collection process. It seemed that sites that were successful either (1) were able to find committed individuals willing to do extra work and persuade others to do extra work or (2) had a vaccination program funded through other means. Sites also reported that they did not have the resources to invest in a hepatitis education program or materials, which they said would have been helpful in reaching out to the patients. Many sites also did not have available resources to track and contact patients for followup doses.

Another key barrier to the successful implementation of the program was the distance between the person signing the SAMHSA letter of agreement for the vaccination program and the person(s) actually administering the vaccinations. At some larger sites, staff were resentful about the addition of what they saw as extra duties that were of secondary importance to substance abuse treatment

work. Therefore, the signer of the letter spent significant time obtaining "buy-in" from several administrators within the organization before the program could succeed. Similarly, sites partnering with the department of health were delayed significantly in initiating the program because of the time necessary for coordinating activities across organizational boundaries. The coordination process was particularly difficult where there was no clear line of authority between the signer of the letter and the treatment/outreach location or the vaccinators.

An additional barrier encountered was a burdensome risk assessment and screening process. In an effort to maximize the effects of the vaccination program, some sites put these procedures into place to identify patients at greatest risk and to screen out those who were ineligible. While some sites limited screening to paper-and-pencil risk assessment forms, other sites conducted interviews and performed blood tests to determine if antibodies were already present. These procedures were resource intensive, particularly when results were then discussed individually with the patient. While the screening procedures may have ensured the best use of the vaccine, they also limited the number of patients who could be vaccinated, because relatively few patients could be screened over time. There is also a question of the degree to which sites can and should be able to carry the costs of these screening processes.

Overall (with some notable exceptions), most OTPs, outpatient programs, and residential sites seemed to have a culture that was more oriented to meeting the immediate demands of patient care than to disease prevention services. It seemed as if part of the delay in initiating the programs was related to educating the staff on-site about the importance of the vaccination series. In contrast, the outreach sites seemed to have little trouble incorporating the vaccinations into their programs; disease prevention services seemed more in harmony with their culture, and logistics issues seemed to have been more easily resolved in these sites.

Another barrier to implementation of the program involved shifting administrative structures and staff turnover. A high proportion of site contacts moved on from their positions, and some organizations (such as the Addiction Prevention and Recovery Administration) had complete turnover in multiple positions.

In addition, a high proportion of sites had no systems for tracking or following patients after they left the treatment center. The residential and outpatient programs were particularly challenged by this factor, noting that their patients often provided false or out-of-date contact information. The sites reported limited resources for both setting up the followup system and contacting patients.

Another barrier identified during the study was that vaccinators seemed to prefer certain needles over others. Delays in delivery of the preferred needles to a particular site added a certain amount of confusion at the initiation of some programs. In the future, sites should be required to specify the type of needles to be used at the time the vaccine is ordered.

Finally, there was one unexpected factor that decreased the number of doses administered through the program, but that was quite a positive finding. Sites in the San Francisco area reported that a high number of patients had been previously vaccinated through public health programs, so fewer doses than expected were delivered during the study.

Findings regarding barriers are summarized in Table 5-1.

Table 5-1. Barriers to vaccination administration identified during the study

Barriers
• Lack of experience administering a vaccination program - Finding a location for monitored cold storage - Finding qualified staff to administer vaccinations - Developing a protocol for potential adverse medical events - Training staff to educate patients and make the vaccination offer
• Lack of financial and human resources
• Difficulty obtaining commitment to the vaccination program across all levels of the organization
• Difficulty coordinating activities across organizational borders (in those sites requiring assistance from a local department of health)
• Burdensome risk assessments and screening procedures in sites where they were implemented
• In all but outreach sites, changing a treatment culture from one that is focused on addictions to one that is oriented toward overall patient health
• High level of staff turnover
• Few systems in place to follow patients after leaving treatment
• Provider preferences in type of vaccination needle were not anticipated or accommodated in a timely manner
• A lower number of eligible patients than anticipated (many had been previously vaccinated

5.2 Factors Facilitating the Implementation of the Vaccination Program

The presence of a local champion was key to the success of the program in all sites. Sites that had a director or site contact who was committed to the program were able to make progress. In many sites, the local champion went above and beyond the call of duty, working extra hours and pressuring, coaxing, and persuading colleagues to assist with the project. Some local champions were doing the work as part of their job; a substantial number of others were donating a certain part of their free time. This has repercussions for future vaccination programs; unless resources are available for paying these individuals through grants, the local department of health, or other mechanisms, it seems unlikely that they would be able to commit to this level of effort over the long term.

Not surprisingly, other factors that assisted in the implementation of the vaccination program mirror the barriers previously mentioned in Section 5.1. Experience in administering vaccinations made the initiation of the program simple; some sites simply continued a pre-existing vaccination program using the SAMHSA supply and incorporated the data collection process very easily.

Some sites also had a hepatitis education program in place, which indicated that both staff and patients were aware of the importance of the vaccinations and that the workplace culture had assimilated disease prevention goals, rather than being narrowly focused on substance abuse treatment. These sites were quite successful in delivering doses within the time period of the study.

Sites that were able to "piggy-back" the SAMHSA vaccine on grants or other funding sources for vaccinations or education were better able to initiate and implement the vaccination program. In addition, sites that had a pre-existing system for following patients over time were able to deliver more followup doses. OTPs, for example, had systems for tracking methadone doses and were easily able to modify them to track vaccine doses. Sites requiring data collection for other research were able to administer third doses at the final followup date.

Sites that implemented a blitz strategy were able to deliver a large number of doses within the short time window of the study. The strategy was also advantageous for sites with minimal resources, which could commit time and staff for 3 days of massive effort (corresponding to the three vaccination doses) but could otherwise conduct business as usual.

Sites that minimized screening procedures also vaccinated more people, although it is unclear how many vaccinated patients might have been excluded if the screening criteria had been implemented. As previously mentioned, screening is resource intensive.

Sites with longer periods of treatment and patient contact were better able to deliver a higher number of third vaccination doses. OTPs had patients that tended to be in treatment over the long term and were able to utilize a clinical system that facilitated tracking followup doses. However, with the exception of Beth Israel, the OTPs administered doses to fewer people overall than did the outreach sites. Outreach sites administered a high number of initial doses but had a harder time tracking people for followup. Importantly, the outreach sites seemed to be vaccinating persons at higher risk for all kinds of illnesses as compared to individuals in methadone treatment.

Finally, the data collection process appeared to serve as an impetus for some sites to follow through on implementation. When Westat received few or no dose forms, problem sites were identified and site administrators were contacted to remind them of their commitments regarding vaccination administration. In most cases, this contact was enough to prod the administration into action.

Findings regarding facilitators of vaccination administration are summarized in Table 5-2.

Table 5-2. Facilitators to vaccination administration identified during the study

Facilitators
• The presence of a local champion • A pre-existing vaccination program, with established protocols, staff, and educational programs • Funding through grants or public health programs for some part of the vaccination program • Pre-existing data collection systems that could be minimally modified to track doses • The use of a blitz vaccination strategy to deliver a large number of doses within the short time frame of the study • Minimization of resource-intensive screening strategies, which maximizes the number of persons vaccinated (but results in inclusion of some ineligible or low-risk patients) • OTPs, having longer periods of treatment and patient contact were better able to deliver the second and third doses. • Outreach programs were able to administer vaccinations to a large number of high-risk individuals, but had a lower follow up vaccination rate. • The data collection process seemed to serve as an impetus for some sites to follow through on implementation of the vaccination program.

5.3 Recommendations

This study clearly demonstrates that the development and administration of a vaccination program is a resource-intensive task, regardless of the type of site involved. With all doses shipped, fewer doses than expected were given within the time frame of the study primarily because a significant number of sites had no pre-existing program and were delayed due to time needed for program development. Sites with pre-existing vaccination programs delivered more doses, and had resources available for patient and staff education and for the support of a vaccination coordinator who could take responsibility for administration. This suggests that, in the future, either (1) recipients of SAMHSA vaccine should demonstrate that a vaccination program is currently funded and in place through some other mechanism or (2) SAMHSA should make resources available for program development, and perhaps for ongoing administration.

This was a demonstration project that attempted to learn more about current immunization practices in programs considered to be models for this enhanced service that is within the current standard of recommended practice. If in future programs, SAMHSA chooses to include providers that have not yet implemented a vaccination program, the rate of program development could be greatly hastened through providing participating sites with the following:

- Model consent forms;
- Risk assessment guidelines;
- Patient educational materials (poster and fact sheet) in English and Spanish;
- Information on vaccination strategies, including blitz versus ongoing;
- Followup tools, such as a model spreadsheet that could track patient names, contact information, and due dates for followup vaccinations; guidelines for vaccination procedures, including recommendations for screening and blitz methods; and model follow-up vaccination reminder cards for patients' wallets; and
- A list of sites participating in the study, so that sites can share information.

Sites with limited resources should consider implementing a patient education program culminating in a vaccination blitz. This strategy minimizes disruption to site procedures and requires that staff be committed for 3 days corresponding to the first, second, and third doses. This strategy also works well for sites without on-site medical expertise, since vaccinators can be brought in from the department of health or other organizations on those days. As previously mentioned, however, the cost of this method is that some proportion of vaccinated individuals will be lower risk or ineligible.

Both OTPs and outreach sites administered a high number of doses. OTPs were very successful in administering multiple vaccination doses, and in many sites were able to vaccinate a large number of at-risk persons. In choosing future sites for a vaccination program, SAMHSA should decide whether the goal of future vaccination programs is to maximize the number of patients receiving any dose or to maximize the number who receives the full vaccination series. This will determine the mix of sites recruited. While OTPs seem to be most successful in administering the full vaccination series, outreach programs seem to be able to vaccinate a larger number of persons. Notably, patients vaccinated through outreach programs should be considered at very high risk, since many are active users not yet in treatment, while persons in OTPs are in methadone treatment and may be considered more stable in comparison.

If a proposed vaccination program crosses organizational lines (such as programs requiring assistance from the department of health or outside researchers vaccinating at treatment sites), a letter of cooperation should be required. Working across organizational boundaries is difficult, and a commitment obtained prior to vaccine delivery would be ideal.

Collecting information on doses delivered appears to serve a useful quality control function. The data collection process allowed for the identification of problems at the site, and it held the site accountable for following through on its vaccination program, so that the vaccine was used in a timely manner. Most sites found that collecting dose information was easy.

Collecting information on refusals is not practical, effective, or recommended. If information on refusals were deemed critical to a study, a central, standardized process for tracking vaccination offers would need to be put in place. This would be expensive. A central log could track vaccination offers and patient responses for each patient treated at a site. The central log could minimize the errors related to multiple offers and patients' acceptance after previous refusals. However, maintenance and coordination of activities related to the log would require funding for a central vaccination coordinator.

In addition, the process for collecting and analyzing refusal information would need to take into account differences in sites' procedures for informing and offering vaccinations to patients. Specifically, some sites make no individual, direct offer to each and every patient, but rely instead on patients approaching staff after exposure to educational materials or a presentation on hepatitis. With effort, it is possible to track which patients were exposed to an educational program and to track nonresponse after the exposure. However, it is unlikely that this nonresponse rate is equivalent to a refusal rate, which would be obtained by those sites with staff making direct, individual offers of vaccination. Thus, while it is possible to collect information from sites with disparate procedures for offering vaccinations, it is unclear whether the information is comparable; is nonresponse to an education program about hepatitis comparable to a refusal rate? Before implementation of a study to track refusals, the cost and utility of collecting refusal data should be carefully considered.

For this feasibility study, vaccine and needle delivery were handled by a contractor that worked independently from the evaluation process. This separation caused confusion, because site contacts spoke to one group of people to order vaccine and needles and to Westat to develop and report on vaccination procedures. In the midst of a harried work day, site contacts had difficulty tracking who did what, and some were resentful about needing to make multiple contacts to keep the project running. A single point of contact for vaccine/needle ordering and delivery and data collection would greatly improve efficiency and decrease confusion.

6 . CONCLUSION

This study has demonstrated the feasibility of delivering 43,950 doses of vaccine within a 9-month period to a variety of outreach and treatment programs focused on immunizing a population at high risk for liver failure and cancer. Within that time period and for 6 months following, an independent evaluation was able to track administering 20,933 Twinrix® vaccinations to 10,401 patients through sites treating or providing outreach to persons at risk for substance abuse. The number of doses administered did not reach the number targeted during the study data collection window, primarily because many sites needed time to integrate an enhanced immunization services into the array of routine services that were currently being offered, thus delaying implementation of many programs that would have allowed full evaluation within the evaluation period.

Sites with an established vaccination program reported fewer vaccinations administered than initially expected, primarily because sites had underestimated the number of patients that had already been vaccinated. A key finding of the study is that the development of a vaccination program is resource intensive and goes beyond the staff, knowledge, and skill needed to immunize a patient that would be reflected in a program's standard operating procedure or protocol. Depending on internal resources and capability, key relationships are sometimes needed with public health agencies and primary care services that require internal memoranda of understanding that take time to generate. In some settings, the patients themselves may not choose to be immunized, given that the needle itself may also be a relapse trigger or because of misperceptions related to the actual vaccine, thus requiring more patient education and increased time building trust to provide an otherwise safe and recommended prevention service.

Future vaccination initiatives should also consider linking more closely program management and program evaluation so that evaluation data can be quickly factored into project management. In this initiative, project management essentially required appropriate shipping and tracking of 43,950 doses of vaccine over a 9-month period to 53 vaccine receiving sites connected to 38 programs that administered vaccine at 84 vaccination sites. The evaluation was done independently covering 36 programs and 82 vaccination sites that were possible under the time and evaluation constraints for that evaluation to document vaccine dose delivery to indicated patients. Integrating project evaluation with project management also decreases communication problems that arise when different people are discussing issues related to shipping, vaccination, and evaluation independently of each other. While vaccine shipped had a long shelf life, with projection that all will be used beyond the evaluation period, allowing utilization information that came from the evaluation would have allowed shipments to be tailored specifically to program vaccine utilization.

APPENDIX A

Letter of Invitation, Hepatitis A and B Vaccine Information Sheets (VIS), and List of Participating Programs

ADDRESS (MAIL MERGE FROM LIST)

Dear (CONTACT PERSON):

The Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Treatment (CSAT) is embarking on a Hepatitis A and B Vaccine Initiative that will provide Twinrix® vaccine, at no cost to substance abuse treatment programs, as an infection prevention measure, as well as reduce the comorbidity of progressive liver disease associated with a substance use disorder. This SAMHSA initiative seeks to provide, concomitant with vaccination, patient education on hepatitis A and B infection as part of each facility's substance abuse treatment program.

SAMHSA/CSAT is developing a pilot project to demonstrate the feasibility of reaching individuals at risk for vaccine preventable infectious hepatitis though drug abuse treatment facilities. Approximately 65 sites that provide substance abuse services to targeted populations will be selected to participate in the pilot project. Participating programs will be recruited from: 1) opioid treatment programs, 2) office-based physicians with buprenorphine waivers, 3) CSAT Targeted Capacity Expansion (TCE) HIV programs, and 4) Center for Substance Abuse Prevention TCE HIV programs. Currently, federal funds are being allocated for a large purchase of Twinrix® vaccine and an assessment of the impact this initiative will have on substance abuse/dependence patient populations at high risk for hepatitis C or HIV infection.

This letter is to ascertain the level of interest of your treatment program to participate in the pilot project. The requirement for a services program to participate is an established immunization program or an established ongoing immunization referral system as part of your core treatment approach. If you meet this requirement, your program is invited to participate in the SAMHSA Hepatitis A and B Vaccine Initiative. If interested, SAMHSA will provide educational materials and Twinrix® vaccine to your program for your vaccine eligible patients.

In return for providing both the vaccine and educational material, and to document the feasibility of potentially broadening this initiative to cover all patients in treatment, I am requesting that you review and sign the enclosed Letter of Agreement that will establish a collaborative relationship between your clinic or program and CSAT. This will enable us to operate under a clinical exemption from the Office of Management and Budget for data collection purposes and provide both initial and ongoing feedback on the performance of this project.

Page 2

Thank you for your initial interest in this important initiative. Please contact the project officer for this initiative, Kenneth Hoffman, M.D., M.P.H., at the above address, or by telephone at 240-276-2701 or e-mail at Kenneth.hoffman@samhsa.hhs.gov.

Sincerely,

H. Westley Clark, M.D., J.D., M.P.H., CAS, FASAM
Director
Center for Substance Abuse Treatment

Enclosures

Background and Rationale for the Hepatitis A and B Vaccination Initiative

Hepatitis C infection and infection with the human immunodeficiency virus are frequent co-occurring infectious diseases in drug users and especially intravenous drug users. Co-occurring infections complicate the medical management of substance abuse treatment, particularly in the context of medication assistance treatment for opioid dependence. Controlling the epidemic of hepatitis infection in injection drug users requires the development and implementation of prevention, care and treatment strategies to reduce liver disease in persons who receive pharmacological therapies for opioid addiction. A specific strategy to prevent liver disease in these patients is to vaccinate eligible individuals against hepatitis A and hepatitis B infections.

Immunization is recommended for all susceptible persons 18 years of age and older who are, or will be, at risk of exposure to both hepatitis A and B viruses, including:

1) Residents of drug and alcohol treatment centers

2) Users of injectible illicit drugs

3) Men who have sex with men

4) Persons at increased risk of disease due to their sexual practices

5) Patients with chronic liver disease, including alcoholic cirrhosis, chronic hepatitis C, autoimmune hepatitis and primary biliary cirrhosis would benefit from hepatitis A and B immunization

6) Individuals who are at increased risk for HBV infection and who are close household contacts of patients with acute or relapsing hepatitis A and individuals who are at increased risk for HAV infection and who are close household contacts of individuals with acute or chronic hepatitis B infection, as well as

7) Individuals at risk for progressive liver disease, including fulminant liver failure, on infection with hepatitis A and or hepatitis B. This includes individuals with HIV infection.

Twinrix® vaccine is the only FDA approved combination hepatitis A and hepatitis B vaccine, and is provided via a standard 3-dose regimen by intramuscular injection, given on a 0-, 1- and 6-month schedule. Twinrix® offers an opportunity to protect patients against both HAV and HBV with one combination vaccine. Twinrix® requires two fewer injections and has the potential for improved tolerability because of reduced number of injections. This may increase patient compliance, lead to time savings for you and your staff, and reduce administration costs for your practice or organization

Twinrix® is generally well tolerated. Its safety profile was established in clinical trials involving the administration of 6,594 doses to 2,164 individuals and during routine clinical use of the vaccine outside the United States. The most common adverse events in clinical trials included soreness at the injection site, headache, and fatigue. They were mild and self-limiting, and did not last more than 48 hours. Adverse events seen with Twinrix® were similar to those observed after vaccination with monovalent vaccines. As with any vaccine, vaccination with Twinrix® may not protect 100 percent of recipients.

Twinrix® is contraindicated in people with known hypersensitivity to yeast or any component of the vaccine in subjects having shown signs of hypersensitivity after previous administration of Twinrix® or monovalent hepatitis A or hepatitis B vaccines.

Evaluation Plan

The primary purpose of the project is to explore the feasibility and level of success of delivering the combined hepatitis A and B vaccination in nontraditional substance abuse treatment facilities such as opioid treatment programs and community outreach settings to reach patients infected with or at- risk of HIV or hepatitis C.

The evaluation is to determine how vaccination is integrated into a current treatment program. This will be done through an analysis of current standard operating procedures and vaccine distribution patterns that may involve one or more cooperating agencies or programs involved in the management of patients with substance use disorders.

Following the illustrated evaluation plan on the following page, the following data elements will be collected from existing clinical information:

1. Client ID (non-personally-identifiable, unique identifier)
2. Age
3. Race/ethnicity
4. Gender
5. Disease status (HIV, HCV, SUDs)
6. Other medical issues or illness
7. Known HCV or HIV serologic status of those vaccinated
8. Reason for refusal
9. Clinical contraindications?
    - If so, what kind?
1. Vaccination decision to begin immunization series
2. Change in serostatus (If so, what is it?)
3. Sequence of vaccine (level of adherence)
    - First dose
    - Second doses
    - Third doses
1. Adverse events and patient problems resulting in discontinuing series.

Letter of Agreement
Between the

Substance Abuse and Mental Health Services Administration

Center for Substance Abuse Treatment
and Participating Programs in the Hepatitis A and B Vaccine Initiative

Determining the Feasibility of Enhancing Immunization to Individuals in Substance Abuse Treatment Programs Who are at High Risk for Severe Liver Disease

The Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Treatment (CSAT) has identified your program as one that currently provides immunizations to patients currently in treatment for a substance use disorder. SAMHSA/CSAT currently has the ability to purchase a limited number of doses of a combined hepatitis A and B vaccine (TWINRIX®) for use by participating substance abuse treatment programs to enhance the program's capacity to vaccinate patients who might be seropositive for HIV or hepatitis C virus. This Letter of Agreement, once signed, will establish your program as a partner with CSAT on establishing the feasibility of enhancing hepatitis vaccination of patients at high risk for severe liver disease because they may currently be seropositive for either HIV or hepatitis C virus.

SAMHSA/CSAT has contracted with Infection Control Consultation Services, Inc. to distribute TWINRIX® to your program and all other programs that have a letter of agreement to participate with CSAT in this demonstration project. Infection Control Consultation Services, Inc will work with your designated point of contact to ensure timely arrival of the vaccine to your vaccination site and allow Infection Control Consultation Services, Inc. to track vaccine distribution.

SAMHSA/CSAT has contracted with Westat to collect and analyze vaccine distribution, program characteristics and relevant patient data, in conformance with HIPAA and 42CFR part 2 regulations, to determine the impact and cost and extending this initiative across all substance abuse treatment programs. Westat will work with your designated point of contact for the data needed to evaluate the numbers of individuals immunized with first, second and third vaccinations.

Vaccine availability and distribution will occur over a 12-month period starting approximately in January 2006 with the total project occurring over 30 months. It is understood that by executing this letter of agreement, your treatment program will remain as a CSAT partner in this project throughout the 30-month period.

SAMHSA/CSAT will provide TWINRIX® to your program on demand as long as there is vaccine to meet planned demand from all participating programs. Your CSAT point of contact throughout this project will be Kenneth Hoffman, M.D., M.P.H., telephone: 240-276-2701 e-mail: kenneth.hoffman@samhsa.hhs.gov.

The enclosed evaluation plan and sample medical data points reflect our program evaluation needs as well as medical issues related to vaccinations. At the population level, with your help, Westat will assess the population of patients eligible for immunizations. At the individual level, Westat will collect baseline information at the individual patient level regarding gender, age, ethnicity, substance use disorder diagnosis, any diagnosis related to viral hepatitis, and whether the patient is HIV positive. Specific data collection needs may be modified depending on continuing feedback that will occur as a result of the partnership between your program and CSAT.

SAMHSA/CSAT will provide progress reports to your program and will forward a complete report of this project after conclusion of this demonstration project.

To begin the evaluation process, CSAT would like to better understand your current immunization program. With this signed agreement, please send either your Standard Operating Procedure (SOP) related to immunization; or a brief description of 1) your current vaccine acquisition process, 2) your current vaccine assessment and immunization practice, and 3) any relationship that might exist between your program and any other program involved in vaccinating your patients.

Substance Abuse Treatment Program Address and Contact Information:

PROGRAM NAME:

ADDRESS:

TELEPHONE NUMBER:

FAX NUMBER:

DESIGNATED POINT OF CONTACT:

E-MAIL ADDRESS:

SIGNED_____ _____
(Substance Abuse Treatment Program Representative) Date

Vaccine Acquisition Program and Point of Contact (If different from above)

PROGRAM NAME:

ADDRESS:

TELEPHONE NUMBER:

FAX NUMBER:

DESIGNATED POINT OF CONTACT:

E-MAIL ADDRESS:

SIGNED_____ _____
(Vaccine Requisition Officer) Date

SAMHSA Center for Substance Abuse Treatment

1 Choke Cherry Road
Rockville, MD 20857
ATTN: Kenneth Hoffman, M.D., M.P.H
kenneth.hoffman@samhsa.hhs.gov

SIGNED_____ _____
H. Westley Clark, M.D., J.D., M.P.H., CAS, FASAM Date
Director
Center for Substance Abuse Treatment
Enclosure

Hepatitis A Vaccine: What you need to know.

1. What is hepatitis A?

Hepatitis A is a serious liver disease caused by the hepatitis A virus (H.A.V.). H.A.V. is found in the stool of persons with hepatitis A. It is usually spread by close personal contact and sometimes by eating food or drinking water containing H.A.V.

Hepatitis A can cause:
mild "flu-like" illness,
jaundice (yellow skin or eyes),
severe stomach pains and diarrhea.

People with hepatitis A often have to be hospitalized (up to about 1 person in 5).

Sometimes, hepatitis A causes death (about 100 per year in the U.S.).

A person who has hepatitis A can easily pass the disease to others within the same household.

Hepatitis A vaccine can prevent hepatitis A.

2. Who should get hepatitis A vaccine and when?

Who?

Some people should be routinely vaccinated with hepatitis A vaccine:

- Persons 2 years of age and older traveling to or working in countries with high or intermediate prevalence of hepatitis A, such as those located in Central or South America, the Caribbean, Mexico, Asia (except Japan), Africa, and eastern Europe.

- Children and adolescents who live in states or communities where routine vaccination has been recommended.

- Men who have sex with men.

- Persons who use street drugs.

- Persons with chronic liver disease.

- Persons who are treated with clotting factor concentrates.

- Persons who work with H.A.V. infected primates or who work with H.A.V. in research laboratories.

Other people might get hepatitis A vaccine in special situations:

- Hepatitis A vaccine might be recommended for children or adolescents in communities where outbreaks of hepatitis A are occurring.

Hepatitis A vaccine is not licensed for children less than 2 years of age.

When?

The hepatitis A vaccine series may be started whenever a person is at risk of infection.

For travelers, the vaccine series should be started at least one month before traveling.

Two doses of the vaccine are needed for lasting protection. These doses should be given at least 6 months apart.

Hepatitis A vaccine may be given at the same time as other vaccines.

3. Some people should not get hepatitis A vaccine or should wait.

- Anyone who has ever had a severe (life-threatening) allergic reaction to a previous dose of hepatitis A vaccine should not get another dose.

- Anyone who has a severe (life threatening) allergy to any vaccine component should not get the vaccine. Tell your doctor if you have any severe allergies. Some hepatitis A vaccine contains alum and 2-phenoxyethanol.

- Anyone who moderately or severely ill at the time the shot is scheduled should probably wait until they recover. Ask your doctor or nurse. People with a mild illness can usually get the vaccine.

- Tell your doctor if you are pregnant. The safety of hepatitis A vaccine for pregnant women has not been determined. But there is no evidence that it is harmful to either pregnant women or their unborn babies. The risk, if any, is thought to be very low.

4. What are the risks from hepatitis A vaccine?

A vaccine, like any medicine, could possibly cause serious problems, such as severe allergic reactions. The risk of hepatitis A vaccine causing serious harm, or death, is extremely small.

Getting hepatitis A vaccine is much safer than getting the disease.

Mild problems

- soreness where the shot was given (about 1 out of 2 adults, and up to 1 out of 5 children)

- headache (about 1 out of 6 adults and 1 out of 20 children)

- loss of appetite (about 1 out of 12 children)

- tiredness (about 1 out of 14 adults)

If these problems occur, they usually last for 1 or 2 days.

Severe problems

- serious allergic reaction, within a few minutes to a few hours of the shot (very rare).

5. What if there is a moderate or severe problem?

What should I look for?

- Any unusual condition, such as a high fever or behavior changes. Signs of a serious allergic reaction can include difficulty breathing, hoarseness or wheezing, hives, paleness, weakness, a fast heart beat or dizziness.

What should I do?

- Call a doctor, or get the person to a doctor right away.

- Tell your doctor what happened, the date and time it happened, and when the vaccination was given.

- Ask your doctor, nurse, or health department to report the reaction by filing a Vaccine Adverse Event Reporting System (VAERS) form.

Or you can file this report through the VAERS web site at w.w.w. dot v.a.e.r.s. dot o.r.g., or by calling 1-800-822-7967.

VAERS does not provide medical advice.

6. How can I learn more?

- Ask your doctor or nurse. They can give you the vaccine package insert or suggest other sources of information.

- Call your local or state health department.

- Contact the Centers for Disease Control and Prevention (C.D.C.):

  Call 1-800-232-2522 (English)
  Call 1-800-232-0233 (Español)

Visit C.D.C. websites at: www.cdc.gov/hepatitis, or www.cdc.gov/nip.
Department of Health and Human Services
Centers for Disease Control and Prevention
National Immunization Program

Hepatitis A (8/4/04) Vaccine Information Statement

Hepatitis B Vaccine: What You Need to Know

1. Why get vaccinated?

Hepatitis B is a serious disease.

The hepatitis B virus (HBV) can cause short-term (acute) illness that leads to:
- loss of appetite
- diarrhea and vomiting
- tiredness
- jaundice (yellow skin or eyes)
- pain in muscles, joints, and stomach

It can also cause long-term (chronic) illness that leads to:
- liver damage (cirrhosis)
- liver cancer
- death

About 1.25 million people in the U.S. have chronic HBV infection.
Each year it is estimated that:
- 80,000 people, mostly young adults, get infected with HBV
- More than 11,000 people have to stay in the hospital because of hepatitis B
- 4,000 to 5,000 people die from chronic hepatitis B

Hepatitis B vaccine can prevent hepatitis B. It is the first anti-cancer vaccine because it can prevent a form of liver cancer.
2. How is hepatitis B virus spread?

Hepatitis B virus is spread through contact with the blood and body fluids of an infected person. A person can get infected in several ways, such as:

- by having unprotected sex with an infected person
- by sharing needles when injecting illegal drugs
- by being stuck with a used needle on the job
- during birth when the virus passes from an infected mother to her baby

About one third of people who are infected with hepatitis B in the United States don't know how they got it.

3. Who should get hepatitis B vaccine and when?

1) Everyone 18 years of age and younger

2) Adults over 18 who are at risk

Adults at risk for HBV infection include:

- people who have more than one sex partner in 6 months
- men who have sex with other men
- sex contacts of infected people
- people who inject illegal drugs
- health care workers and public safety workers who might be exposed to infected blood or body fluids
- household contacts of persons with chronic hepatitis B virus infection
- hemodialysis patients

If you are not sure whether you are at risk, ask your doctor or nurse.

People should get 3 doses of hepatitis B vaccine according to the following schedule. If you miss a dose or get behind schedule, get the next dose as soon as you can. There is no need to start over.

For an infant whose mother is infected with HBV:
- First Dose: Within 12 hours of birth
- Second Dose: 1 to 2 months of age
- Third Dose: 6 months of age

For an infant whose mother is not infected with HBV:
- First Dose: Birth to 2 months of age
- Second Dose: 1 to 4 months of age (at least 1 month after
- the first dose)
- Third Dose: 6 to 18 months of age

For an older child, adolescent, or adult:
- First Dose: Any time
- Second Dose: 1 to 2 months after the first dose
- Third Dose: 4 to 6 months after the first dose

For anyone:
- The second dose must be given at least 1 month after the first dose.
- The third dose must be given at least 2 months after the second dose and at least 4 months after the first.
- The third dose should not be given to infants younger than 6 months of age, because this could reduce long-term protection.
- Adolescents 11 to 15 years of age may need only two doses of hepatitis B vaccine, separated by 4 to 6 months. Ask your health care provider for details.

Hepatitis B vaccine may be given at the same time as other vaccines.

4. Some people should not get hepatitis B vaccine or should wait

People should not get hepatitis B vaccine if they have ever had a life-threatening allergic reaction to baker's yeast (the kind used for making bread) or to a previous dose of hepatitis B vaccine.

People who are moderately or severely ill at the time the shot is scheduled should usually wait until they recover before getting hepatitis B vaccine.

Ask your doctor or nurse for more information.

5. What are the risks from hepatitis B vaccine?

A vaccine, like any medicine, is capable of causing serious problems, such as severe allergic reactions. The risk of hepatitis B vaccine causing serious harm, or death, is extremely small.

Getting hepatitis B vaccine is much safer than getting hepatitis B disease.

Most people who get hepatitis B vaccine do not have any problems with it.

Mild problems

- soreness where the shot was given, lasting a day or two (up to 1 out of 11 children and adolescents, and about 1 out of 4 adults)
- mild to moderate fever (up to 1 out of 14 children and adolescents and 1 out of 100 adults)

Severe problems

- serious allergic reaction (very rare)

6. What if there is a moderate or severe reaction?

What should I look for?

Any unusual condition, such as a serious allergic reaction, high fever or unusual behavior. Serious allergic reactions are extremely rare with any vaccine. If one were to occur, it would be within a few minutes to a few hours after the shot. Signs can include difficulty breathing, hoarseness or wheezing, hives, paleness, weakness, a fast heart beat or dizziness.

What should I do?

- Call a doctor or get the person to a doctor right away.
- Tell your doctor what happened, the date and time it happened, and when the vaccination was given.
- Ask your doctor, nurse, or health department to file a Vaccine Adverse Event Reporting System (VAERS) form, or call VAERS yourself at 1-800-822-7967.

7. The National Vaccine Injury Compensation Program

In the rare event that you or your child has a serious reaction to a vaccine, a federal program has been created to help you pay for the care of those who have been harmed.

For details about the National Vaccine Injury Compensation Program, call 1-800-338-2382 or visit the program's website at http://www.hrsa.gov/osp/vicp

8. How can I learn more?

Ask your doctor or nurse. They can give you the vaccine package insert or suggest other sources of information.

Call your local or state health department's immunization program.

Contact the Centers for Disease Control and Prevention (CDC):

- Call 1-800-232-2522 or 1-888-443-7232 (English)
- Call 1-800-232-0233 (Espanol)
- Visit the National Immunization Program's website at http:/www.cdc.gov/nip or CDC's Division of Viral Hepatitis website at http://www.cdc.gov/hepatitis

U.S. Department of Health & Human Services
Centers for Disease Control and Prevention
National Immunization Program

Vaccine Information Statement
Hepatitis B
7/11/01

42 U.S.C. Section 300aa-26

Programs and Sites participating in the Hepatitis Vaccination Project

Provider	Acronym
The AIDS Council of Northeastern New York	AIDS New York (2 sites)
Addiction Prevention and Recovery Administration	APRA/Unity (8 sites)
AIDS Resource Center of Wisconsin	ARCW (7 sites)
Ayudantes, Inc.	Ayudantes (3 sites)
Beth Israel Methadone Maintenance Treatment Program	Beth Israel (13 sites)
CARITAS	Caritas
Comprehensive Health and Attitude Management Program Clinic	CHAMP Clinic
CODAC Behavioral Healthcare	CODAC
Community Health Center	Comm. Health Center (4 sites)
The Chicago Recovery Alliance	CRA
Crossroads Center	Crossroads (4 sites)
Center for Behavioral Health, Reno	Ctr. Beh. Health, Reno
Drug Addiction Services of Hawaii, Inc.	DASH Clinic
The Center for Drug Free Living, Inc.	Drug Free Living
Footprints (formerly Genesis House)	Footprints/Genesis House
Gadsden Treatment Center	Gadsden
Georgia Therapy Associates, Inc.	Georgia Therapy Assoc.
Gulf Coast Treatment Center	Gulf Coast
Hartford Dispensary	Hartford Dispensary (3 sites)
Hope Action Care	Hope Action Care
Kent/Sussex Counseling Services	Kent/Sussex
The Longview Wellness Center, Inc.	Longview
Miriam Hospital	Miriam Hospital (3 sites)
New Directions Treatment Services	New Directions
New Jersey Clinical Research Initiative/Street Outreach Assessment Referrals and Services	NJCRI
Organization to Achieve Solutions in Substance Abuse	OASIS
Project SPARC (Substance Abuse/HIV/Hepatitis Prevention for Adults Re-entering the Community)	Project SPARC
University of Minnesota—CUHCC/Recovery Resource Center	Recovery Resource Center
Rodgers South Substance Abuse Treatment Program	Rodgers
San Francisco General Hospital/Opiate Treatment Outpatient Program	SFGH
Shelby County Treatment Center	Shelby
Shoals Treatment Center	Shoals Treatment Center
Mental Health Mental Retardation, Tarrant County (MHMRTC)	Tarrant County (2 sites)
TERROS, Inc.	Terros (7 sites)
University of Alabama	UAB
University of Miami HIV/AIDS Buprenorphine Integration Treatment Program	Univ. of Miami
Yale University AIDS Program/Community Health Care Van	Yale

APPENDIX B

DATA COLLECTION FORMS

SAMHSA's HEPATITIS VACCINATION PROGRAM

Dose 1

Site ID: _____

Date received first dose of TWINRIX: _____ Westat Patient ID:

Demographics:

Gender

- ❑ Male
- ❑ Female
- ❑ Transgender/Other

Ethnicity

- ❑ Hispanic
- ❑ Non-Hispanic

Race (Check all that apply)

- ❑ Black/African American
- ❑ Alaska Native
- ❑ American Indian
- ❑ Native Hawaiian/Other Pacific Islander
- ❑ Asian
- ❑ White
- ❑ Other (specify): _____

Age (years)

- ❑ Under 18
- ❑ 18-24
- ❑ 25-34
- ❑ 35-44
- ❑ 45-54
- ❑ 55-64
- ❑ 65+

Risk Factors for Hepatitis A and Hepatitis B (Check all that apply):

- ❑ HIV positive
- ❑ HCV positive
- ❑ Liver disease
- ❑ Previous STD diagnosis
- ❑ Intravenous drug user
- ❑ Risky sexual behaviors
- ❑ Other (specify): _____

Vaccination Information:

- ❑ Adverse event (specify): _____

DOSE 2

- ❑ Date received second dose of TWINRIX: _____
- ❑ Did not receive second dose of TWINRIX as of March 2007 (Fill out information below)

DOSE 3

- ❑ Date received third dose of TWINRIX: _____
- ❑ Did not receive third dose of TWINRIX as of March 2007 (Fill out information below)

Reason(s) patient did not receive Dose 2 or 3 as of March 2007 (if necessary)

❑ Not yet due for dose

❑ Refused (specify why): _____

❑ Lost to followup (details if known): _____

❑ Other (specify): _____

SAMHSA's HEPATITIS VACCINATION PROGRAM

DOSE 1

Site ID: _____

Date received first dose of TWINRIX: _____ Westat Patient ID:

Demographics:

Gender

- ❑ Male
- ❑ Female
- ❑ Transgender/Other

Ethnicity

- ❑ Hispanic
- ❑ Non-Hispanic

Race (Check all that apply)

- ❑ Black/African American
- ❑ Alaska Native
- ❑ American Indian
- ❑ Native Hawaiian/Other Pacific Islander
- ❑ Asian
- ❑ White
- ❑ Other (specify): _____

Age (years)

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SAMHSA's HEPATITIS VACCINATION PROGRAM

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- ❑ Did not receive third dose of TWINRIX as of March 2007 (Fill out information below)

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- ❑ Lost to followup (details if known): _____
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SAMHSA's HEPATITIS VACCINATION PROGRAM

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DOSE 3

- ❑ Date received third dose of TWINRIX: _____
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Reason(s) patient did not receive Dose 2 or 3 as of March 2007 (if necessary)

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- ❑ Lost to followup (details if known): _____
- ❑ Refused (specify why): _____
- ❑ Other (specify): _____

SAMHSA's HEPATITIS VACCINATION PROGRAM

Patient Refusal Form

Please help us count the number of at-risk patients that have refused TWINRIX vaccination by filling out this brief form.

DATE: _____

PATIENT REFUSED:

❑ **DOSE 1 (✓ this box if the patient is offered dose 1 and refuses)**

❑ **DOSE 2 (✓ this box if the patient is offered dose 2 and refuses)**

Westat Patient ID*: _____
(Record ID from Data Collection Form)

❑ **DOSE 3 (✓ this box if the patient is offered dose 3 and refuses)**

Westat Patient ID*: _____
(Record ID from Data Collection Form)

Reason for refusal:

_____
_____
_____

* Please send this Patient Refusal Form directly after the refusal, but retain the Data Collection Form until the end of study in March 2007, when all forms are to be returned.