REPORTED MORBIDITY
JULY/AUGUST, 1987

LOUISIANA MORBIDITY REPORT

EPIDEMIOLOGY

PUBLIC HEALTH STATISTICS

DEPARTMENT OF HEALTH AND HUMAN RESOURCES
OFFICE OF PREVENTIVE AND PUBLIC HEALTH SERVICES
DIVISION OF RECORDS AND STATISTICS
P.O. BOX 60630 NEW ORLEANS, LOUISIANA 70160

SANDRA L. ROBINSON, M.D., M.P.H.
SECRETARY AND STATE HEALTH OFFICER
504/342-6711

PERTUSSIS SURVEILLANCE

Bernard J. Moriniere, MD, MPH
Karen Y. Kelso, RN
Susan A Wilson, RN

Epidemiology Section

From January 1, 1987 to July 31, 1987, 37 confirmed cases of Pertussis have been reported to the Health Department. This number is an apparent increase over that of the same period for the previous 10 years. No Pertussis-related death has been reported. Cases are scattered over 12 parishes throughout the state. Eleven (11) cases affected infants before 3 months of age, prior to immunization. Among 23 case-children older than 3 months of age for whom immunization status was reported, 8 were adequately immunized for their age, and 15 were not up-to-date.

Information on reported cases of Pertussis have been reviewed for the period January to July 1987.

Case-Definitions:

A clinically suspected case is defined as:

- history of cough lasting more than 2 weeks.
- history of cough with paroxysm lasting more than 1 week.
- history of cough with typical inspiratory "whoop" OR post-tussive vomiting OR paroxysm causing patient to awaken at night.

A confirmed case meets the clinical definition AND:

- is laboratory confirmed, by positive culture of Bordetella Pertussis in a nasopharyngeal swab, or by Direct Fluorescent Antibody test (DFA test),

OR

- is epidemiologically linked to a confirmed case (i.e. with reported evidence of contact with a known confirmed case within 10 days prior to onset of symptoms.)

Thirty-seven confirmed cases have been reported between January 1, 1987 and July 31, 1987. Twenty-eight cases were laboratory confirmed, either by a positive DFA test (n=19), or by a positive culture (n=6), or both (n=3). The other nine cases

Figure 1

CONFIRMED CASES OF PERTUSSIS BY MONTH OF ONSET
LOUISIANA, JANUARY THROUGH JULY 1987

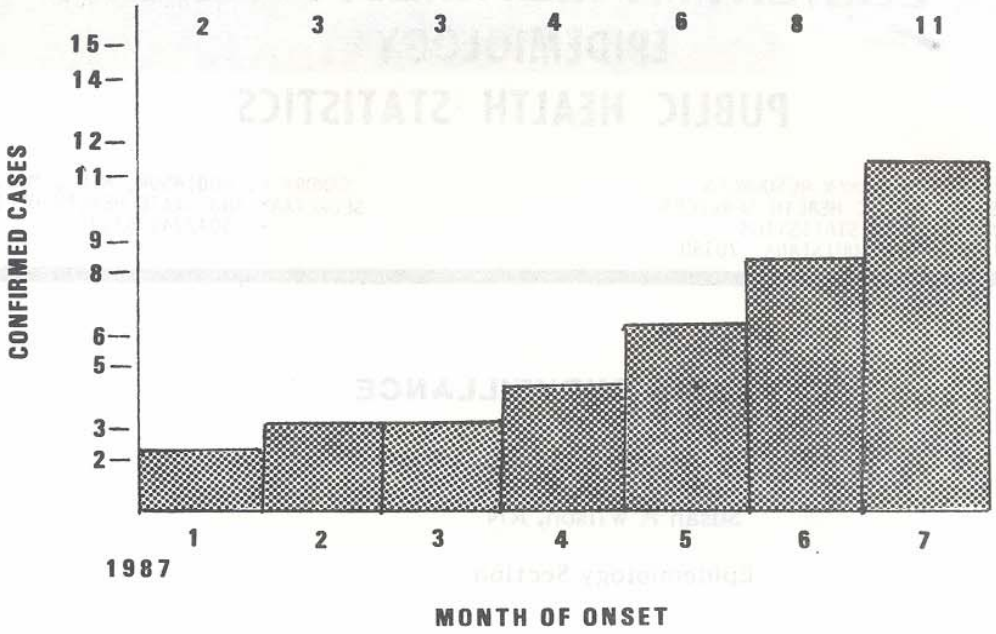
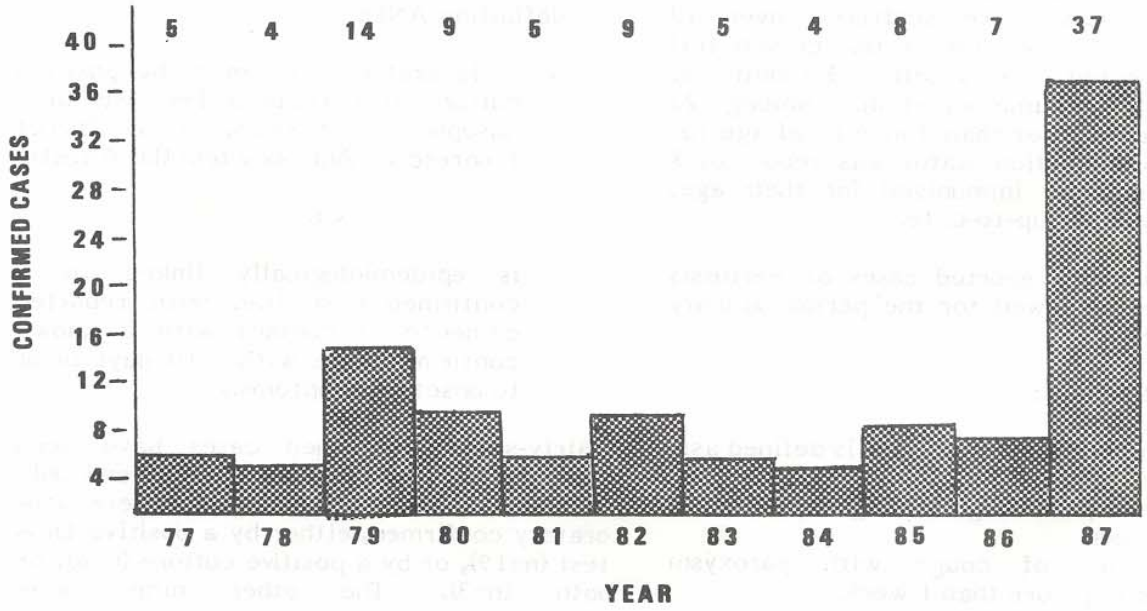


Figure 2

CONFIRMED CASES OF PERTUSSIS, FROM JANUARY THROUGH JULY,
LOUISIANA, 1977 TO 1987



were clinically suspected and were reported to have been exposed to a known confirmed case.

Eight additional suspected cases were reported but were lacking laboratory confirmation or evidence of contact with a confirmed case.

The distribution of confirmed cases by month of onset appears on Figure 1 and is consistent with the seasonal pattern of Pertussis. Information on August cases is not fully available, due to time lag in reporting. Preliminary information suggests no further increase compared to July figures.

The 37 confirmed cases reported from January through July 1987 represent a 5.3-fold increase over the average 7 cases reported for the same period over the past ten years - Figure 2.

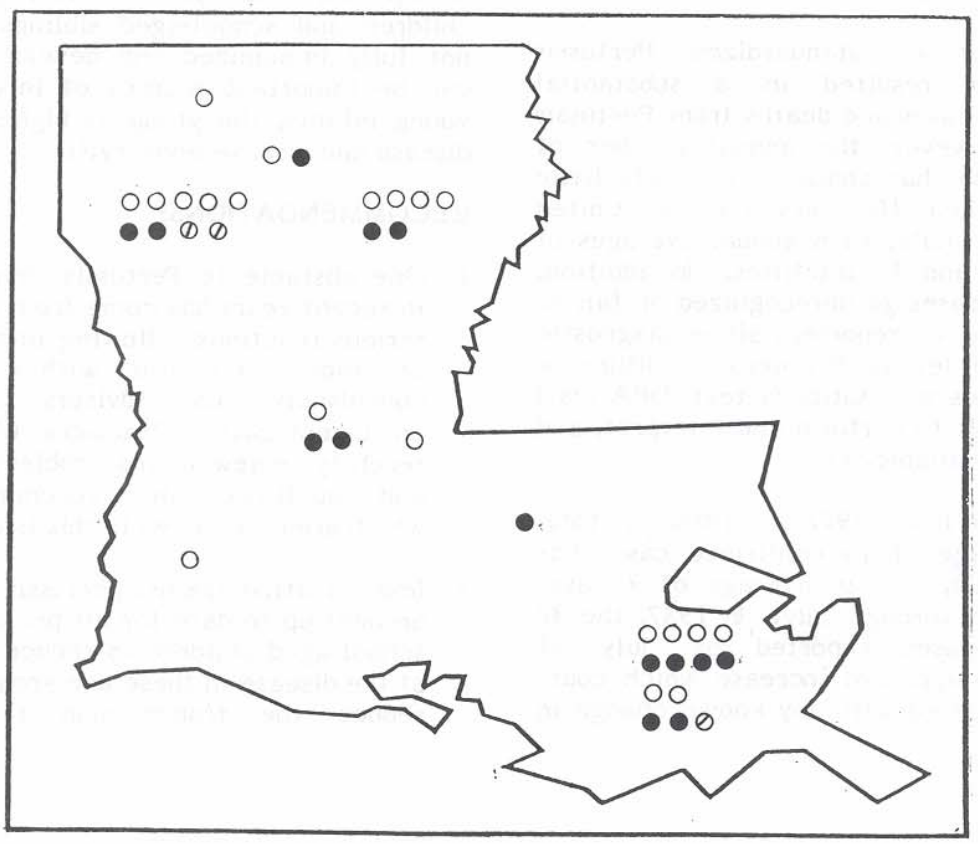
Cases are scattered over 12 parishes throughout the state, without major clustering other than in the three metropolitan areas of New Orleans, Shreveport and Monroe (Figure 3). No increased incidence of Pertussis has been reported in the three neighboring states of Texas, Arkansas and Mississippi.

Age distribution and immunization status

Figure 3

GEOGRAPHIC DISTRIBUTION AND IMMUNIZATION STATUS OF 37 CONFIRMED CASES OF PERTUSSIS LOUISIANA, JANUARY TO JULY, 1987

○ = ONE CASE, ADEQUATELY IMMUNIZED.
● = ONE CASE, NOT ADEQUATELY IMMUNIZED.
⌀ = ONE CASE, IMMUNIZATION STATUS NOT REPORTED.



are shown on Table 1. Of 26 case-children older than three months of age, 15 (58%) were not up-to-date, according to the 2-4-6-18 months schedule.

Table 1:
AGE DISTRIBUTION AND IMMUNIZATION STATUS
OF 37 CONFIRMED CASES OF PERTUSSIS
LOUISIANA, JANUARY TO JULY, 1987

AGE GROUP	NUMBER OF CASES	IMMUNIZATION STATUS			
		N/A *	Up To Date**	Not Up To Date	Unknown
- 3 months	11	11	-	-	-
3-18 months	18	0	8	8	2
18 mos - 7yrs	7	0	0	7	0
+ 7 yrs	1	0	0	0	1
TOTAL	37	11	8	15	3

* N/A: Not Applicable
** Up to Date: one dose by three months of age;
two doses by five months of age;
three doses by seven months of age;
four doses by nineteen months of age.

Reported by:
Public Health Units, Hospital Infection Control Sections, Private Physicians, from the Parishes of Avoyelles, Bossier, Caddo, Calcasieu, St. Charles, East Baton Rouge, Jefferson, Lafourche, Orleans, Ouachita, Rapides, and Webster.

EDITORIAL COMMENT:

General use of standardized Pertussis vaccine has resulted in a substantial reduction in cases and deaths from Pertussis disease. However, the annual number of reported cases has changed relatively little during the last 10 years for the United States as a whole, with annual averages of 1,835 cases and 10 fatalities. In addition, many more cases go unrecognized or fail to be confirmed or reported, since diagnostic tests for Bordetella Pertussis - culture or Direct Fluorescent Antibody test (DFA test) - are difficult to perform and interpret, and not always available.(1)

In Louisiana, from 1977 to 1986, a total annual average of 15 confirmed cases has been reported, and an average of 7 cases from January through July. In 1987, the 37 confirmed cases reported by July 31 represent an apparent increase which could not be associated with any known change in diagnosis or reporting procedures. The scattering of cases throughout the state indicates that transmission is widespread and that further cases or clusters are likely to occur, despite the high levels of immunization coverage (95.4% of all children entering public schools, 96.1% of all children entering non-public schools.)(3)

Pertussis is highly communicable (attack rates of over 90% have been reported in unimmunized household contacts), and can cause severe disease, particularly among very young children. Current nationwide data show that about 50% of all cases occur among children under 1 year of age, with a rate of hospitalization of 75%, and a case-fatality rate of 0.7% in this age group. Because of the substantial risk of complications of the disease, completion of a primary series of DTP early in life is essential. In older children, infection may result in nonspecific symptoms of bronchitis or an upper respiratory tract infection, and pertussis may not be diagnosed because classic signs, especially the inspiratory whoop, may be absent. Older pre-school children and school-aged siblings who are not fully immunized and develop pertussis can be important sources of infection for young infants, the group at highest risk of disease and disease severity.(1)

RECOMMENDATIONS:

1. One obstacle to Pertussis immunization in recent years has come from reports of serious reactions following immunization of children of families with a history of convulsions. The Advisory Committee on Immunization Practices (ACIP) has recently reviewed this problem in depth and published the recommendations which are reproduced in this issue.(4)

2. Immunization against pertussis should be brought up to date for all pre-school and school aged children to reduce incidence of the disease in these age groups, and to reduce the transmission to younger

infants.

3. The Pertussis component of DTP should not be omitted unless one of the following has occured, following a previous DTP immunization:(1)

   - Allergic hypersensitivity.
   - Fever of 40.5 C (105 F) or greater within 48 hours.
   - Collapse or shock-like state (hypotonic-hyporesponsive episode) within 48 hours.
   - Persisting, inconsolable crying lasting 3 hours or more or an unusual, high-pitched cry occurring within 48 hours.
   - Convulsion(s) with or without fever occurring within 3 days. (See next section: Pertussis Immunization; Family History of Convulsions and Use of Antipyretics - Supplementary ACIP Statement.) (4)
   - Encephalopathy occurring within 7 days; this includes severe alterations in consciousness with generalized or focal neurologic signs.

4. Treatment by Erythromycin, 40 to 50 mg/kg/day/p.o. (up to 1 g/day) for 14 days should be prescribed as early as possible to all confirmed and suspected case-children, to reduce duration of transmission.(5)

5. Treatment by Erythromycin, 40 to 50 mg/kg/day/p.o. (up to 1 g/day) for 14 days should be prescribed to household contacts of confirmed and suspected cases, within 8 to 10 days after exposure, to prevent illness, inapparent infection and further transmission. (5)

6. Increased efforts should be made to confirm suspected cases, either by culture of nasopharyngeal swabs or by DFA test, preferably during the initial three weeks of illness and before antibiotics are instituted.(6) The tests are performed free of charge by the State Central Health Laboratory, and transport media can be obtained from the Regional Public Health Laboratories. (New kits of transport media for culture and DFA test will be available by mid-October 1987.)

7. All confirmed cases should be reported to make possible the dissemination of accurate surveillance data.

8. For further information or assistance, please contact the Epidemiology Section, (504) 568-5005.

References:

1. ACIP. Diphtheria, tetanus, and pertussis: guidelines for vaccine prophylaxis and other preventive measures. MMWR 1985; Vol. 34:pp 405-14, 419-26.
2. Louisiana Monthly Morbidity Report, 1977 to 1986.
3. Progress Report 1986-1987. Immunization Section, Division of Disease Control. Louisiana State Health Dept. Unpublished document.
4. Pertussis Immunization; Family history of convulsions and use of antipyretics - Supplementary ACIP Statement. MMWR, 1987; Vol. 36, No. 18: pp 281-282.
5. Bass JW. Erythromycin for treatment and prevention of Pertussis. Ped Inf Dis, 1986, Vol 5, pp 154-157.
6. Pertussis - Maryland, 1982. MMWR, 1983; Vol. 32, No. 23: pp 297-300, 305.

Recommendation of the Immunization Practices Advisory Committee (ACIP)

Pertussis Immunization; Family History of Convulsions and Use of Antipyretics — Supplementary ACIP Statement

The Immunization Practices Advisory Committee (ACIP) has reviewed available data concerning the risks and benefits of pertussis vaccine for infants and children with a family history of convulsions. Based on this review, the ACIP does not believe that a family history of convulsions should be a contraindication to vaccination with diphtheria and tetanus toxoids and pertussis vaccine (DTP). In addition, the ACIP believes that antipyretic use in conjuction with DTP vaccination may be reasonable in children with personal or family histories of convulsions. Consequently, the following statement updates some of the previous recommendations regarding pertussis vaccine (*1*).

Vaccination of Children with Family Histories of Convulsions with Pertussis Vaccine

The risk of neurologic events after DTP vaccination is very small. Most neurologic events (primarily febrile seizures, but including nonfebrile seizures, encephalopathy, or other neurologic symptoms) that occasionally follow DTP vaccination occur in children without known risk factors. However, recent studies suggest that infants and children with a history of convulsions in first-degree family members (i.e., siblings and parents) have a 3.2-fold increased risk for neurologic events compared with those without such histories (CDC, unpublished data). Nevertheless, these children are still at very low risk for serious neurologic events following DTP vaccination. Convulsions within 3 days of DTP vaccination may be unrelated to vaccination, induced by vaccine components, or initiated by vaccine-associated fever in those children prone to febrile convulsions. Although children with a family history of seizures have an increased risk for developing idiopathic epilepsy, febrile seizures (including those following vaccinations) do not themselves increase the probability of epilepsy or other neurologic disorders (*2,3*).

After careful deliberation, the ACIP has concluded that a family history of convulsions in parents and siblings is not a contraindication to pertussis vaccination and that children with such family histories should receive pertussis vaccine according to the recommended schedule (*1,4*). The committee reached this decision after considering 1) the risks of pertussis disease, 2) the large number of children (5%-7%) with a family history of convulsions, 3) the clustering of these children within families, and 4) the low risk of convulsions following pertussis vaccination (*1-3,5*).

The ACIP believes that parents of infants and children with family histories of convulsions should be informed of their children's increased risk of seizures following DTP vaccination. In particular, they should be told, before the child is vaccinated, to seek immediate medical evaluation in the unlikely event of a seizure. The child's permanent medical record should document that the small risk of postvaccination seizure and the benefits of pertussis vaccination have been discussed.

Antipyretic Use in Children with Personal or Family Histories of Convulsions

There are no data on whether the prophylactic use of antipyretics following DTP vaccine can decrease the risk of febrile convulsions. However, preliminary information suggests that acetaminophen given at a dose of 15 mg/kg at the time of DTP vaccination and again 4 hours later will reduce the incidence of postvaccination fever (*6*). Thus, it is reasonable to consider administering antipyretics (such as acetaminophen) at age-appropriate doses at the time of vaccination and every 4 to 6 hours for 48 to 72 hours to children at higher risk for seizures than the general population.

References

1. ACIP. Diphtheria, tetanus, and pertussis: guidelines for vaccine prophylaxis and other preventive measures. MMWR 1985;34:405-14, 419-26.
2. Nelson KB, Ellenberg JH. Prognosis in children with febrile seizures. Pediatrics 1978;61:720-7.
3. Hirtz DG, Nelson KB, Ellenberg JH. Seizures following childhood immunizations. J Pediatr 1983; 102:14-8.
4. ACIP. New recommended schedule for active immunization of normal infants and children. MMWR 1986;35:577-9.
5. Cody CL, Baraff LJ, Cherry JD, Marcy SM, Manclark CD. Nature and rates of adverse reactions associated with DTP and DT immunizations in infants and children. Pediatrics 1981;68:650-60.
6. Ipp MM, Gold R, Greenberg S, et al. Acetaminophen prophylaxis of adverse reactions following vaccination of infants with DTP-polio. Pediatr Infect Dis [In press].

* SOURCE: MMWR, 1987; Vol. 36, No. 18: pp 281-282.

BLOOD COLLECTION PROCEDURES FOR HYPOTHYROID AND PKU SPECIMENS

Larry J. Marutin, Ph.D.
Health Laboratory Assistant Director
Division of Laboratory Services

UNSATISFACTORY HYPOTHYROID AND PKU SPECIMENS

The rules for the collection of specimens as well as those governing their acceptability are dictated by the National Committee for Clinical Laboratory Standards (NCCLS) and the Centers for Disease Control (CDC). Studies by the NCCLS and the CDC have shown that the amount of analyte is proportional to the amount of area covered by blood in the circle, which is why the circle on the filter paper needs to be completely filled, by a single, large drop of blood. Too much blood (overlayering) or too little blood per circle can cause false results to be obtained. An improperly collected specimen(s) could result in misdiagnosis of a Hypothyroid or PKU child. Therefore, circles that are not completely filled with blood will be reported as unsatisfactory. This letter supersedes any statement relative to the amount of blood needed for blood spot collection found on the back of the LAB 10 PKU and Hypothyroid Form (please refer to the back of the LAB 10 form for recommendations for successful bloodspot submissions).

HEPARINIZED CAPILLARY PIPET COLLECTION

In order to facilitate the collection of blood for the PKU and Hypothyroid test, the NCCLS has proposed a tentative standard (Vol. 5, No. 14) which allows the use of heparinized (Caraway type) capillary pipets (do not use microhematocrit tubes) to withdraw the sample which is immediately applied to the filter paper. For state specimen collectors the capillary pipets will be used only as a method of last resort (when you are unable to collect the blood directly from the heel on at least two attempts).

RECOMMENDATIONS FOR SUCCESSFUL BLOODSPOT SUBMISSIONS USING CAPILLARY TUBES (PIPETS)

This procedure is meant to supplement the directions that are given on the back of the LAB 10 (PKU and Hypothyroid Form). Please refer to the back of the LAB 10 when reading these directions. The capillary tube (hereafter called pipet) recommendations start after number 4 of the "Specimen Collection" procedures on the back of the LAB 10. The new number 5 as stated below will replace numbers 5 thru 10 if and when the capillary pipet is used (application of the blood drop directly from the heel is still the method of preference).

5. Hold the heparinized, Caraway capillary pipet at approximately a 30 degree angle above the incision. Place the tip of the pipet at the incision opening so that it comes in contact with the blood. It is necessary to slowly rotate the pipet while it is filling with blood to ensure that as much heparin as possible mixes with the blood.

It is only necessary to fill approximately 2/3 to 3/4 of the pipet in order to obtain enough blood to completely fill four circles on the form. After drawing up the required amount of blood in the pipet, it is of utmost importance that the blood be applied to the filter paper circles on the form immediately (if not microclots will form causing the sample to be unsatisfactory) and it is also necessary that your index finger be placed over the top of the pipet to ensure that the blood does not run out of the pipet.

In order to apply the blood to the circle on the form hold the pipet perpendicular to the form and lower the pipet to within

approximately one inch of the circle. Dispense the blood by slowly releasing your index finger from the top of the pipet. A drop of blood will form at the tip of the pipet; bring the drop in contact with the filter paper while slowly releasing additional blood from the pipet. This continuous drop should only be enough blood to completely fill the circle. Once this operation is complete, repeat it to fill the other three circles. Once a pipet has been used it must be discarded as the heparin in it has been depleted. (In order to develop proficiency with this technique, it is suggested that a tube of EDTA blood be used to practice filling the pipets and to practice filling the circles from the pipets.)

Go to step 11 of the "Specimen Collection" procedures on the back of the LAB 10 to complete the specimen collection and submittal.

Thank you for assisting the Division of Laboratory Services in providing the best possible data to the physician. If any further assistance is desired with the capillary pipet collection or with the collection of Hypothyroid and PKU specimens in general, please contact Dr. Larry Maturin in the Central Laboratory in New Orleans (phone: 504-568-5375; address: 325 Loyola Ave., 7th floor, New Orleans, La. 70112). Arrangements will be made to accomodate you at the earliest possible date.

LOUISIANA AIDS UPDATE

	CASES	DEATHS	PERCENT
1987 (thru 8/31/87)	110	36	33
TOTAL, ALL YEARS	500	332	66

INFLUENZA HIGH RISK IMMUNIZATION PROGRAM 1987 - 88

Health Department Clinics will provide influenza immunizations to individuals who are at high risk of serious illness or death from influenza infection. Vaccine will be available starting November 2, 1987 and will be offered to individuals 65 years of age and older and to all persons with chronic disorders of the cardiovascular, pulmonary and/or renal systems, metabolic disorders, severe anemia and/or compromised immune function. The influenza immunization program will be limited to the first two target groups as specified by the Centers for Disease Control. Because of the potential for introducing influenza to high risk groups such as patients with severely compromised cardiopulmonary or immune systems or infants in neonatal intensive care units, physicians, nurses and other personnel who have extensive contact with such patients should be vaccinated annually. The Health Department does not have vaccine supplies sufficient to immunize this group of otherwise healthy individuals. Health care institutions are encouraged to develop their own immunization programs.

Physicians are encouraged to administer vaccine to any person who wishes to reduce their chances of acquiring influenza infection. Also, vaccination programs for persons who provide essential community services are recommended.

Questions concerning the influenza immunization program may be directed to the respective parish health unit or to the Immunization Section at (504) 568-5007.

*CDC'S RECOMMENDATIONS REGARDING INFLUENZA IMMUNIZATIONS

OPTIONS FOR THE CONTROL OF INFLUENZA

There are two measures for reducing the impact of influenza: immunoprophylaxis with inactivated (killed virus) vaccine and chemoprophylaxis or therapy with an antiviral drug. *Vaccination of high-risk persons each year before the influenza season is the single most important measure for reducing the impact of influenza.* This measure can be highly cost-effective 1) when it is aimed at individuals who may experience the most severe consequences and who have a higher-than-average potential for infection and 2) when it is administered to high-risk individuals during routine health-care visits before the influenza season. Recent reports indicate that, when there is a good match between vaccine and epidemic strains of virus, achieving high vaccination rates in closed populations can reduce the risk of outbreaks by inducing herd immunity. When outbreaks of influenza A do occur in closed populations, they may be stopped by chemoprophylaxis of all residents. Other indications for prophylaxis (whether with vaccine or antiviral drug) include the strong desire of any person to avoid an influenza infection, reduce the severity of disease, or reduce their chances of transmitting influenza to high-risk persons with whom they have frequent contact. Unlike immunization, which protects against influenza types A and B, chemoprophylaxis is effective only against influenza A.

Specific chemotherapy for influenza A is most likely to benefit individuals who seek medical attention promptly because of the abrupt onset of an acute respiratory infection during an influenza A epidemic. Early chemotherapy may reduce the severity and duration of illness for high-risk individuals who have not been vaccinated or for whom influenza vaccine has not prevented infection.

*Excerpted from Morbidity and Mortality Weekly Report, June 26, 1987/Vol 36/No. 24.

Influenza is known to be transmitted in medical-care settings, and measures such as isolating ill patients individually or in groups, limiting visitors, and avoiding elective admissions and surgery during an influenza outbreak are all possible ways of limiting further transmission within hospitals and other institutions. However, unlike specific antiviral prophylaxis, these measures have not been demonstrated to be effective in controlling outbreaks. Likewise, the effectiveness of closing schools or classrooms during explosive outbreaks has not been established.

RECOMMENDATIONS FOR USE OF INACTIVATED INFLUENZA VACCINE

Influenza vaccine is recommended for high-risk persons ≥6 months of age and for their medical-care providers or household contacts, for children and teenagers receiving long-term aspirin therapy, and for other persons wishing to reduce their chances of acquiring influenza. Vaccine composition and dosages for the 1987-88 influenza season are given in Table 1. Guidelines for the use of vaccine among different segments of the population are given below. *Remaining 1986-87 vaccine should not be used.* Although the current influenza vaccine often contains one or more antigens used in previous years, immunity declines in the year following vaccination. *Therefore, a history of vaccination in any previous year with a vaccine containing one or more antigens included in the current vaccine does not preclude the need to be revaccinated for the 1987-88 influenza season.*

During the past decade, data on influenza vaccine immunogenicity and side effects have generally been obtained when vaccine is administered intramuscularly. Because there is no adequate evaluation of recent influenza vaccines administered by other routes, the intramuscular route is preferred. The recommended site of vaccination is the deltoid muscle for adults and older children and the anterolateral aspect of the thigh for infants and young children.

TARGET GROUPS FOR SPECIAL VACCINATION PROGRAMS

Groups at greatest medical risk of influenza-related complications. Based on observations of morbidity and mortality, high-risk groups have been classified by priority. Thus, available resources can be directed toward organizing special programs to provide vaccine to those who may derive the greatest benefit. Active, targeted vaccination efforts are most necessary for the following two groups, and the objective is to vaccinate at least 80% of each group:

1) Adults and children with chronic disorders of the cardiovascular or pulmonary systems requiring regular medical follow-up or hospitalization during the preceding year.
2) Residents of nursing homes and other chronic-care facilities housing patients of any age with chronic medical conditions.

Groups at moderate medical risk of influenza-related complications. After the above two target groups have been vaccinated, programs should make vaccine readily available to persons at moderately increased risk of serious illness compared with the general population. These include:

1) Otherwise healthy individuals ≥65 years of age.
2) Adults and children who have required regular medical follow-up or hospitalization during the preceding year because of chronic metabolic diseases (including diabetes mellitus), renal dysfunction, anemia, or immunosuppression.
3) Children and teenagers (6 months through 18 years of age) who are receiving long-term aspirin therapy and, therefore, may be at risk of developing Reye's syndrome following influenza infection.

Groups potentially capable of nosocomial transmission of influenza to high-risk persons. During many winters, nosocomial outbreaks of influenza are reported. Although not proven, it is reasonable to believe that individuals caring for high-risk persons can transmit influenza infection to them while they are themselves incubating infection, undergoing subclinical infection, or working despite the existence of symptoms. The potential for transmitting influenza to high-risk persons should be reduced by vaccinating:

1) Physicians, nurses, and other personnel having extensive contact with high-risk patients (e.g., primary-care and certain speciality clinicians and staff of chronic-care facilities and intensive-care units, particularly neonatal intensive-care units.

2) Providers of care to high-risk persons in the home setting (e.g., visiting nurses, volunteer workers) as well as all household members, whether or not they provide care.

VACCINATION OF OTHER GROUPS

General Population: Physicians should administer vaccine to any persons wishing to reduce their chances of acquiring influenza infection. Persons providing essential community services (e.g., employees of fire and police departments) are not considered at increased occupational risk of serious influenza illness, but they may be considered for vaccination programs designed to minimize disruption of essential services during severe epidemics.

Pregnant Women: Pregnancy itself has not been demonstrated as a risk factor for severe influenza infection, except during the largest pandemics of 1918-19 and 1957-58. However, pregnant women with medical conditions that increase their risk of complications from influenza should be vaccinated since influenza vaccine is considered safe for pregnant women without a specific severe egg allergy. To minimize any concern over the theoretical possibility of teratogenicity, vaccine should be given after the first trimester. However, it may be undesirable to delay vaccinating a pregnant woman who has a high-risk condition and will still be in the first trimester of pregnancy when influenza activity usually begins.

PERSONS WHO SHOULD NOT BE VACCINATED

Inactivated influenza vaccine should not be given to persons who have severe allergies to eggs (see **SIDE EFFECTS AND ADVERSE REACTIONS**, page 12). Normally, persons with acute febrile illnesses should not be vaccinated until their temporary symptoms have abated.

TIMING OF INFLUENZA VACCINATION ACTIVITIES

The first sporadic laboratory-confirmed cases of influenza in the United States or U.S. territories are often documented in September or October. However, except in years of pandemic influenza (e.g., 1957 and 1968), high levels of influenza activity have not occurred in the contiguous United States before December. Therefore, November is the optimal time for organized vaccination campaigns in chronic-care facilities, worksites, and other places where high-risk persons are routinely accessible. Vaccination is desirable in September or October 1) in regions that have experienced earlier-than-normal epidemic activity (e.g., Alaska) and 2) for persons who should be vaccinated and who received medical check-ups or treatment during September or October and, thus, may not be seen in November. In addition, hospitalized high-risk adults and children who are discharged between September and the time influenza activity begins to decline in their community should be vaccinated as part of the discharge procedure.

TABLE 1. Influenza vaccine* dosage, by age of patient — United States, 1987-88 influenza season

Age Group	Product†	Dosage (ml)§	Number of Doses	Route¶
6-35 mos.	Split virus only	0.25	2 **	IM
3-12 yrs.	Split virus only	0.5	2 **	IM
>12 yrs.	Whole or split virus	0.5	1	IM

*Contains 15 μg each of A/Taiwan/1/86(H1N1), A/Leningrad/360/86(H3N2), and B/Ann Arbor/1/86 hemagglutinin antigens in each 0.5 ml. Manufacturers include Connaught (Fluzone ® whole or split, distributed by E.R. Squibb & Sons); Parke-Davis (Fluogen ® split); and Wyeth Laboratories (Influenza Virus Vaccine, Trivalent® split). Manufacturer's telephone numbers for further product information are: Connaught (800) 822-2463, Parke-Davis (800) 223-0432, Wyeth (800) 321-2304.

†Because of the lower potential for causing febrile reactions, only split (subvirion) vaccine should be used in children. When used according to the recommended dosage, split and whole virus vaccines produce similar immunogenicity and side effects in adults.

§Because children are accessible when pediatric vaccines are administered, it may be desirable to administer influenza vaccine to high-risk children simultaneously with routine pediatric vaccine or pneumococcal polysaccharide vaccine, but in a different site. Although studies have not been done, no diminution of immunogenicity or enhancement of adverse reactions should be expected.

¶The recommended site of vaccination is the deltoid muscle for adults and older children. The preferred site for infants and young children is the anterolateral aspect of the thigh.

**Two doses are recommended for maximum protection with at least 4 weeks between doses. However, if the individual received at least one dose of influenza vaccine between the 1978-79 and 1986-87 influenza seasons, one dose is sufficient.

Children who have not been previously vaccinated require two doses of vaccine with at least 1 month between doses. Vaccination programs for children should be scheduled so that the second dose can be given before December. Vaccine can be given to both children and adults up to and even after influenza virus activity is documented in a region, although temporary chemophrophylaxis may be indicated during influenza outbreaks (see **ANTIVIRAL AGENTS FOR INFLUENZA A,** page 13).

STRATEGIES FOR IMPLEMENTING INFLUENZA VACCINE RECOMMENDATIONS

More effective, well planned programs for vaccinating high-risk persons are needed in nursing homes and other chronic-care facilities and in physicans' offices, health-maintenance organizations, hospitals, and employee health clinics. Adults and children who are in high-priority target groups and do not reside in nursing homes or other chronic-care facilities should receive influenza vaccine during their last regular medical check-up before the influenza season (i.e., before December). Clinicians should contact high-risk persons not scheduled for regular medical appointments in the fall and tell them to come in specifically to be vaccinated. From September-February, hospital discharge procedures should include vaccinating high-risk patients against influenza. Medical-care personnel and auxiliary staff must be made aware of the importance of ensuring that no high-risk patient resides in or leaves a medical-care facility during the fall without having influenza vaccine offered and being strongly urged to be vaccinated.

Educational materials about influenza and its control are available from a variety of sources. For more information on these sources, contact the Centers for Disease Control, Center for Prevention Services, Technical Information Services, 1600 Clifton Road, N.E., Atlanta, Georgia 30333.

SIDE EFFECTS AND ADVERSE REACTIONS

Because influenza vaccine contains only noninfectious viruses, it cannot cause influenza. Occasional cases of respiratory disease among vaccinated persons represent coincidental illnesses unrelated to influenza infection. The most frequent side effect of vaccination is soreness around the vaccination site for 1-2 days. This occurs in less than one-third of vaccine recipients.

In addition, the following two types of systemic reactions have occurred:

1) Fever, malaise, myalgia, and other systemic symptoms of toxicity occur infrequently and, most often, affect persons with no exposure to the influenza virus antigens in the vaccine (e.g., young children). These reactions begin 6-12 hours after vaccination and can persist for 1-2 days.
2) Immediate, presumably allergic, reactions such as hives, angioedema, allergic asthma, or anaphylaxis may occur, but they are extremely rare. These reactions probably result from sensitivity to some vaccine component—most likely residual egg protein. Although current influenza vaccines contain only a small quantity of egg protein, the vaccine is presumed capable of inducing immediate hypersensitivity reactions in individuals with severe allergies to eggs, and such persons should *not* be given influenza vaccine. This includes those who develop hives, swelling of the lips or tongue, or acute respiratory distress or collapse after eating eggs. It also includes persons who have developed evidence of occupational asthma or other allergic responses from occupational exposure to egg protein.

Unlike the 1976 swine influenza vaccine, subsequent vaccines, which have been prepared from other virus strains, have not been associated with an increased frequency of Guillain-Barre syndrome. Although influenza vaccination reportedly may inhibit the clearance of warfarin and theophylline, further studies have consistently failed to show any adverse effects of influenza vaccination among patients taking these drugs.

SIMULTANEOUS ADMINISTRATION OF CHILDHOOD OR OTHER VACCINES

There is considerable overlap in the target groups for influenza and pneumococcal vaccination. Both of these vaccines can be given at the same time at different sites without increased side effects. However, it should be emphasized that, whereas influenza vaccine is given annually, pneumococcal vaccine should be given only once. Detailed immunization records, which should be provided to each patient, will help ensure that additional doses of pneumococcal vaccine are not given.

Because children are accessible when pediatric vaccines are administered, it may be desirable to administer influenza vaccine simultaneously with routine pediatric vaccine, but in a different site. Although studies have not been done, no diminution of immunogenicity or enhancement of adverse reactions should be expected.

ANTIVIRAL AGENTS FOR INFLUENZA A

There are two antiviral drugs with specific activity against influenza A viruses. They are amantadine hydrochloride and its analogue rimantadine hydrochloride. Presently, only amantadine is approved for marketing in the United States, although clinical trials have been undertaken with rimantadine to determine whether it also meets the safety and efficacy standards required for marketing.

Both amantadine and rimantadine interfere with the replication cycle of type A influenza viruses, although the specific mechanisms of their antiviral activity are not completely understood. These drugs also reduce virus shedding. Both drugs are approximately 70%-90% effective in preventing illnesses caused by naturally occurring strains of type A influenza viruses, but *they are not effective against type B influenza*. When administered within 24-48 hours after onset of illness, they have reduced the duration of fever and other systemic symptoms and allowed a more rapid return to routine daily activities. Since they may not prevent actual infection, persons who take these drugs may still develop immune responses that will protect them when exposed to antigenically related viruses.

In spite of the above evidence, *chemoprophylaxis is not a substitute for vaccination* because 1) it does not protect against influenza B and 2) patients may fail to take the drug for the full 6-12 weeks of an epidemic period. Increasing the availability of rapid viral diagnostic tests and improving the dissemination of information on where laboratory-confirmed influenza A virus infections are taking place will allow for more efficient use of antivirals. Such information is reported throughout the influenza season in the *MMWR* and is now available to public health officials by computer telecommunication from CDC.

Specific recommendations have been made for amantadine. Should rimantadine be approved for marketing in the United States at some future date, additional recommendations will be published.

SELECTED REPORTABLE DISEASES

(By Place of Residence)

STATE AND PARISH TOTALS REPORTED MORBIDITY JULY, 1987	VACCINE PREVENTABLE DISEASES					ASEPTIC MENINGITIS	HEPATITIS A AND UNSPECIFIED	HEPATITIS B	LEGIONELLOSIS	MALARIA	MENINGOCOCCAL INFECTIONS	SHIGELLOSIS	TUBERCULOSIS, PULMONARY	TYPHOID FEVER	OTHER SALMONELLOSIS	UNDERNUTRITION SEVERE	GONORRHEA	SYPHILIS, PRIMARY AND SECONDARY	RABIES IN ANIMALS (PARISH TOTALS CUMULATIVE 1987)
	MEASLES	RUBELLA	MUMPS	PERTUSSIS	TETANUS														
TOTAL TO DATE 1986	4	0	2	7	1	37	65	134	2	8	15	37	237	1	133	3	10704	515	14
TOTAL TO DATE 1987	0	0	204	17	0	33	79	302	3	0	10	179	131	0	482	0	9136	399	9
TOTAL THIS MONTH	0	0	6	5	0	5	10	47	1	0	0	36	7	0	89	0	1489	65	0
ACADIA															2		3		
ALLEN																	1		
ASCENSION																	3		
ASSUMPTION																	3		
AVOYELLES																	6		1
BEAUREGARD							2										4		
BIENVILLE															1		4	1	
BOSSIER																	13		1
CADDO						2	1	4				8	1		12		190	4	2
CALCASIEU															7		62	3	
CALDWELL																	4		
CAMERON																	2		
CATAHOULA																			
CLAIBORNE																	3	1	1
CONCORDIA																	1	2	
DESOTO								1							2		2		1
EAST BATON ROUGE			2	1		1		2				1	1		7		94	11	
EAST CARROLL																	14		
EAST FELICIANA																	2		
EVANGELINE								1				1			1		8		
FRANKLIN																	4		
GRANT															1		1		
IBERIA							1	2							2		25		
IBERVILLE																	7		
JACKSON															4		9	1	
JEFFERSON				2				6				4	1		4		72	2	
JEFFERSON DAVIS															1		8		
LAFAYETTE								3							6		53	3	
LAFOURCHE													2				10		
LASALLE																			
LINCOLN												1			2		8		2
LIVINGSTON																	2		
MADISON																	9	1	
MOREHOUSE													1		1		18	2	
NATCHITOCHES																	5		
ORLEANS			2	1		2	3	22				5			14		472	23	
OUACHITA				1								8	1		3		66	2	
PLAQUEMINES																			
POINTE COUPEE																	3		
RAPIDES								1				1					57	1	1
RED RIVER															1		1		
RICHLAND												3					4		
SABINE																			
ST. BERNARD								1									4		
ST. CHARLES																	4	2	
ST. HELENA																	2		
ST. JAMES																	4		
ST. JOHN								1									7		
ST. LANDRY							1										20	2	
ST. MARTIN							1										10	1	
ST. MARY															1		15		
ST. TAMMANY							1		1			1			4		11		
TANGIPAHOA			1												1		19	2	
TENSAS																			
TERREBONNE												2			4		13	1	
UNION															2		9		
VERMILION			1					2				1			2		9		
VERNON								1									53		
WASHINGTON															2		20		
WEBSTER															1		23		
WEST BATON ROUGE															1		3		
WEST CARROLL																	2		
WEST FELICIANA																	2		
WINN																	1		
OUT OF STATE																	5		

From January 1, 1987 - July 31, 1987, the following cases were also reported:
2-Amebiasis, 1-Brucellosis, 3-Leptospirosis, 5-Reye Syndrome, 3-Tularemia

* Includes Rubella, Congenital Syndrome.

** Includes 10 cases of Hepatitis Non A, Non B.

*** Acquired outside United States unless otherwise stated.

SELECTED REPORTABLE DISEASES

(By Place of Residence)

STATE AND PARISH TOTALS REPORTED MORBIDITY AUGUST, 1987	VACCINE PREVENTABLE DISEASES					ASEPTIC MENINGITIS	HEPATITIS A AND UNSPECIFIED	HEPATITIS B	LEGIONELLOSIS	MALARIA	MENINGOCOCCAL INFECTIONS	SHIGELLOSIS	TUBERCULOSIS, PULMONARY	TYPHOID FEVER	OTHER SALMONELLOSIS	UNDERNUTRITION SEVERE	GONORRHEA	SYPHILIS, PRIMARY AND SECONDARY	RABIES IN ANIMALS (PARISH TOTALS CUMULATIVE 1987)
	MEASLES	RUBELLA	MUMPS	PERTUSSIS	TETANUS														
TOTAL TO DATE 1986	4	0	2	11	2	58	89	170	2	14	16	63	285	1	179	5	12619	597	15
TOTAL TO DATE 1987	0	0	210	30	0	49	97	339	3	0	15	212	165	0	560	0	10400	477	9
TOTAL THIS MONTH	0	0	6	13	0	16	18	37	0	0	5	33	34	0	78	0	1270	78	0
ACADIA												1					6	2	
ALLEN																	2		
ASCENSION																	1	2	
ASSUMPTION																	1		
AVOYELLES																	3		1
BEAUREGARD																	5		
BIENVILLE																			
BOSSIER						3		3				3	1		3		9	1	1
CADDO				5		9		3				2	5		8		146	4	2
CALCASIEU				1			4	2					1		4		54		
CALDWELL																	1		
CAMERON																			
CATAHOULA																	3	1	
CLAIBORNE												1					3		1
CONCORDIA			1										1				3	1	
DESOTO													1				1		1
EAST BATON ROUGE						2	2	2			1	1	3		5		61	14	
EAST CARROLL													1				4		
EAST FELICIANA																	2		
EVANGELINE								1				3					2	1	
FRANKLIN																	5		
GRANT												1					2		
IBERIA							1	1							1		21	1	
IBERVILLE													1				1		
JACKSON																	5		
JEFFERSON							2	6			3	2			6		57	2	
JEFFERSON DAVIS																	8		
LAFAYETTE			2					1				2	1		13		73	1	
LAFOURCHE				2											1		18	6	
LASALLE																	4		
LINCOLN							1								1		5		2
LIVINGSTON			1										1		1			1	
MADISON																	7		
MOREHOUSE													1				18		
NATCHITOCHES								1									4		
ORLEANS				2		1	2	9			1	7	4		8		427	27	
OUACHITA				1			1					1	4		6		75	1	
PLAQUEMINES																	1		
POINTE COUPEE													1				2		
RAPIDES				1			1					1			3		72	1	1
RED RIVER																			
RICHLAND													2				6		
SABINE													2						
ST. BERNARD							1										7		
ST. CHARLES				1													3		
ST. HELENA																		1	
ST. JAMES								1									3	1	
ST. JOHN								1									14	2	
ST. LANDRY												1			2		10	2	
ST. MARTIN																	14		
ST. MARY																	5		
ST. TAMMANY			2				2	1				2			4		22	2	
TANGIPAHOA								1				2	1				2	1	
TENSAS																			
TERREBONNE								1				2	1				20	3	
UNION													1				1		
VERMILION								2				1	1		2		3		
VERNON							1										33		
WASHINGTON								1							3		3		
WEBSTER						1									4		3		
WEST BATON ROUGE																	2		
WEST CARROLL																	2		
WEST FELICIANA															1				
WINN															2		3		
OUT OF STATE																	2		

From January 1, 1987 - August 30, 1987, the following cases were also reported:
2-Amebiasis, 1-Brucellosis, 2-Cholera, 3-Leptospirosis, 6-Reye Syndrome, 3-Tularemia

* Includes Rubella, Congenital Syndrome.

** Includes 16 cases of Hepatitis Non A, Non B.

*** Acquired outside United States unless otherwise stated.

Department of Health and Human Resources
Office of Preventive and Public Health Services
P.O. Box 60630, New Orleans, LA 70160

BULK RATE
U.S. POSTAGE
PAID
NEW ORLEANS, LA
PERMIT No. 471

This public document was published at a total cost of $2623. 7500 copies of this public document were published in this first printing at a cost of $1320. This document was published for the Office of Preventive and Public Health Services by the Office of Management and Finance, Printing Operations, Baton Rouge, Louisiana to inform physicians, hospitals, and the public of current Louisiana morbidity status under authority of R.S. 40:36. This material was printed in accordance with the standards for printing by state agencies established pursuant to R.S. 43:31.