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EPIDEMIOLOGY
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DEPARTMENT OF HEALTH AND HUMAN RESOURCES
OFFICE OF PREVENTIVE AND PUBLIC HEALTH SERVICES
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Mandatory Premarital HIV Screening in Louisiana

Effective January 1, 1988, Louisiana law requires premarital HIV testing. With a projected 40,000 marriages in 1988, 80,000 people will be screened. The cost of one test could range from as little as $10 (if tested through a blood center) to $100 (if positive and tested through a private physician with pre- and post-test counseling). With an average cost of $60, per test, the annual cost of this testing in Louisiana could be $4,800,000.

The protocol for HIV testing begins with the ELISA test. If negative, the person is considered uninfected. If the ELISA test is positive, it is repeated. If the second ELISA is positive, a Western blot is done. Only if both the ELISA and Western blot are positive is the person considered HIV antibody positive. In adults there is a very high correlation between antibody positivity and actual HIV infection. Therefore, all HIV antibody-positive adults are considered to be infected.

The accuracy of a screening test is measured by sensitivity and specificity. Sensitivity is the percent of persons who truly have the disease or infection that have a positive test. Specificity is the percent of persons who truly do not have the disease or infection that have a negative test. Under ideal conditions the ELISA and Western blot tests have better than 99% sensitivity and specificity. However, false negative and false positive results will occur. False negative results may occur in persons who are recently infected and have not yet developed detectable levels of antibodies. False positive results occur occassionally in persons who have interfering antibodies that cross-react with the viral antigens in the test kits.

With a test accuracy of 99% and an estimated seroprevalence of 0.1% in the Louisiana premarital population, 79,920 negative results and 80 positive results are estimated. Based on $60 per test, the cost of detecting each positive individual in this population could be $60,000. Blood bank experience has indicated that in low-risk populations, as many as three out of five initially positive ELISA results will be found negative on confirmatory testing. No attempt is made to quantify the emotional

cost of these initial positive results.

The intention of the law is to prevent transmission between sexual partners and to infants. However, identification of a positive HIV status just prior to marriage does not necessarily attribute to prevention. Studies have shown that 60-80% of couples planning marriage have already had sexual intercourse, and a significant number of first births were conceived prior to marriage. In addition, knowledge does not always cause a change in behavior; and the use of known preventive measures (i.e. condoms) are not 100% effective.

A recent article in the Journal of the American Medical Association studied the cost-benefit of premarital screening. The authors projected that national premarital screening would detect fewer than one tenth of one percent of HIV infected individuals at a cost of more than $100 million. More than 100 infected individuals would be told they were probably not infected, and there may be more than 350 false positive results. The authors calculated this program could potentially prevent infection in 1,150 individuals and 250 births.

More than one-half of the states have considered premarital testing, but only Illinois and Louisiana have passed mandatory laws. Illinois has already reported problems. The average cost of an HIV test is $70, but private physicians may charge up to $300. Large public hospitals do not have the resources to test engaged couples. Officials fear that couples are driving to other states for marriage, or just simply not getting married. During the first three weeks of January, Cook County reported a decline in marriage license applications from 1,500 a year ago to 600.

Although the cost-benefit of this testing is controversial, it is now Louisiana law. Logistics should be considered for its implementation. HIV testing will not be available through the local public health units because the financial resources to undertake such a program do not currently exist in the state budget. Therefore, the costs for the test will be borne by the applicants of the marriage license. Some problems may arise due to the time restraints. The law requires that the HIV test be performed no more than 10 days prior to the date of application for the license. In addition, the results must be completed for the health certificate in order to apply for the license three days prior to the marriage. While some testing centers are offering a rapid turn-around time, many laboratories may need 10-14 days to complete the test, especially if positive results are involved.

Confidentiality is a critical issue, because inappropriate discrimination may exist for people with known infection. HIV results must be handled and communicated with discretion. In complying with the requirements of the law, physicians could indicate that the individual "has been tested and counseled, if found positive". The law does not require the disclosure of the test results to the Clerk of Court. Local Clerks of Court can be contacted regarding the appropriate wording requirements on the health certificate.

Appropriate counseling is the most important element in this screening program. Since the transmission of HIV infection is dependent upon personal behavior choices, couples should be counseled on how AIDS is transmitted, what past or future behaviors might put them at risk, and the implications of both positive and negative HIV antibody test results.

Repeatedly, epidemiologic surveillance confirms that HIV infection is not distributed equally throughout the population. The majority of cases are found

in people in specific risk groups, such as homosexuals or IV drug users. Heterosexual, monogamous people are at a much lesser risk of having or acquiring HIV infection. The efficacy of any screening strategy is dependent upon the prevalence of the disease in the population being screened. It would be useful during this year to compile the data generated from this screening to further evaluate the cost-effectiveness of this prevention strategy.

REFERENCES;

1. Cleary PD, Barry MJ, Mayer KH. Compulsory premarital screening for the human immunodeficiency virus. Technical and public health considerations. JAMA 1987;258:1757-1762.

2. Network News. A semi-monthly publication of the National AIDS Network. Vol.2, No.2, February 1, 1988.

Mortality and Economic Impact of Cigarette Smoking in Louisiana, 1985

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Epidemiology Section

The death toll and disease impact of cigarette smoking in the United States is enormous, and cigarette smoking has been identified as the chief avoidable cause of death. Cigarette smoking has been shown to be the single most important causal factor of cancers of the respiratory tract and other cancers, ischemic cardiovascular diseases and chronic obstructive respiratory diseases. Each year, over 300,000 deaths occur which are attributable to smoking, that is, which would have been averted had those people not smoked. (This is equivalent to two full-load Jumbo Jets crashing every day...) (1)

A methodology to analyze the mortality and economic costs related to smoking, using State data on mortality, smoking prevalence and health care costs, has been developed by the Minnesota Department of Health and is available as a computer software package called SAMMEC (Smoking-Attributable Morbidity, Mortality and Economic Costs). (2)

We conducted this analysis for Louisiana in 1985, using the SAMMEC software and the following information:

- Mortality by age, sex and cause for 1985, provided by the Division of Vital Records and Statistics, OPPHS-DHHR.
- Prevalence of smoking by age, sex and smoking status (current, former or never smoking), from the 1985 Current Population Survey, Smoking Supplement, U.S. Bureau of Census. (Table 1.)
- Health Care Expenditures for Louisiana, 1985, from the Health Care Financing Administration.

The estimates obtained from this analysis are as follows:

1. Smoking-Attributable Mortality.

   5,526 Louisiana residents died in 1985 from conditions that would have been prevented, had those

people not smoked. This represents 15% of all Louisiana deaths (20% for males, 10% for females.). 2,423 (44%) died from smoking related cardiovascular diseases, 2,154 (39%) from smoking related cancers, of which 1,629 (29%) were lung cancers, and 948 (17%) died from other smoking related diseases. 1,869 (34%) of these deaths occurred prior to age 65. (Tables 2,3,4.)

2. Years of Potential Life Lost. (YPLL)

Smokers die at an earlier age compared to non smokers. For a conservative approach, the SAMMEC methodology considers as premature a death that occurs before 65 years of age, although active and productive life goes beyond 65 years of age. In 1985, the total number of years of potential life lost by the 1,868 Louisiana residents who died before 65 years of age from smoking-attributable conditions was 17,000. Each of them would have enjoyed on average 9 additional years of life before age 65 if they had never smoked.

3. Economic Losses and Health Costs.

The economic burden attributable to cigarette smoking is broken down into Direct Health Care Costs, Indirect Mortality Costs, and Indirect Morbidity Costs.

- o The Smoking Attributable Direct Health Care Costs include the charges for hospitalization and nursing home care, physician services, medications, and other charges spent for the medical care of smoking attributable illness. According to the 1985 data on Health Expenditures in Louisiana, the Direct Health Care Costs Attributable to cigarette smoking were $439,582,000.

- o The Smoking Attributable Indirect Mortality Costs are the lost incomes and productivity from premature death due to smoking related conditions. For Louisiana in 1985, this was estimated as $380,025,000.

- o The Smoking Attributable Indirect Morbidity Costs are the lost incomes and productivity of persons disabled by smoking related illness. Our estimate for 1985 Indirect Morbidity Costs is $193,962,000.

- o When summing up the three above categories, the Total Health Costs and Economic Losses due to cigarette smoking add up to $1,013,570,000, which represent 17% of the Total 1985 Personal Health Care Expenditures.

Editorial Comment:

These computations are based on the actual 1985 figures for Mortality, Smoking Prevalence and Health Expenditures in Louisiana. The estimates for Health costs are conservative, because some adverse effects of smoking have not been included, such as deaths, burns and property damages due to fires caused by cigarette smoking, health effects of passive smoking on nonsmokers, fetal losses and perinatal mortality and morbidity among infants born to smoking mothers. Although conservative, these estimates demonstrate the extremely severe impact of cigarette smoking in economic terms and in human lives in Louisiana, and should help further support smoking prevention and cessation programs.

Table 1
SMOKING PREVALENCE (%)
IN LOUISIANA,1985
BY SMOKING STATUS, FOR AGES 20 TO 64
1985 CURRENT POPULATION SURVEY
U.S. BUREAU OF CENSUS.
(SMOKING SUPPLEMENT)

	Smoking Status		
	Current	Former	Never
Males	36.1	21.2	42.7
Females	26.2	17.4	56.5

Table 2
SMOKING ATTRIBUTABLE MORTALITY
BY DIAGNOSTIC GROUP AND GENDER
LOUISIANA, 1985

	Male	Female
Lung Cancer	1352	277
Other Cancers	367	158
Ischemic Heart Disease	954	320
Other Cardiovascular	564	585
Other Respiratory	633	252
Others	39	24
TOTAL	3909	1618
GRAND TOTAL		5526

Table 3
SMOKING - ATTRIBUTABLE MORTALITY
BY DIAGNOSTIC GROUP AND GENDER
LOUISIANA, 1985

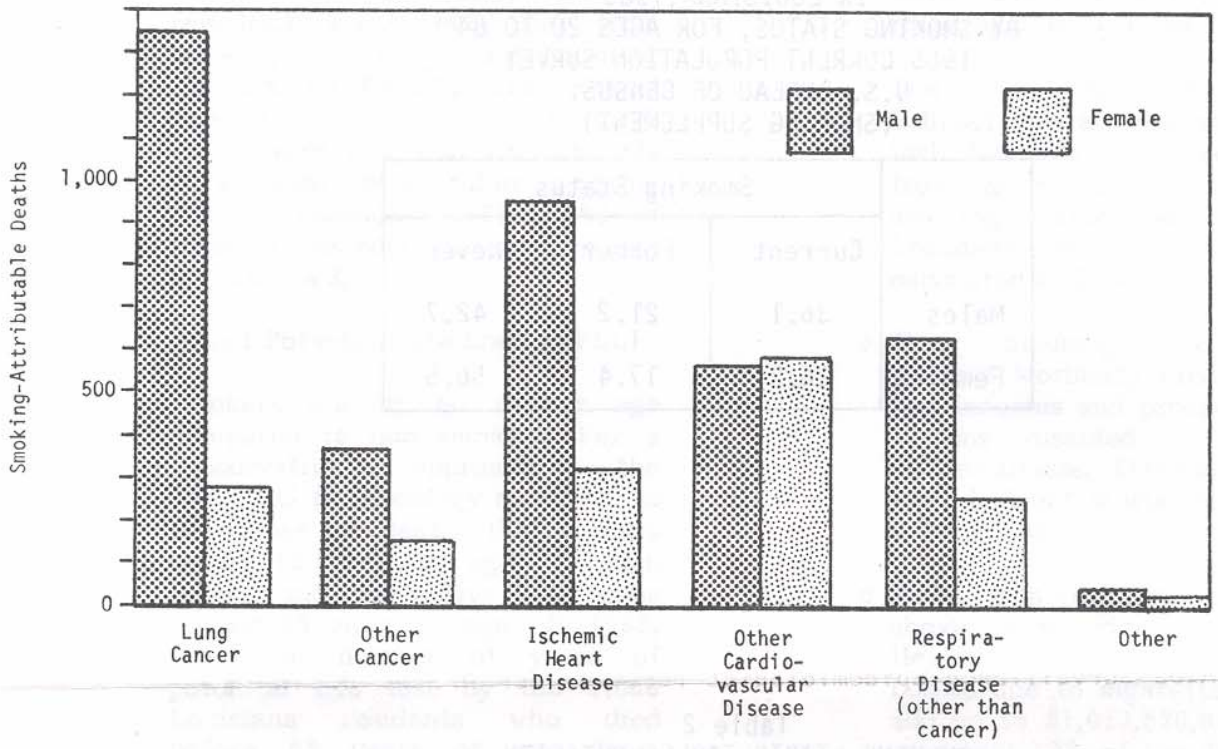

Table 4
SMOKING ATTRIBUTABLE MORTALITY
BY DIAGNOSTIC GROUP AND AGE GROUP
(Both sexes combined)
LOUISIANA 1985

	Both Sexes	
	Ages 20-64	Ages 65 +
Lung Cancer	676	953
Other Cancers	224	301
Ischemic Heart Disease	507	767
Other Cardiovascular	257	893
Other Respiratory	185	700
Others	19	44
TOTAL	1868	3659
GRAND TOTAL		5526

REFERENCES:

1. United Public Health Service. Smoking and Health. A report of the Surgeon General. Department of Health, Education and Welfare, Public Health Service, Office on Smoking and Health. DHEW Publication No. (PHS) 79-50066, 1979, 1251 pp.

2. Schultz JM, Rice DP, Hodgson TA. Computer Software for the Calculation of Smoking Attributable Mortality, Morbidity, and Economic Costs (SAMMEC). Center for Non Smoking and Health, Minnesota Department of Health. Minneapolis, Minnesota - August 1985.

BULLETIN

It is with great pride we announce that Ms. Susan Hassig, AIDS Surveillance Epidemiologist received her Dr. P. H. in December from Tulane School of Public Health. She has however, accepted a position conducting AIDS-related work in Zaire, Africa. We will miss her but wish her the very best.

Ms. Susan Troxler, R.N., M.P.H. has assumed the duties of AIDS Surveillance Epidemiologist as of November 30, 1987. Ms. Troxler is a former Infection Control Nurse with 8 years of experience in infection control and most recently the Infection Control Nurse for Tulane University Medical Center. She has received her MPH from Tulane University School of Public Health and Tropical Medicine.

Notification of Contact with Infectious Diseases

(ACT 805)

Act 805 of the 1987 Regular Session of the Louisiana Legislature mandated that the Department of Health and Human Resources establish regulations requiring hospitals to notify and advise any person(s) involved in the emergency treatment or transportation of ill or injured patients who are subsequently diagnosed as having certain infectious diseases.

The following contains the rule that was published in the November 20, 1987 issue of the Louisiana Register. The Epidemiology Section is accepting any written comments regarding R.S. 40:1099 as enacted by Act 805. Please forward such information to Dr. Louise McFarland, Office of Preventive and Public Health Services, P.O. Box 60630, New Orleans, LA., 70160.

R.S. 40:1099 defines hospital to mean any public or private health care facility which is primarily operated for the purposes of diagnosis, treatment or care of persons admitted for health care services. This definition expressly includes emergency rooms and outpatient clinics operated in connection with said health care facilities. In addition, R.S. 40:1099 B requires notification to and by nursing homes.

R.S. 40:1099 lists the following infectious diseases which are subject to notification requirements:

1. untreated pulmonary tuberculosis
2. acute meningococcal meningitis
3. acute hepatitis virus B infection (or diagnosed carriers of chronic hepatitis B)
4. human immunodeficiency virus (HIV) infection or acquired immunodeficiency syndrome (AIDS). These diseases must be reported within 48 hours of the confirmation of patient diagnosis.

In accordance with R.S. 40:1099, the following notification procedures shall be carried out in each hospital:

1. Each hospital shall be responsible for maintaining a registry or sign-in log which shall include the name, address and telephone number of the person(s) who provided emergency treatment and/or transportation of the patient, when the provider is someone other than an ambulance transportation service provider. Transporting ambulance providers shall continue to use the existing ambulance transportation log. The log shall later be referred to in the event that it becomes necessary to identify and notify such providers of the exposure to a patient who is subsequently diagnosed and confirmed as having one of the above listed infectious diseases.
2. Each hospital shall post a visible sign to advise the public that Louisiana law requires the hospital to notify, within 48 hours after diagnosis confirmation, any person who has provided emergency treatment or transportation of a patient who is later diagnosed to have infectious diseases as listed in R.S. 40:1099. In order to comply with this law anyone transporting a patient into the hospital must register in the hospital log book. Transporting ambulance service providers, however, will

continue to sign the existing ambulance log which is currently completed whenever a patient is transported by ambulance to the hospital.

3. The hospital's Infection Control Officer (ICO) or other administratively designated staff person shall be promptly notified of all cases involving confirmed diagnoses of the above listed infectious diseases. The ICO shall confidentially contact the listed person(s) or transporting ambulance firm to advise of the exposure to a confirmed case of an infectious disease. The notification, which shall be done within 48 hours, must include a statement that the transporting individual contact a designated hospital staff person for necessary consultation. The hospital must document that the required notification and consultation, if held,has taken place.

R.S. 40:1099 further requires that a physician who has actual knowledge of his patient's infectious disease as listed above shall notify the hospital or nursing home of his patient's disease upon admission. Furthermore, whenever a patient with a listed infectious disease is transferred from a nursing home to a hospital or vice versa, the transferor shall follow the same notification procedures.

Hospitals and nursing homes must assure that their policies and procedures on confidentiality are updated to include such notification procedures as required by R.S. 40:1099.

In addition, the existing reporting requirements of Chapter II of the State Sanitary Code shall continue to be met.

LOUISIANA AIDS UPDATE

	CASES	DEATHS	PERCENT
1987 (thru 12/31/87)	271	102	38
TOTAL, ALL YEARS	715	453	62

Selected Reportable Diseases

(By Place of Residence)

State and Parish Totals REPORTED MORBIDITY NOVEMBER, 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	3	15	5	95	141	245	5	18	20	244	349	1	367	5	16727	847	22
TOTAL TO DATE 1987	0	0	660	49	0	79	145	465	6	1	23	470	248	0	940	0	13488	704	13
TOTAL THIS MONTH	0	0	93	2	0	7	21	46	1	0	0	52	42	0	70	0	681	69	0
ACADIA								1							3		4		
ALLEN			39										1		1		1		
ASCENSION												1					5		
ASSUMPTION												1							
AVOYELLES															1		2		1
BEAUREGARD							1											1	
BIENVILLE																			
BOSSIER						1			1						2		2		2
CADDO						2						6	2		6		113		3
CALCASIEU			33			1	6	9				1	5		8		37	1	
CALDWELL																			
CAMERON			1										1						
CATAHOULA													2				1		
CLAIBORNE													1				3		1
CONCORDIA								1									2		
DESOTO															1		3		1
EAST BATON ROUGE			3				2	1					1		3		106	18	
EAST CARROLL															1				
EAST FELICIANA													1				3		
EVANGELINE																	3		
FRANKLIN																	5		
GRANT			1														4		
IBERIA								1				1					14	1	
IBERVILLE															1		4		
JACKSON																	1		
JEFFERSON			5				6	8				4	1		7		8	6	
JEFFERSON DAVIS			1														3		
LAFAYETTE												1	2		1		31		
LAFOURCHE						1		1							1		5		
LASALLE																			
LINCOLN															1		3		3
LIVINGSTON													1				1		
MADISON			3										1				10	1	
MOREHOUSE													1				2		
NATCHITOCHES																	5		
ORLEANS			1	1		1	4	15				31	8		14		82	32	
OUACHITA								1				1	1		2		37		
PLAQUEMINES													1						
POINTE COUPEE																	2	1	
RAPIDES												1	3		2		34		2
RED RIVER																			
RICHLAND																	2		
SABINE												1							
ST. BERNARD								3									1	1	
ST. CHARLES			1												1		3	2	
ST. HELENA																			
ST. JAMES																	4		
ST. JOHN			1														5	1	
ST. LANDRY													2		3		19		
ST. MARTIN								2									12		
ST. MARY													2		1		3		
ST. TAMMANY			3				1					2			2		8	1	
TANGIPAHOA													1		2		6	2	
TENSAS													1				1		
TERREBONNE				1											2		6		
UNION															1		3		
VERMILION						1		2					1		2			1	
VERNON			1				1										56		
WASHINGTON								1							1		3		
WEBSTER												1	1				5		
WEST BATON ROUGE													1				4		
WEST CARROLL																			
WEST FELICIANA																			
WINN																	2		
OUT OF STATE																	2		

From January 1, 1987 - November 30, 1987, the following cases were also reported:
2-Amebiasis, 1-Brucellosis, 5-Cholera, 5-Leptospirosis, 7-Reye Syndrome, 3-Tularemia.

* Includes Rubella, Congenital Syndrome.

** Includes 25 cases of Hepatitis Non A, Non B.

*** Acquired outside United States unless otherwise stated.