



MONTHLY MORBIDITY REPORT

PUBLIC HEALTH STATISTICS and DIVISION OF DISEASE CONTROL

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

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

REPORTING OF DIABETES MELLITUS ON DEATH CERTIFICATES IN LOUISIANA

Reporting of diabetes mellitus on death certificates has been found to be incomplete and nonspecific, resulting in an incomplete and inaccurate picture of the disease. At the present time, mortality data is the only constant source of information on diseases present among a given population. Despite its shortcomings, it is used to assess disease rates and for health planning on national and local levels.

Problems with reporting of diabetes on death certificates can be divided into several types:

- a) Underreporting of diabetes.
- b) Lack of designation of types of diabetes.
- c) Lack of specificity in reporting diabetic complications.

The Louisiana Diabetes Control Project of the Department of Health and Human Resources in cooperation with three acute care hospitals in Lafayette conducted a study to determine whether death certificates can be improved as a source of data in Louisiana.

Medical records and death certificates of

persons who had diabetes mellitus listed as a diagnosis and who were discharged to death (i.e. patient expired in hospital) from each facility from December 1, 1983 through May 31, 1984 were examined and abstracted. In addition, medical records of all hospitalized individuals age 55-69 years at the time of death were also examined to verify that diabetes was not present or uncoded in the medical record. A pilot Physician's Supplemental Form was attached to blank death certificates at each hospital and was to be completed by staff physicians when completing the death certificate. The Physician's Form had questions specifically pertaining to diabetes and diabetic complications. The goal was to make the physician consider diabetes in more detail when completing the death certificate.

As a control, medical records and death certificates of the same time frame one year earlier which met the above criteria were also examined and abstracted. Appropriate comparisons were made to determine what impact the Physician's Supplemental Form had on reporting diabetes on death certificates.

Of 335 decedents for both periods, 130 confirmed diabetic patients were located. Sixty-three died in the retrospective period

and 67 died in the prospective period.

The protocol had a negligible effect on the three major problems of the reporting of diabetes on death certificates:

- a) Underreporting - Only 29% of diabetic individuals in the retrospective period and 30% in the prospective period had diabetes listed on the death certificate. The difference is non-significant.
- b) Lack of designation of type of diabetes - In both control and study periods no reporting of diabetes by type was found on death certificates.
- c) Lack of specificity in reporting diabetic complications - Reporting of other conditions as specific complications of diabetes was rare in both groups. Of 357 references to complications in the patient's medical record, only 63 (17%) were subsequently reported on the death certificate. There were no real differences between the two groups.

Very few of the Supplemental Forms were completed. Of the 164 death certificates

reviewed, only 20 had a completed form. This is a response rate of 12%. We can only speculate as to why the physicians did not complete the form. One problem was that emergency room physicians with virtually no prior knowledge of a patient often signed the death certificate. Time constraints may have made them and other physicians unwilling to scan the chart.

The reporting of diabetes mellitus remains a problem, even when specific requests are made of the attending physician to provide additional information. The results also indicate the difficulty of relying solely on death certificates for surveillance of diabetes both for planning and evaluation purposes. The amount of underreporting found was almost double the 38% underreporting previously estimated for diabetes in Louisiana.

The use of a Supplemental Form attached to death certificates to improve reporting of diabetes was clearly unsuccessful. If death certificates are to be a more useful tool for assessing diabetes and its complications, then greater attention must be paid to accuracy and thoroughness in reporting death-related data.

DIABETIC PERIPHERAL VASCULAR DISEASE. IN ST. LANDRY PARISH

Peripheral vascular disease, a common development among people with diabetes, leads to inadequate blood supply in the lower extremities. This can result in an insensitive foot, particularly when diabetic neuropathy (nerve damage) is also present. Decreased sensation in the diabetic foot is frequently associated with injuries and ulcers which may lead to gangrene and eventual amputation.

A lower extremity amputation is sixteen times more common in the diabetic population than in the non-diabetic population.

The Louisiana Diabetes Control Project (LDCP), of the Department of Health and Human Resources identified residents of St. Landry Parish in mid-Louisiana as having a relatively high rate of hospitalization for diabetic peripheral vascular disease (DPVD) compared to surrounding parishes. This finding was derived from analysis of hospital discharge data. The LDCP, in association with the St. Landry Parish Medical Society and four area hospitals, conducted a study to determine the cause of hospitalization and to determine what risk factors were associated with diabetic peripheral vascular disease.

St. Landry area physicians and hospitals provided lists of names of patients that had been treated for DPVD from October 1, 1982 through September 30, 1983. Letters describing the study and consent forms were sent to the patients by the physician. Individuals in the control group (diabetes without DPVD) were matched to the case group based on age (\pm 5 years), race and sex. Controls were selected from physician's records.

The data collection instrument was designed to use three sources of infor-

mation: Physician's office records, hospital medical records, and a patient interview. The physician's and hospital records were used to confirm diabetes, DPVD, and diabetic neuropathy. The hospital record was used to determine precise reasons for hospitalizations and procedures which may have been performed. The review of the physician's record determined the patient's health status prior to hospitalization, patterns of health care, education provided on foot care, and possible events leading to hospitalization. The patient interview elicited information on occupational history, smoking history, family history, medications used, and patterns of self care and medical care.

The abstract form for the control group determined level of diabetic control and frequency of physician visits. Telephone interviews provided information on occupation, smoking, family history, and medications used.

Of 54 potential subjects, the Project received 30 signed consent forms. Twenty six complete sets of forms consisting of the physician record abstract, hospital record abstract, and patient interview were collected; two sets had incomplete interviews; and two could not be confirmed as having DPVD.

The race-sex composition of the case subjects was as follows:

Black Female - 42.8%
Black Male - 14.3%

White Female - 14.3%
White Male - 28.6%

Ages ranged from 37 - 86 years, with a mean and median age of 65.

The analysis of the data revealed several factors associated with the development of DPVD for these patients in St. Landry Parish.

The study group had a mean duration of diabetes since diagnosis of 16.5 years and an average age of onset of 42 years. Sixty-one percent used insulin. The matched controls ($n = 41$) had an average duration of 10.2 years and an average age of onset of 54 years. Forty-two percent used insulin. These are significant differences ($p < .05$).

While 53% of the study group had ever smoked, only 34% of the controls had. Although the length of time of smoking was roughly equal between the case and control groups (about 30 years), the study group averaged 1.7 packs per day (former smokers) and 1.2 ppd (current smokers), while the control group averaged .80 ppd (former smokers) and .90 ppd (current smokers). The difference in the former smokers is significant at $p = .05$. Because of small numbers of current smokers, the difference was not significant for this group. When former and current smokers are combined the cases smoked an average of 1.5 ppd; the controls smoked an average of .85 ppd ($p = .02$).

Subjects' responses to questions about routine foot care and hygiene revealed potential problems in both professional education and in patient self-care. One physician's record documented foot care instructions; 73% of the patients specifically said that they had not received foot care instructions from their doctor. Fifteen percent of the subjects reported daily foot inspections at home and 65% said that they never examined their feet. Only 2 patients had specially fitted shoes.

Hospital records revealed that only 28% of the DPVD-related admits had a recorded underlying cause, and these 28% were found to be attributable to poor foot care. Shoe trauma accounted for one half of these recorded causes and subsequently led to three amputations.

Both case and control groups showed an overwhelming prevalence of hypertension. Ninety-three percent of the cases and 91% of the controls were diagnosed hypertensives. The prevalence of hypertension among diabetics over 45 in the United States is about 50%. Since hypertension is an acknowledged risk factor for the development of DPVD, this represents a potential risk for many of the diabetic residents of St. Landry Parish.

Based on these findings, the LDGP is proposing preliminary intervention strategies in conjunction with St. Landry Parish physicians. These include an anti-smoking media campaign aimed at diabetics and an introduction of a foot care program in the physician's offices. Examination of the use of diuretics in the treatment of diabetic hypertensives should also be initiated, as this group of medications may cause increased hyperglycemia.

Although the proposed interventions were developed from St. Landry-based data, the Diabetes Project believes the strategies are applicable to all parishes and urges that all physicians be aware of the potential risk factors contributing to high rates of DPVD and resulting amputations. For further information contact:

DHHR-OPPHS
Louisiana Diabetes Control Project
P.O. Box 60630
New Orleans, Louisiana 70160

SELECTED REPORTABLE DISEASES (By Place of Residence)

STATE AND PARISH TOTALS REPORTED MORBIDITY JUNE, 1985	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, 1985)
	MEASLES	RUBELLA*	MUMPS	PERTUSSIS	TETANUS														
TOTAL TO DATE 1984	0	0	0	3	1	19	157	171	0	5	40	29	144	1	63	7	12898	621	23
TOTAL TO DATE 1985	32	0	2	5	0	28	84	101	2	0	21	19	158	0	66	3	11233	553	10
TOTAL THIS MONTH	22	0	0	0	0	10	20	20	1	0	4	7	26	0	14	0	1560	108	2
ACADIA								1							1		3		
ALLEN													1				8		
ASCENSION											2	1					6		
ASSUMPTION																	11		
AVOUELLES																	9		3
BEAUREGARD																	2		
BIENVILLE																	1		
BOSSIER																	27		
CADDO						1	2						4		2		221	9	
CALCASIEU						1	3				1				3		70	4	
CALDWELL																	1		
CAMERON																			
CATAHOULA																	5		
CLAIBORNE																	9	4	
CONCORDIA						1											3		
DESOTO						1											3		1
EAST BATON ROUGE											1	4			1		119	14	1
EAST CARROLL							1										3	1	
EAST FELICIANA																	1	2	
EVANGELINE													1				1	1	1
FRANKLIN													1				11		
GRANT							1										4		
IBERIA																	10	1	
IBERVILLE																	1	2	
JACKSON																			
JEFFERSON							2	2									98	6	
JEFFERSON DAVIS													1				1		
LAFAYETTE							2	1					1				47	3	
LAFOURCHE													2				27		
LASALLE																			
LINCOLN																	13		
LIVINGSTON								1									2		
MADISON																	1	1	
MOREHOUSE																	12		
NATCHITOCHE												1	2		1		5	1	
ORLEANS						3	3	12					12				462	31	
OUACHITA							1										62	4	1
PLAQUEMINES																		2	
POINTE COUPEE																	4	1	
RAPIDES															1		80	3	3
RED RIVER																			
RICHLAND																	2		
SABINE																	1	1	
ST. BERNARD															1			1	
ST. CHARLES															1		17	2	
ST. HELENA																			
ST. JAMES							1										12		
ST. JOHN																	6		
ST. LANDRY								1	1								9	5	
ST. MARTIN																	1	1	
ST. MARY																	2	1	
ST. TAMMANY	3						2						1		1		15		
TANGIPAHOA								1							1		3		
TENSAS																			
TERREBONNE	1					3											58	2	
UNION																	3	1	
VERMILION							2					1					3		
VERNON																	58	1	
WASHINGTON	18																1		
WEBSTER															1		21		
WEST BATON ROUGE								1										1	
WEST CARROLL																	2		
WEST FELICIANA																		1	
WINN																		1	
OUT OF STATE																	3		

* Includes Rubella, Congenital Syndrome.

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

*** Acquired outside United States unless otherwise stated.

From January 1, 1985 - June 30, 1985 the following cases were also reported:
1-Brucellosis; 1-Coccidioidomycosis; 2-Reye Syndrome.

RAOUL C RAYARD MD
4109 CLEVELAND PL
METAIRIE LA 70003

8

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

DEPARTMENT OF HEALTH AND HUMAN RESOURCES
OFFICE OF PREVENTIVE AND PUBLIC HEALTH SERVICES
PUBLIC HEALTH STATISTICS

This public document was published at a total cost of \$990. 5200 copies of this public document were published in this first printing at a cost of \$166. This document was published by the Office of Preventive and Public Health Services, New Orleans, 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.