

COMPdata Monthly Monitor - Montana
January 2006
Kidney Disease

INTRODUCTION

The increasing and aging U.S. population has led to an increase of kidney disease in the past 25 years¹, creating a challenge for hospitals caring for these patients. There is some good news: in recent years, the launch of private and government programs are credited with increasing awareness by hospitals and health professionals of the links between kidney disease, diabetes, and high blood pressure. This increased awareness, along with clinical strategies such as hypertension control and diabetes treatment that significantly delay or prevent kidney disease, has coincided with stabilized rates of kidney failure in the U.S. in recent years. In 2003, the rate of kidney failure was 338 per million population, down slightly from 2002. Prior to 1999, there were 20 years of annual increases averaging 5 percent.¹

The changing detection and treatment of kidney disease presents both opportunities and challenges for hospitals. In recent years, a push toward daily, home-based dialysis for renal failure patients has begun, but the number of patients currently receiving such treatment is limited due to a variety of factors. Many hospitals are limited in their ability to provide the training to patients and caregivers that is necessary for home dialysis.² This is due to limited staff resources and the general lack of reimbursement for home dialysis training. A corresponding challenge for hospitals is the complexity that's added to a home dialysis patient's care when they require emergency or inpatient care at the hospital.

The treatment of early kidney disease is highlighted by the increased use of medications such as angiotensin-converting enzyme inhibitors (ACE inhibitors) and angiotensin receptor blockers (ARBs), which delay or prevent kidney failure. In the past decade, the use of these drugs doubled among people over age 60 with CKD. Nearly half of patients with diabetes, hypertension, or congestive heart failure use them.¹

COMPdata STATISTICS ON KIDNEY DISEASE INPATIENTS IN MONTANA HOSPITALS

(Note: All of the following inpatient statistics exclude newborns and obstetric cases – Major Diagnostic Categories 14 and 15.)

Table 1 - Total Montana Inpatients
Excludes MDCs 14 & 15

	2001	2004	% Change 2001 to 2004
	Discharges	Discharges	
Total Montana Patients	81,510	82,004	0.6

Table 2 – Total Acute Kidney Disease Inpatients
ICD-9 diagnosis code for Acute Renal Failure: 584.9
Excludes MDCs 14 & 15

	2001		2004		% Change 2001 to 2004
	Discharges	% of All Discharges	Discharges	% of All Discharges	
All Diagnoses	996	1.2%	1,374	1.7%	38.0%
Principal Diagnosis	269	0.3%	331	0.4%	23.0%
Other Diagnoses	727	0.9%	1,043	1.3%	43.5%

Table 3 – Total Chronic Kidney Disease Inpatients
ICD-9 diagnosis code for Chronic Renal Failure: 585.0
Excludes MDCs 14 & 15

	2001		2004		% Change 2001 to 2004
	Discharges	% of All Discharges	Discharges	% of All Discharges	
All Diagnoses	909	1.1%	929	1.1%	2.2%
Principal Diagnosis	61	0.1%	41	0.0%	-32.8%
Other Diagnoses	848	1.0%	888	1.1%	4.7%

- Acute kidney disease and chronic kidney disease is most often a secondary diagnosis among hospital inpatients.
- Table 2 shows a clear pattern of increases in all acute kidney disease diagnoses from 2001 to 2004. Since acute kidney failure patients tend to be older than other kidney patients (see Table 6), it is likely that inpatient volumes for acute kidney disease will increase in coming years due to the aging population.
- Unlike acute kidney disease, there was a sharp decline in chronic kidney disease as a primary diagnosis from 2001 to 2004, and there was only a small increase in chronic kidney disease as a secondary diagnosis in that same time frame.

Table 4 – Top 5 Principal Diagnoses for Inpatients with Secondary Diagnosis of Acute Kidney Disease

ICD-9 Other diagnosis code for Acute Renal Failure: 584.9

Excludes MDCs 14 & 15

ICD-9 Code and Description	2004 Cases	% of Total	% Change 2001 to 2004
42800 CHF NOT OTHERWISE SPECIFIED (NOS)	75	7.2	31.6
03890 SEPTICEMIA NOS	50	4.8	61.3
48600 PNEUMONIA ORGANISM NOS	45	4.3	28.6
27650 VOLUME DEPLETION	30	2.9	76.5
03842 E. COLI SEPTICEMIA	23	2.2	187.5
OTHER	820	78.6	N/A
TOTAL	1,043	100.0	43.5

Table 5 – Top 5 Principal Diagnoses for Inpatients with Secondary Diagnosis of Chronic Kidney Disease

ICD-9 Other diagnosis code for Chronic Renal Failure: 585.0

Excludes MDCs 14 & 15

ICD-9 Code and Description	2004 Cases	% of Total	% Change 2001 to 2004
42800 CHF NOT OTHERWISE SPECIFIED (NOS)	79	8.9	25.4
48600 PNEUMONIA ORGANISM NOS	48	5.4	-2.0
58490 ACUTE RENAL FAILURE NOS	41	4.6	24.2
41401 COR AS-NATIVE VESSEL	22	2.5	22.2
99673 COMPLICATIONS DUE TO RENAL DIALYSIS	21	2.4	-36.4
OTHER	677	76.2	N/A
TOTAL	888	100.0	4.7

- Tables 4 and 5 above show distributions of the top principal diagnoses for patients with a secondary diagnosis of acute or chronic kidney disease. The most frequent diagnosis for both is congestive heart failure.
- Congestive heart failure as a primary diagnosis for chronic kidney disease patients has risen at more than five times the rate of chronic kidney disease overall, 25.4% to 4.7%.
- Septicemia has increased dramatically as a primary diagnosis for patients with secondary diagnoses of acute renal failure. For these patients, Septicemia NOS has increased 61.3% and E. Coli Septicemia has increased 187.5% as a primary diagnosis since 2001, compared to a 43.5% overall increase in acute kidney disease as a secondary diagnosis.

Table 6 - Patients with Acute, Chronic, and All Kidney Disease
2004 Inpatient Discharges - (Excludes MDCs 14 &15)
ICD-9 principal diagnosis code for Acute Kidney Failure: 584.9
ICD-9 principal diagnosis code for Chronic Kidney Failure: 585.0
ICD-9 diagnosis codes for all Kidney Disease: 580.0 to 593.9

Table 6 – Part I Admission and Discharge Patterns		Acute Renal Failure	Chronic Renal Failure	All Kidney Disease
		Total N = 331 (%)	Total N = 41 (%)	Total N = 1,530 (%)
Admission Source	Emergency Room	45.6	36.6	53.4
	Hospital Transfer	11.2	4.9	4.6
	Physician Referral	38.7	58.5	39.2
	Other	4.5	0.0	2.8
Admission Type	Emergency	42.3	26.8	42.3
	Urgent	42.3	39.0	36.3
	Elective	15.4	34.2	21.4
Discharge Status	Routine to Home	52.9	58.5	79.7
	To Skilled Nursing	17.2	22.0	7.3
	To Home Health	5.4	4.9	3.4
	Expired	10.0	7.3	2.9
	Other	14.5	7.3	6.6
Hospital Location	Other Urban	42.9	39.0	36.4
	Rural	57.1	61.0	63.4

Table 6 – Part II Patient Characteristics		Acute Renal Failure	Chronic Renal Failure	All Kidney Disease
		Total N = 331 (%)	Total N = 41 (%)	Total N = 1,530 (%)
Gender	Female	46.8	51.2	57.2
	Male	53.2	48.8	42.8
Primary Payer	Medicare	63.8	73.2	42.6
	Commercial Ins	28.1	14.6	44.6
	Medicaid	5.4	2.4	8.4
	Other	3.7	9.8	19.3
Age	Under 65 Years	31.7	34.7	58.3
	65 to 84 Years	53.7	48.3	33.1
	85 Years and over	14.6	17.0	8.6
	Average Age	69.7	69.6	56.6
Avg Length of Stay	5.6	4.8	3.6	
Avg Total Charge	\$2,583	\$2,845	\$2,664	

Table 6 (Parts I and II) provides statistics that explore in more detail the characteristics of those patients who were discharged in 2004 and had acute or chronic kidney failure as a principal diagnosis and those who had any other kidney disease as a principal diagnosis. As a principal diagnosis in Montana hospitals, there were 331 acute renal failure patients, 41 chronic renal failure and 1,530 total kidney disease patients. Some additional highlights found in Table 6 are:

- Acute and chronic renal failure patients tend to be older than kidney disease patients overall and, on average, their hospital stays are longer.
- Acute and chronic renal failure patients tend to be discharged to a skilled nursing facility at a higher rate than kidney patients overall, which may be associated with their advanced age compared to all kidney disease patients.
- Acute renal failure patients are more likely to be male than chronic kidney failure patients and kidney disease patients overall.
- Patients diagnosed with acute or chronic renal failure expired at more than twice the rate of the overall population diagnosed with kidney disease.

MONTANA STATISTICS FROM COMPdata

All of the Montana patient statistics were derived from MHA's COMPdata. We encourage you to use COMPdata to examine your hospital community area(s) regarding Kidney Disease so that you might better understand the impact of these patients on the care and treatment of your patient population and the resources needed to diagnose, treat, and manage kidney disease.

The COMPdata graphing feature can be utilized to examine in a pictorial fashion trends in your state and hospital community area(s) regarding kidney disease. Click here to obtain a pie chart that illustrates the distribution of discharge status for patients with acute kidney disease (as a principal diagnosis):

<http://www.compdatainfo.com/news/monitor/montana/kidneygraph.pdf>.

ADDITIONAL INFORMATION

If you would like to develop the COMPdata reports that will provide similar statistics for your hospital or community, a training tool is available to guide you through the process. Click here to obtain the tool:

<http://www.compdatainfo.com/news/monitor/montana/kidneytool.pdf>. For additional assistance on using the COMPdata system, contact the COMPdata Hotline at compdata@ihastaff.org.

For questions and suggestions regarding the *COMPdata Monthly Monitor*, contact: Tim Shaver, Health Information Analyst at tshaver@ihastaff.org.

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APPENDIX

Kidney Disease

Tiny units inside the kidneys, called nephrons, filter thru about 200 quarts of blood per day to sift out about two quarts of waste products and extra water. Inside the nephron, a type of capillary called a glomerulus intertwines with a tiny urine-collecting tube called a tubule to process waste materials and water from the blood and allow it to enter the urinary system. The kidneys also return needed chemicals to the body found in the tubules, aiding in the body's regulation process. Kidney disease occurs most often when complications from diabetes or high blood pressure cause the nephrons to lose their filtering capacity.³

Kidney Disease Patients

- 392,023 U.S. residents were under treatment during the calendar year 2001, and 93,327 U.S. residents were new beneficiaries of treatment.¹
- An estimated 34 percent of adults aged 20 and older have had at least one occurrence of a urinary tract infection or cystitis.⁴
- An estimated 4.5 percent of adults 20 years of age and older have physiological evidence of chronic kidney disease as determined by a moderately or severely reduced filtration rate.⁵
- 15,331 kidney transplants were performed in the U.S. in 2001.¹
- As of February 13, 2006, 90,982 patients were awaiting a kidney transplant throughout the U.S.⁶

SOURCES FOR ADDITIONAL INFORMATION

For Hospitals

The National Institute of Diabetes, Digestive, and Kidney Diseases (NIDDK) is a division of the National Institute of Health and an excellent repository for clinical research and funding opportunities in the field of kidney disease. The site is located at: <http://www.niddk.nih.gov>.

Professionals with an interest in kidney disease information can visit Renal Web at <http://www.renalweb.com>. This for-profit site lists products and services for kidney patients as well as classified job ads and the latest news in dialysis and other kidney-related procedures.

The Nephrology Gateway is a service of the International Society of Nephrology that can be found at <http://www.isn-online.org/isn/index.html>. The Gateway is a one-stop-shop for the latest news on kidney and related diseases, research developments, treatment updates, educational resources, ISN member information and services, and much more.

For Patients and the Community

An excellent source of facts and figures on kidney disease is the National Kidney Foundation web site at <http://www.kidney.org>. The site includes clear and concise descriptions of kidney diseases and treatment options as well as a link to information about the effect of the new Medicare Part D plan on drug coverage for kidney disease patients.

Information for dialysis and transplant patients can be found at the American Association of Kidney Patients web site. The site includes a list of advocacy opportunities for kidney disease patients and is located at <http://www.aakp.org>.

<http://www.urologyhealth.org> is a service of the American Urological Association that enables patients to find information on pediatric and adult kidney conditions, as well as information on providers in their area.

The United Network for Organ Sharing keeps a current count of the number of kidney transplant waiting list candidates at www.unos.org.

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