

Kidney Disease

Research Updates

National Kidney and Urologic Diseases Information Clearinghouse

Winter 2007

NKDEP Promotes Use of eGFR to Detect CKD

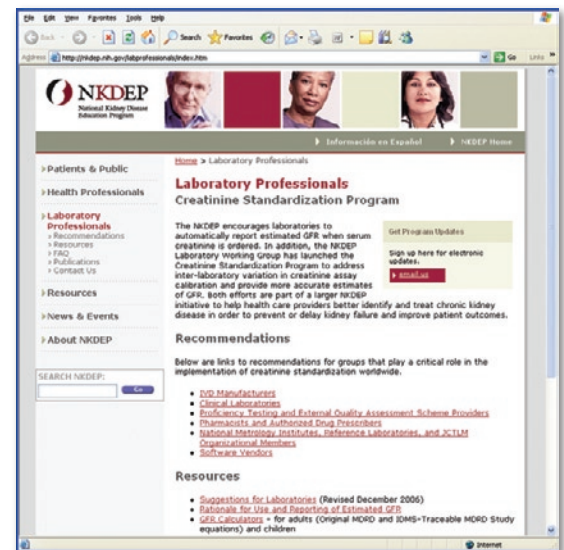
The National Kidney Disease Education Program (NKDEP) hopes to reduce the number of people in the United States with kidney failure by helping health care providers detect chronic kidney disease (CKD) earlier.

Through the Creatinine Standardization Program, the NKDEP's Laboratory Working Group is collaborating with the clinical laboratory community to improve the reliability of the serum creatinine measurement. The improved creatinine measurement, in turn, will improve the accuracy of the estimated glomerular filtration rate (eGFR), which is derived from the serum creatinine measurement and is the best measure of kidney function.

Creatinine is a waste product in the blood created by the normal breakdown of muscle cells during activity. When kidneys are not working well, creatinine builds up in the blood.

The glomerular filtration rate (GFR) is a measure of how well kidneys filter wastes from the blood. The NKDEP recommends the GFR be estimated for adults using the Modification of Diet in Renal Disease (MDRD) study prediction equation, which includes a serum creatinine value and values for age, gender, and race.

Currently, variability in serum creatinine measurements among laboratories renders GFR estimating equations less accurate in the normal and slightly elevated range of serum creatinine concentrations, which is the relevant range for detecting CKD. The Creatinine Standardization Program, as its name implies, intends to facilitate standardization of serum creatinine measurement in labs worldwide.



The Laboratory Professionals section of the NKDEP website provides information about the modified version of the MDRD equation.

Modified Equation

When clinical laboratories begin using standardized methods for measuring creatinine, they also will need to start using a modified version of the MDRD equation. The Laboratory Professionals section of the NKDEP website at www.nkdep.nih.gov/labprofessionals has more information

CREATININE STANDARDIZATION PROGRAM,

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National Institute of
Diabetes and Digestive
and Kidney Diseases



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CREATININE STANDARDIZATION PROGRAM, from page 1

about the modified equation. The website also provides health professionals with GFR calculators for estimating kidney function in adults and children.

The Creatinine Standardization Program offers recommendations for, and coordinates communication among, groups that play a role in standardizing creatinine measurement, including in-vitro diagnostic manufacturers, clinical

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Greg Miller, Ph.D.
Chair, NKDEP Laboratory
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laboratorians, pharmacists, and health care professionals. The website allows these groups to sign up for electronic program updates and find information specific to their needs.

Related Priority

Another goal of the Creatinine Standardization Program is to increase the number of diagnostic labs that routinely report eGFR when serum creatinine is ordered.

“Although eGFR is a superior measure of kidney function, few health care providers are using it or ordering it from diagnostic laboratories, relying instead on serum creatinine, which is frequently misinterpreted,” said Greg Miller, Ph.D., the Working Group’s chair.

“Consequently, providers are failing to detect CKD early, allowing kidney damage to progress without treatment,” Miller continued. “More widespread use and reporting of eGFR would dramatically improve providers’ ability to detect kidney disease, leading to earlier treatment and a likely reduction in the incidence of kidney failure.”

At least 8 million Americans have stage 3 or more advanced CKD, and the number is growing. Many people with CKD develop kidney failure, which cost the nation more than \$32.5 billion to treat in 2004. ■

Kidney Disease Research Updates

Kidney Disease Research Updates, an email newsletter, is sent to subscribers four times a year by the National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC). The newsletter features news about kidney diseases, special events, patient and professional meetings, and new publications available from the NKUDIC and other organizations.

If you would like to subscribe, send an email to niddk@info.niddk.nih.gov. You can read or download a PDF version of the newsletter at <http://kidney.niddk.nih.gov/about/newsletter.htm>.



Executive Editor: Andrew Narva, M.D.

Andrew Narva, M.D., is the director of the National Kidney Disease Education Program (NKDEP) within the National Institute of Diabetes and Digestive and Kidney Diseases. Dr. Narva, a graduate of Harvard Medical School and board-certified in internal medicine and nephrology, served with the Indian Health Service before joining the NKDEP. He also was a member of the National Kidney and Urologic Diseases Advisory Board, the Renal Community Council of the U.S. Renal Data System, the Medical Review Board of End-Stage Renal Disease Network 15, and the National Kidney Foundation’s Minority Outreach Committee, which he chaired.



NKDEP Sets Priorities for Coming Year

Program Director Stresses Importance of eGFR and Education in Improving CKD Care

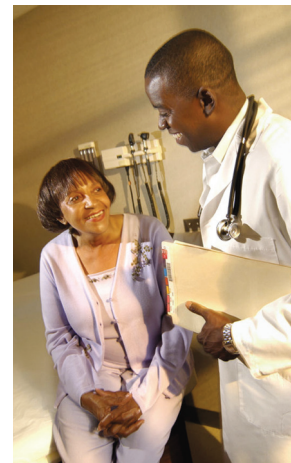
Helping clinical generalists improve care for people with chronic kidney disease (CKD) is a key goal for the National Kidney Disease Education Program (NKDEP) in the coming year, according to Program Director Andrew Narva, M.D. Narva outlined program goals for NKDEP coordinating panel members during an October 20, 2006, panel meeting.

“We need to teach primary care providers that taking care of CKD patients is routine—that CKD is part of primary care,” said Narva, a veteran of the Indian Health Service Kidney Disease Program. “The NKDEP can be a change agent for facilitating improved care for people with CKD.”

To achieve this goal, the NKDEP must help define collaboration between primary care providers and nephrologists and help primary care providers learn to identify who’s at greatest risk for progressive CKD, according to Narva. The NKDEP also needs to translate the public health model, which includes CKD for primary care providers, Narva said.

The 2007 NKDEP objectives Narva identified are to

- help primary care providers better assess and treat CKD
- help all health professionals better educate patients about CKD, particularly in at-risk communities, by creating and distributing education tools
- improve diagnostic tools to assess kidney function by making routine estimated glomerular filtration rate (eGFR) reporting universal
- improve coordination of the Federal response to CKD by serving as a clearinghouse for information and ideas about how the Federal Government is responding—and can respond—to CKD



eGFR Progress

During the meeting, coordinating panel members acknowledged the NKDEP’s progress in encouraging laboratories to report eGFR. The NKDEP is currently fielding a survey to determine how many U.S. laboratories have adopted this desired practice. Narva said over the next year, the NKDEP will work to help physicians use eGFR more consistently and appropriately.

Emerging CKD Trends

In a lunch presentation, Paul Eggers, Ph.D., program director for Kidney and Urology Epidemiology at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), said that while CKD rates for African Americans and Caucasians are the same, end-stage renal disease (ESRD) rates for African Americans are four times higher—and researchers are unsure why.

Eggers also reported that the incidence of ESRD has stabilized since 2000, which may be due to better treatment of CKD, particularly among people with diabetes. Eggers pointed out that even small decreases in ESRD incidence can have a big economic impact because each person with ESRD costs Medicare about \$65,000 annually.

“The NKDEP can be a change agent for facilitating improved care for people with CKD.”

Andrew Narva, M.D.
NKDEP Director

New NIDDK Website Makes Debut

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) unveiled a new and improved website in September, offering the National Institutes of Health staff, researchers, and the general public more online information and resources in an easier-to-use format.

The website redesign features an improved look, better navigation, and more user-friendly functions. Users who visit *www.niddk.nih.gov* will now enjoy

- new “Scientific Areas” sections that enable researchers to easily find funding areas and opportunities in their field of interest with up-to-the-minute information about
 - special NIDDK initiatives
 - upcoming conferences
 - research resources
 - NIDDK staff contacts
- easier navigation for finding information about the kinds of science the NIDDK funds and instructions necessary for completing the grant application process
- a redesigned health education section for the public with basic information on diseases, along with statistics, links to additional resources, Spanish translations, and lists of available NIDDK publications

Many website improvements also occurred behind the scenes. “The new website now has a database-driven content management system, giving us much better tools to maintain it as a truly living document,” said Maren Laughlin, Ph.D., senior adviser for integrative metabolism at the NIDDK. “The new, improved site structure should allow website visitors to more easily see all that is available to them.” Laughlin served on the NIDDK 18-member content committee, one of two committees set up to rework the website’s extramural sections.

More To Come

The recent facelift is only phase one of a three-part plan to revamp the entire NIDDK website. While the first phase focused on site architecture and updated content, phases two and three will put design and color to work to give the home page and other parts of the site a fresh look.

Final improvements include the addition of multimedia content and more database tools, such as an automated event calendar and an organizational chart to make finding staff contact information easier. Professional and NIDDK web staff also will have new, interactive, electronic tools to help update and maintain the website.

A user survey—the American Consumer Satisfaction Index—reported an 82 percent overall satisfaction rate with the health information sections of the NIDDK website for November 2005 through January 2006.

That score is among the highest achieved by all participants in the survey, which is administered jointly by ForeSee Results and the University of Michigan. The NIDDK redesigned the health information sections 3 years ago and set the standard for this effort.

“Our website is truly the public face of the NIDDK,” said NIDDK Acting Director Griffin P. Rodgers, M.D. “It facilitates the conversation that takes place among biomedical researchers at our universities and small businesses, the American public, and the Institute. With this new website, we hope to invite greater participation and better serve our mission of improved health for the American people.” ■

“Our website is truly the public face of the NIDDK.”

Griffin P. Rodgers, M.D.
Acting Director, NIDDK



NIDDK Website Offers New Resources

Interactive Health Education Tools and Image Library Now Live

Would you like to watch a video of a live donor kidney transplant on your computer? Or maybe you're interested in taking an interactive, online tutorial about kidney stones.

With a new, interactive section of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) website, you can do those things and much more.

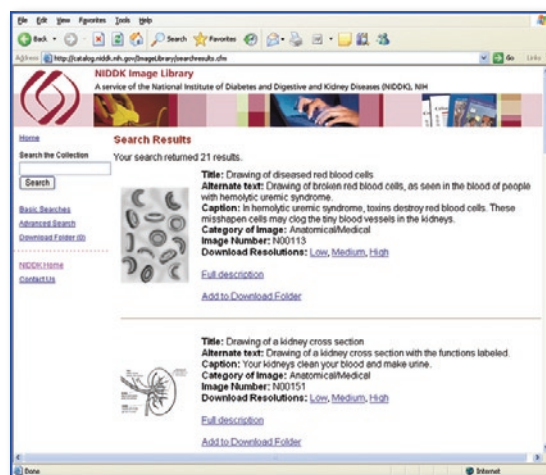
- Test your health knowledge with online quizzes.
- Download digital recordings of radio broadcasts from the National Institutes of Health (NIH).
- Listen to audio files from NIH Research Radio.
- Monitor your health using online diet and exercise tools.

These tools and resources from the NIH and the National Library of Medicine about kidney and urologic diseases are compiled into one section of the NIDDK website for ease in finding and accessing all that is available. They are available at www.kidney.niddk.nih.gov/resources/HealthTools.

Interactive tools are also available for diabetes and digestive diseases at www.diabetes.niddk.nih.gov/resources/HealthTools and www.digestive.niddk.nih.gov/resources/HealthTools, respectively.

Image Library Live

Another new section of the NIDDK website is the Image Library, an online, searchable database of original full-color and black-and-white illustrations produced by the National Kidney and Urologic Diseases Information Clearinghouse and other NIDDK information clearinghouses. The library organizes the drawings into instructional, anatomical/medical, and lifestyle/activity categories. These illustrations are available copyright-free to the public at no cost, although the NIDDK should be credited as the source of each downloaded illustration. The illustrations, which you can find at www.catalog.niddk.nih.gov/ImageLibrary, come in high, medium, and low resolution. ■



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NKDEP PRIORITIES, from page 3

Collaborating Partners

Representatives of several external organizations identified opportunities to collaborate with the NKDEP, such as

- developing joint publications and educational tools for health professionals
- publishing NKDEP guest articles in the organizations' magazines and newsletters
- having the NKDEP give presentations at meetings and conferences
- promoting dietary interventions through NKDEP materials
- sharing information and website links
- extending messages and materials about CKD to pediatric populations

The group expressed interest in learning about the NIDDK's childhood obesity programs at the next NKDEP meeting. ■

Updated NIDDK Publications

Kidney Failure: Choosing a Treatment That's Right for You

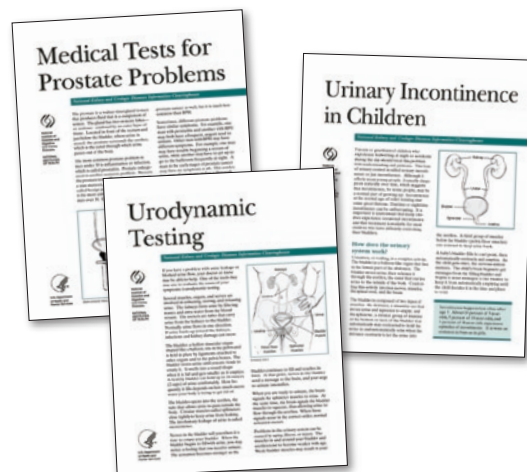
This booklet looks at three treatment options for people who develop kidney failure: hemodialysis, peritoneal dialysis, and kidney transplantation. It also explains the pros and cons of these treatments and the consequences of refusing or withdrawing from treatment.

Imaging of the Urinary Tract

This fact sheet explains imaging of the urinary tract, why it is done, the different available imaging techniques, how to prepare for the test, and what to expect during and after the test.

Medical Tests for Prostate Problems

Digital rectal examinations, prostate-specific antigen blood testing, urinalysis, and ultrasound are some of the medical tests doctors use to diagnose prostate problems. This fact sheet explains the tests and how to prepare for them and includes questions to discuss with health care providers.



To order, please call 1-800-891-5390
or visit www.kidney.niddk.nih.gov.



Peritoneal Dialysis Dose and Adequacy

Peritoneal dialysis removes wastes from the blood when the kidneys can't do the job. This fact sheet describes the two types of peritoneal dialysis—continuous ambulatory peritoneal dialysis and continuous cycler-assisted peritoneal dialysis—and how they work to help the body remove wastes.

Urinary Incontinence in Children

Many children experience occasional incontinence, and urinary incontinence in young people usually disappears over time. This resource explains how the urinary system works, the causes of daytime and nighttime incontinence, and available treatments.

Urodynamic Testing

Urodynamics is a study that assesses how the bladder and urethra are performing their job of storing and releasing urine. Urodynamic tests help your doctor or nurse see how well your bladder and sphincter muscles work and can help explain symptoms such as incontinence, frequent or painful urination, or recurrent urinary tract infections. This publication explains the testing process from pretest preparation through follow-up.

UPDATED NIDDK PUBLICATIONS, from page 6

Urinary Incontinence in Women

Millions of women have urinary incontinence, or loss of bladder control. Women experience urinary incontinence twice as often as men due to pregnancy and childbirth, menopause, and the structure of the female urinary tract. Both women and men can become incontinent from neurologic injury, birth defects, strokes, multiple sclerosis, and physical problems associated with aging. While older women experience incontinence more often than younger



women, it is not inevitable with age—incontinence is treatable and often curable at all ages. This fact sheet explains the different kinds of incontinence and how they are evaluated and treated. It also includes resources for finding more information.

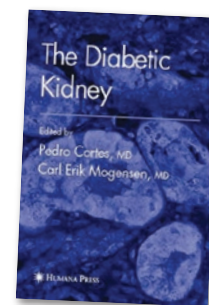
Eat Right to Feel Right on Hemodialysis

This publication, part of the NIDDK's *Kidney Failure Series*, helps people on dialysis work with their dietitians to choose the right foods for optimal health. It covers things to know about calories, diet supplements, fluids, phosphorus, potassium, and protein, and includes a list of cookbooks and other resources for more information. ■

Featured in the NIDDK Reference Collection

Anemia and Diabetic Nephropathy

The prevalence of anemia in people with diabetes is twice that seen in people with nondiabetic renal disease and similar kidney function. This chapter on anemia and diabetic nephropathy is from a clinical textbook, *The Diabetic Kidney*. The authors address the epidemiology and possible mechanisms associated with anemia in the setting of diabetic nephropathy. They describe the prevalence of anemia in three Australian clinics and compare this with large, community-based studies of anemia, including the Third National Health and Nutrition Examination Survey (NHANES III). The role of functional erythropoietin deficiency is also discussed.



In the second part of the chapter, the authors consider anemia associated with advanced diabetic nephropathy, including the emerging concept that anemia is not only a product of the renal impairment process but also a contributor to congestive heart failure development and increased cardiovascular mortality associated with end-stage renal disease in people with diabetes.

The final section examines the potential role of iron and erythropoietin in treating anemia in patients with diabetes and the difficulties in interpreting the cardiovascular and renal outcomes of intervention studies. The chapter begins with a topics outline and ends with an extensive list of 76 references.

This book is available for \$175 from Humana Press, www.humanapress.com, at 999 Riverview Drive, Suite 208, Totowa, NJ 07512, or humana@humanapr.com. Visit the Reference Collection at www.catalog.niddk.nih.gov/resources to find more resources on kidney disease. ■

Controlling Phosphorus: More Than a Game for Dialysis Users

People receiving dialysis at the DaVita Dialysis Clinic in Vienna, VA, are taking to the “high seas” to control their serum phosphorus levels.

To motivate people on dialysis to pay attention to this important health issue, the clinic launched “Phosphorus of the Seas,” a game that takes patients on a virtual “cruise” from San Francisco, around the tip of South America, to Miami.

“We’re using this game as motivation because high phosphorus is so bad for [patients’] bones,” said Tracey Wyatt, a renal dietitian at the clinic.

Participants are grouped into teams of seven to 10 people, with a nurse serving as ship “captain” on each of the 10 teams. Each team’s ship, which has a unique name, is posted on a bulletin board with a big map of North and South America in the middle, according to Wyatt. Teams earn or lose points based on their average phosphorus levels.

For example, a team with an average phosphorus level of 5.5 or below will earn 10,000 nautical miles. If the team’s monthly average exceeds recommended amounts due to excess fluid accumulation between dialysis treatments, team members will lose 1,000 miles.

“We’re using this game as motivation because high phosphorus is so bad for [patients’] bones.”

Tracey Wyatt
DaVita Dialysis Clinic
renal dietitian



Each team’s ship, which has a unique name, is posted on a bulletin board with maps of North and South America. Teams earn or lose points based on their average phosphorus levels.

Earning Prizes

Many of the players are enthusiastic about the game, which runs 3 months, said Wyatt. The winning team will receive prizes such as cookbooks, T-shirts, or picture frames.

Wyatt said the idea for the game came from a book called *The Handbook of Creative Approaches to Patient Compliance: A Guide to Assist Renal Dietitians Working With Dialysis Patients*.

Wyatt exchanges ideas for improving patient health with a dietitian from another clinic. “Once the game ends, we move on and find something else to motivate them,” said Wyatt. “We’re constantly brainstorming ideas for long-term motivators.” ■