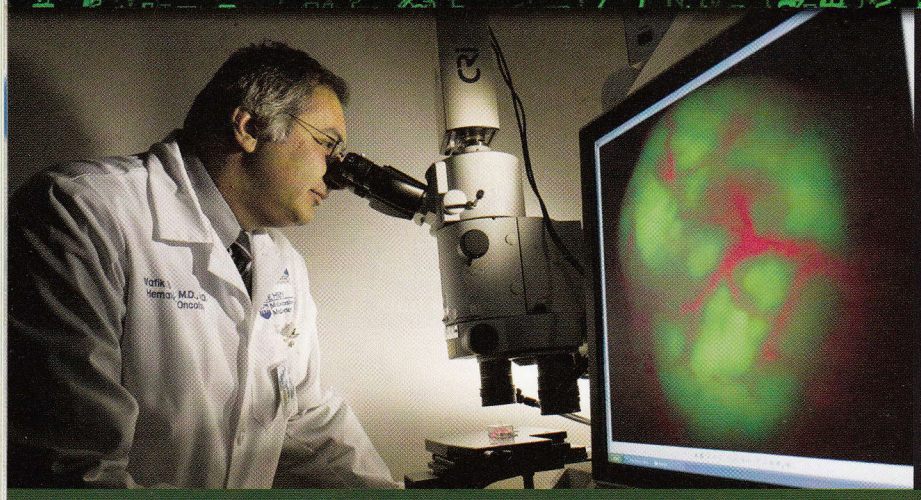
Unlocking genes, unlocking savings

GENETIC TESTING WILL GROW AS A WAY TO AVOID WASTED MEDICAL EFFORTS, RESEARCHERS SAY

BY BRENT BURKEY

The health care industry is on the cusp of using genetic information in ways that will save the cost of performing procedures and treatments that end up having little chance of success, according to midstate medical researchers.

The techniques today are most prevalent in cancer treatment, but will have more uses across a broader spectrum of diseases. They can even help determine what dose of a drug to give a patient, said officials with Derry Township-based Penn State Milton S. Hershey Medical Center and affiliated College of Medicine.



PHOTOS/SUBMITTED

Dr. Wafik El-Deiry of Penn State Milton S. Hershey Medical Center and affiliated College of Medicine is chief of oncology and hemotology at the Dauphin County-based medical center. The center is researching ways to collect genetic information from cancer cells to help determine targeted treatments.

AmeriHealth MERCY

A Program of AmeriHealth First and Mercy Health Plan

The Medicaid Health Plan that Cares



www.ameriheathMERCYhp.com

HEALTH CARE

PICK AND CHOOSE YOUR ENEWS.

INDUSTRY-SPECIFIC eNEWSLETTERS DELIVERED RIGHT TO YOUR INBOX

SIGN UP FOR YOUR FREE eNEWSLETTER TODAY!
CENTRALPENNBUSINESS.COM

CENTRAL PENN BUSINESS JOURNAL

One of the most straightforward applications is determining whether someone is a carrier of an inherited gene that would mean a 100 percent chance of getting cancer, said Dr. Wafik El-Deiry, a professor with the college and chief of hematology and oncology at the medical center.

Modern medicine has been able to get glimpses of genetic codes and related proteins for years, but translating exactly what it all means is a more recent phenomenon, he said.

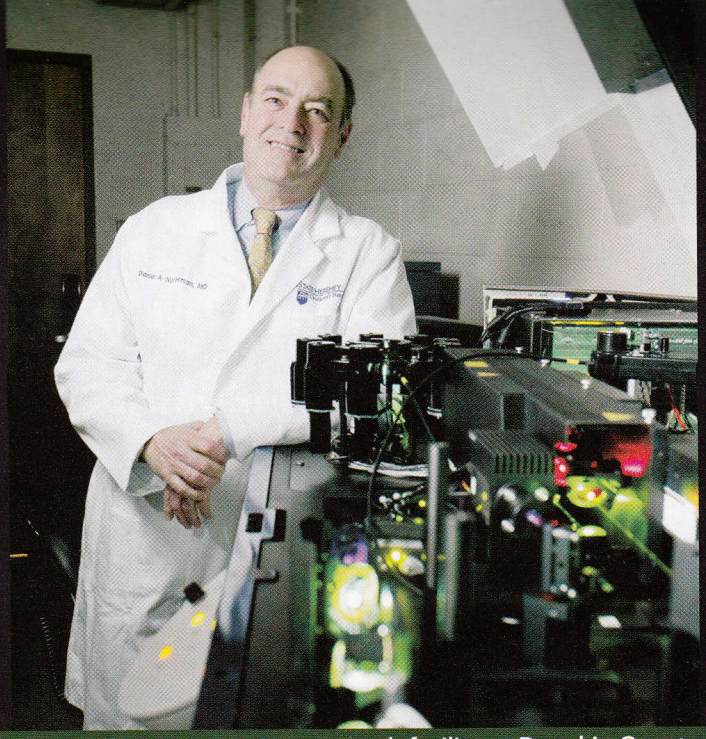
Previously, a person with a family history of breast cancer would have to decide whether to have major surgery or other proactive measures to prevent the disease from occurring, for example, El-Deiry said.

It could have been a 50-50 guess at best, he said, and the expensive and invasive surgery might have been performed for no reason.

"Now you can know. It is either zero or 100 percent," El-Deiry said. "It has tremendous potential to be a cost saver."

Reading the treatment information in genes is not confined to the normal human DNA sequence, he said. For example, a certain type of lung cancer is almost totally resistant to a pill

CONTINUED ON PAGE 30



Dr. Daniel Notterman, in a research facility at Dauphin County-based Penn State College of Medicine, is vice dean for research at the college, a practicing pediatrician and molecular biologist. He has participated in research using genetic information to determine the chances a woman will develop post-partum depression and therefore help target care.

Adnan Ahmad, DO

F. Wilson Jackson, MD

Paul G. Lacey, MD

John J. Michel, DO

David S. Mize, MD

Steven P. Siegelbaum, MD

Mohammad Taheri, MD

Deborah B. Matisse, CRNP

Tina M. Navitsky, CRNP

Lisa K. Stokes, CRNP

JACKSON | SIEGELBAUM
Gastroenterology

2626 N. 3rd Street, Suite 3A, Harrisburg, PA 17110
P: 717.238.3111 F: 717.238.1896
423 N. 21st Street, Suite 100, Camp Hill, PA 17011
P: 717-761.0930 F: 717.761.0465

www.gicare.com

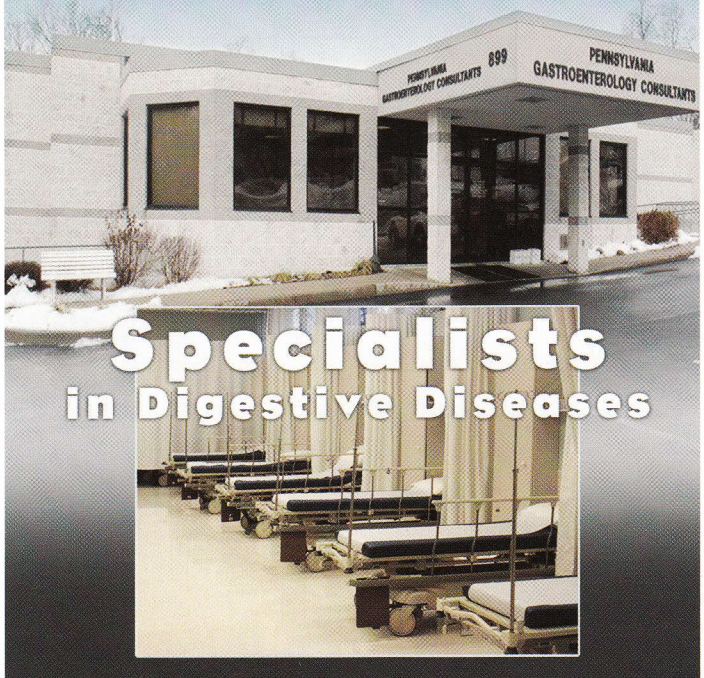


Specialists in the health and diseases of the digestive system. We put our patients first, provide physical and emotional comfort while striving for the highest care possible.

Make Your Choice
CPRS
WWW.CPRSWEB.COM
Physical Therapy
Hands that heal. Hearts that care.
Physical Therapy | Sports Rehabilitation | Wellness | Occupational Health
Now with 26 Locations throughout Central PA
New Patients Welcome!
No referral required through our
Direct Access Program!
Call Now to Schedule: 1-866-279-6999

PENNSYLVANIA GASTROENTEROLOGY CONSULTANTS

Karen K. Kormis, M.D., F.A.C.P.
Louis P. Leite, D.O., F.A.C.P.
David J. Peters, D.O., F.A.C.P.
Christopher B. Furlong, M.D.
Mohan S. Charan, M.D.
Mohan R. Rengen, D.O.



Specialists
in Digestive Diseases

• Colonoscopy • Polypectomy •
• Esophageal Dilation • Flexible Sigmoidoscopy •
• Endoscopy (EGD) •

899 Poplar Church Road, Camp Hill, Pennsylvania 17011
(717) 763-0430
www.pagiconsultants.com

Unlocking genes, unlocking savings

CONTINUED FROM PAGE 19

medication commonly used to treat the disease, he said.

Collecting cancer cells and reading their genetic information can help a doctor avoid prescribing the treatment and move quickly to something that will have a better chance of working, El-Deiry said.

Research at the center is focused on collecting those cancer cells from blood tests instead of more invasive means, including surgery and biopsies, he said.

"It is not just about saving money. It is about saving time for those patients," El-Deiry said.

The proliferation of such screening also will likely lower the cost of testing to unlock a host of information that can help medical professionals be more efficient and cost effective, El-Deiry said.

Testing tumor cells for specific abnormalities to help determine treatment for certain cancers has become standard medicine at Lancaster County-based Lancaster General Health, said Dr. Randall A. Oyer, medical director of cancer programs.


OYER

The health system has used genetic screening to help determine colon cancer treatment for about three years and to help determine lung cancer treatments for about a year, Oyer said.

Once cancer cells are biopsied, laboratory technicians look for a couple of specific genetic abnormalities and then select the treatments known to work under those circumstances.

Some abnormalities mean a certain treatment will have a 70 percent success rate; if the abnormality is not present, there is little chance the same treatment would be effective, Oyer said.

There is a cost associated with the genetic testing, but it is small compared with the price of going down a path of expensive procedures that prove useless. Often, insurance explicitly covers the genetic testing; if not specified, the health system rolls it into the general diagnostic charge, Oyer said.

There is a cost associated with the genetic testing, but it is small compared with the price of going down a path of expensive procedures that prove useless.

Using genetic information in noncancer applications took a big leap forward in February 2010 when the federal Food and Drug Administration changed the label of the blood-thinning drug Coumadin, said Dr. Daniel Notterman, vice dean for research at the Penn State College of Medicine, a practicing pediatrician and a molecular biologist.

The change added a dosage range and guidelines based on the results of genetic tests on a patient, Notterman said. It won't be long before practitioners at all levels will need to apply genetic information to their treatments to keep up with best practices, he said.

It can help improve safety — for instance, Coumadin is a "fairly risky" drug because it can cause bleeding problems — as well as lower costs associated with medication wasted as doctors adjust doses, Notterman said.

Notterman came to his current position from Princeton University, where he participated in gene-related research on women to help predict post-partum depression.

Testing a woman for a specific gene found to be a marker indicates the chances a woman will develop the condition. It can save costs by targeting those most susceptible with outreach efforts, Notterman said.

"It is getting closer to a standard of care," he said, "and people are going to be expected to do this," he said.