Dear Friends,

PinnacleHealth’s new president and CEO, I am honored to introduce this edition of Peak of Health magazine.

As you’ll discover on these pages—the littlest things can have a big impact. While invisible to the naked eye, genetic mutations and radon gas pose health risks you should know about. But on a positive note, tiny instruments and incisions used in robot-assisted surgeries lower infection risks and shorten recovery times. And, very small devices like BioZorb are improving radiation targeting and surgery outcomes for breast cancer patients.

Our magazine is just one way we work to stay connected with you and support your good health. We appreciate the chance to share exciting developments with you, and always encourage you to explore our website and reach out to us for more information.

Yours in good health,

PHIL GUARNESCHELLI
President & CEO, PinnacleHealth

Health Abroad

Starts at Home

Travelers face unique health challenges, including infectious diseases that may be caught from:

- Food or water that’s contaminated
- Insect bites
- People who are infected
- Bacteria and other microorganisms

PinnacleHealth’s Infectious Disease and Travel Clinic helps travelers prepare for trips overseas and improve their odds of staying well away from home. Vaccines are available for:

- Yellow fever
- Typhoid
- Tetanus
- Polio
- Meningitis
- Hepatitis A & B
- Japanese encephalitis

For more information, call the Infectious Disease and Travel Clinic at (717) 614-4420 or visit pinnaclehealth.org and search for “infectious disease.”

Peak of Health is published four times each year by PinnacleHealth. The publication highlights the latest in disease prevention, technological innovation and overall treatment for the health of our community.

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BUSINESS HOURS
Monday–Friday
8:30 a.m. to 5 p.m.
Ask women what type of cancer poses the greatest threat to their health, and they’ll likely answer “breast cancer.” But the No. 1 cause of cancer-related deaths in women is lung cancer.

Over the past 37 years, the number of women with lung cancer has risen 98 percent while rates have declined in men, according to the American Lung Association. Investigations into the reasons why are ongoing.

Exploring Lung Cancer Contributors

The greatest risk factor for lung cancer in men and women is smoking—the habit is the cause of 80 to 90 percent of lung cancers, according to the Centers for Disease Control and Prevention. People with a family history of the disease also have an increased risk, as do those who have been exposed to chemicals like radon, a particular concern in some central Pennsylvania homes.

The biology of lung cancer is different in women, and additional research is needed.

“What we do know is that women tend to develop lung cancer earlier and don’t need to have smoked for as long as men to develop cancer,” says Troy Moritz, DO, FACOS, thoracic surgeon, PinnacleHealth Cardiovascular & Thoracic Surgery, and director of the Pulmonary Nodule Clinic and lung cancer screening programs. “Women are more likely than men to develop adenocarcinoma, whether they are non-smokers or smokers.”

The best way for men and women to prevent lung cancer is to quit smoking. Testing your home for radon is also important. If you use hormone replacement therapy or have a family history of lung cancer, talk with your physician about screening and other ways you can better manage your risk.

For more information about the PinnacleHealth Cancer Institute and lung cancer treatment, visit pinnaclehealth.org/cancer.
A walnut-sized gland located in front of the rectum and below the bladder, the prostate can harbor a silent, symptom-free cancer.

**DIFFICULT OR FREQUENT URINATION**—which are both common side effects of aging and possible indications of prostate cancer—may complicate the process of diagnosing this disease.

Talk with your family physician about whether you could benefit from a blood test that checks for high levels of prostate-specific antigen (PSA) which can help detect prostate cancer. If your father, brother, uncle or grandfather have been diagnosed with prostate cancer, make sure your physician knows.

**TO TEST OR NOT TO TEST**

The question of whether or not to test for PSA has sparked controversy in recent years, as national organizations have provided conflicting recommendations about how and who to screen, and even how often or how early.

Many prostate cancers grow slowly and may never cause symptoms or threaten a patient’s health. In these cases, over-screening can lead to over-treatment. On the other hand, a significant number of patients have very aggressive disease that may rapidly spread outside the prostate to nearby organs, lymph nodes and beyond, and early detection with screening is important.

There is no clear-cut answer about screening, but in recent years, the pendulum may have swung from over-screening to under-screening, leading men to appear with far more advanced cancers.

Complicating the matter is the fact that screening isn’t a perfect tool. PSA can become elevated for reasons other than cancer, so a rising PSA may lead to an unnecessary biopsy, where a sample is taken under local anesthesia and checked under a microscope. In rare cases, a biopsy can cause bleeding and infection, so finding a balance between under- and over-testing is key.

**DECODING YOUR NUMBERS**

A PSA of 4 is generally considered the normal limit, but even that number is not absolute. No test is absolutely perfect, and every test is capable of producing both false positives and false negatives. However, it is very rare for a man to have prostate cancer with a normal PSA.

When cancer is discovered, the type of tumor discovered helps guide treatment. Some men with low-risk prostate cancer may opt for active surveillance. In this case, physicians track PSA levels and examine the patient once or twice a year. They may biopsy the site if PSA climbs or there are other signs of advancing disease.

Most men with prostate cancer have an excellent prognosis, and often have many treatment options. A thorough understanding of the available options is important for patients to make an informed decision about their treatment. If you have been diagnosed with prostate cancer, it’s very important to speak with your physicians about your options to understand which one might be the best fit for you.
If intervention is necessary, generally, the treatment options are surgery or radiation—cure rates are the same no matter what road a patient takes, but the side effects and risks are slightly different.

Hormone deprivation therapy may also be used, as prostate cancer cells are fueled by testosterone. Traditional chemotherapy, however, is usually not the first line of defense, unless the cancer has spread to other organs.

For more information about prostate cancer prevention and treatment options, visit pinnaclehealth.org/prostate.

**Course of Treatment: Prostate Cancer**

<table>
<thead>
<tr>
<th>Treatment type</th>
<th>Average duration of treatments*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard radiation treatment</td>
<td>~8 weeks, ~15 minute sessions</td>
</tr>
<tr>
<td>Hypofractionation (higher daily dose)</td>
<td>~4-6 weeks, ~15 minute sessions</td>
</tr>
<tr>
<td>Stereotactic body radiation therapy (SBRT)</td>
<td>~5 appointments over 2 weeks</td>
</tr>
</tbody>
</table>

*These are typical averages according to the National Comprehensive Cancer Network (NCCN). Individual courses of treatment may differ.

**CyberKnife Radiosurgery at PinnacleHealth**

For the right patient, CyberKnife stereotactic body radiation therapy (SBRT) is an effective, convenient and well-tolerated treatment option for prostate cancer. Prior to CyberKnife treatment, advanced imaging including MRI and CT scans are used to map out therapy.

**The CyberKnife SBRT platform at PinnacleHealth:**
- Delivers SBRT to patients with prostate cancer
- Focuses radiation beams precisely on the tumor
- Uses pre-placed markers to track movement and small changes in the location of the prostate during treatment
- Allows physicians to safely deliver high doses of daily radiation
- Minimizes radiation exposure for nearby normal tissues

**Understanding SBRT**

**Common short-term side effects include:**
- Fatigue
- Temporarily needing to urinate more frequently
- A burning sensation or difficulty when urinating

Long-term risks and serious complications are rare. Throughout the course of treatment, men generally do very well and keep their daily routines.
A new device helps breast surgeons at the PinnacleHealth Breast Care Center mark the location of cancer more accurately in order to precisely target radiation which improves patient outcomes.

LAST YEAR, PinnacleHealth providers were the first in central Pennsylvania to adopt a new device called BioZorb that marks the location of cancer for more precise radiation treatment after breast cancer surgery. This small device is placed in the breast at the same time cancer is removed.

"BioZorb is a spiral made mostly of material that will eventually disappear within the body—similar to dissolvable stitches," says Lisa Torp, MD, FACS, medical director of PinnacleHealth Breast Care Center. "Several tiny titanium clips remain in the body, marking the exact location of the previous cancer site."

THE POWER OF PRECISION

Radiation therapy works by damaging the DNA of cells so they can’t reproduce. Patients experience the best possible outcomes from this treatment when potentially cancerous areas are closely targeted, radiation is focused on trouble spots and healthy surrounding tissue is spared. The titanium clips from the BioZorb marker make this process more efficient and accurate.

"Making the target area easier to locate also allows us to decrease the overall radiation dose," Dr. Torp says. "That means patients may require fewer treatments to get the same results."

Using markers like this has other benefits as well. For example, the BioZorb delivers better cosmetic outcomes after breast-conserving lumpectomy surgery by providing a supportive matrix for healing tissue.

The BioZorb device is primarily offered to patients who are having breast-preserving surgery and will need radiation therapy. The Breast Care Center has already implanted more than 150 of the markers, making it the center with the fifth highest volume in the country.

"I’m grateful to be part of an organization that’s as forward thinking as PinnacleHealth," Dr. Torp says. "This mindset allows us to bring the latest technology to the patients in our community."

For more information about breast cancer care at PinnacleHealth, visit pinnaclehealth.org/phbcc.
Tiny Instruments, BIG IMPACT

The experienced surgical team at PinnacleHealth uses robotic technology to focus on your safety and recovery.

**USING A MINIMALLY INVASIVE** robot-assisted approach to surgery improves patients’ experiences and outcomes. As a pioneer of robotic surgery in central Pennsylvania, the PinnacleHealth surgical team embraces this approach whenever possible.

“We’ve been using robots to assist in surgery for more than 10 years—it’s part of our identity,” says John F. Lazar, MD, thoracic surgeon and medical director of the Robotics Institute at PinnacleHealth. “We were one of the first hospitals in the area to implement this approach in gynecologic, urologic and cardiac procedures.”

**HOW ROBOTICS HELP**

“Robotics allow the surgeon to have 360 degrees of freedom when working on the patient—it’s almost like having the surgeon’s hands inside the patient, allowing them to reach small, difficult-to-reach places, while giving them much better visualization,” Dr. Lazar says. “Patients feel the benefits, too. Minimally invasive procedures allow them to return home sooner. They experience less pain and return to their lives sooner.”

Smaller incisions and the need for fewer narcotics allow patients to wean off pain medication more quickly, giving the hospital yet another tool to combat the serious concern of opioid dependence. The smaller incisions created by the minimally invasive approach also reduce patients’ risk of infection after procedures.

“We care deeply about our patients, and safety is one of our top concerns from beginning to end,” Dr. Lazar says. “Our team provides hands-on patient care throughout the entire process, from planning the robot-assisted procedure to answering questions at follow-up appointments months or years down the road. We’re fortunate to have an experienced team who knows how to best care for those who undergo robot-assisted surgery.”

To learn more about robot-assisted surgery at PinnacleHealth, visit us online at pinnaclehealth.org/roboticsurgery.

**SURGICAL SPECIFICS**

Physicians perform approximately 40 different procedures at PinnacleHealth with robotic assistance, including:

- Cardiac surgery
- Gastric/colorectal surgery
- General surgery (hernias, gallbladder, liver and pancreas)
- Gynecologic surgery (benign and malignant)
- Head and neck (ENT) surgery
- Thoracic surgery (lung, esophagus and mediastinum)
- Urological surgery (prostate, kidney and bladder)

“This is who we are, and what we do every day,” says John F. Lazar, MD, thoracic surgeon and medical director of the Robotics Institute. “We’re lucky to have skilled surgeons in so many fields taking care of our patients.”
The fight against cancer is never easy, but we’re ready with advanced technology like CyberKnife®, which tracks tumor motion to precisely target brain, lung and prostate tumors. This non-surgical radiation treatment reduces the number of office visits for our patients and eliminates the need for a hospital stay.

TOUGH ON CANCER. STRONG FOR YOU.

David C. Weksberg, MD, PhD
Co-Director of Radiation Oncology

(717) 657-7500 | pinnaclehealth.org/cancer