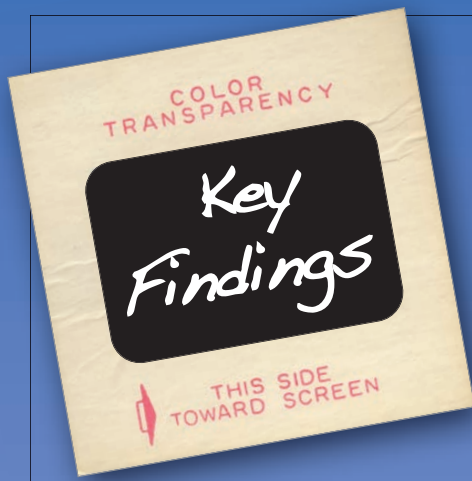


# When I'm 64

*How Boomers Will Change Health Care*





The wave of aging Baby Boomers will reshape the health care system forever. There will be more people enjoying their later years, but they'll be managing more chronic conditions and therefore utilizing more health care services. By 2030:

- The over 65 population will nearly double as a result of the aging Boomers.
- More than six of every 10 Boomers will be managing more than one chronic condition.
- More than one out of every three Boomers – over 21 million – will be considered obese.
- One of every four Boomers – 14 million – will be living with diabetes.
- Nearly one out of every two Boomers – more than 26 million – will be living with arthritis.
- Eight times more knee replacements will be performed than today.

Meeting these future health care challenges will require more resources, new approaches to care delivery and a greater focus on wellness and prevention.

**Acknowledgements** FCG would like to thank the following individuals for their contributions to this report:

- Richard Afable, M.D., M.P.H., President and Chief Executive Officer, Hoag Memorial Hospital Presbyterian
- Beth Averbeck, MD, Associate Medical Director for Care Improvement, Health Partners; and Kenneth Holmen, M.D., Vice President for Medical Affairs, Regions Hospital, and Vice President for Physician Strategies, Health Partners
- Ron Dziedzicki, R.N., Senior Vice President and General Manager of Operations, University Hospitals
- Art Nichols, President/Chief Executive Officer; John Schlegelmilch, M.D., Medical Director; and Don Caruso, M.D., Associate Medical Director, Cheshire Medical Center / Dartmouth-Hitchcock Keene

FCG also gratefully acknowledges the significant insight and support received from Molly Coye, M.D., M.P.H., Chief Executive Officer, and Steven DeMello, Director of Research and Forecasting at HealthTech; and Anjali Joseph, PhD., Director of Research, and Laura Ellington, Director of Project Development at the Center for Health Design.

# When I'm 64

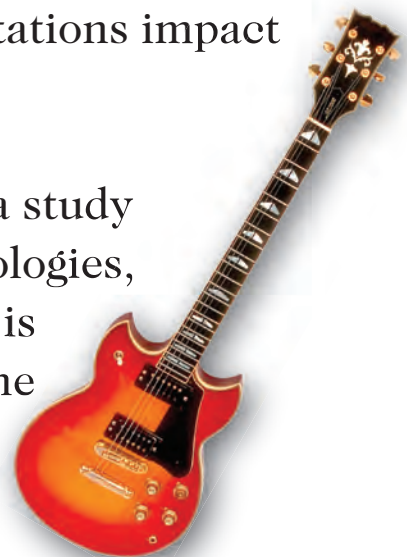
*How Boomers Will Change Health Care*



They grew up on the Beatles and Elvis, drove the first Ford Mustangs and made political and social protests the norm. Born between 1946 and 1964, the 78 million U.S. “Baby Boomers” drive the labor and housing markets, influence cultural trends and introduce lifestyle changes that have lasting impact. Every day, almost 11,000 Boomers turn 50 – that’s one every eight seconds<sup>1</sup>. The first of them will turn 64 in 2010, while the last will not reach this milestone for 21 years. Thanks to many medical advances over their lifetime – from polio and measles vaccines to radical heart surgeries – more Boomers are living longer.

As this dynamic population ages, how will Baby Boomers’ demographic makeup, health status and expectations impact America’s health care system?

By combining new research and analysis with a study of emerging health care approaches and technologies, this report illustrates how the health care field is anticipating the Boomer revolution, and how the Boomers will leave their mark on American health care for generations to come.



# Part 1:

## When I'm 64...

The convergence of four key factors drives how Boomers will impact U.S. health care:

1. There are significantly more of them and, as they age, they will require more health care services than any other generation of Americans.
2. The prevalence of chronic diseases is increasing among Boomers.
3. They have different needs and expectations than past generations.
4. More medical services and technologies are available to them than ever before.

### As Boomers Grow in Numbers, Health Care Needs Will Increase

**T**he Baby Boomers make up a significant portion of the U.S. population, and, as the Boomers age, the percentage of Americans over 65 – those that utilize the bulk of health care resources – will shift significantly.

When the last of the Boomers reach retirement age, almost 20 percent of the U.S. population will be 65 or older compared to less than 13 percent today.<sup>2</sup> By 2030, there will be more than 70 million Americans over age 65.<sup>3</sup>

The dramatic increase in births between 1946 and 1964, dubbed the “baby boom,” drove many

public services – particularly schools – to add capacity that wasn’t needed in the years immediately following. However, for health care, the situation is different. While this population will create a notable rise in demand for services, the demand will continue rather than drop off because *everyone* – including Boomers and the members of Generations X and Y that follow – is living longer and with more chronic disease.

At the turn of the 20th century, just before Boomers’ parents were born, U.S. life expectancy was 47 years of age. In 2002 (the last year for which data are available), it was 77 – an additional 30 years of life.<sup>4</sup> Half of all the people who have ever lived to age 65 are alive today.<sup>5</sup>

### Aging of the Boomers

2000	2010	2020	2030
Age 36-54	Age 46-64	Age 56-74	Age 66-84
78 Million	75 Million	70 Million	58 Million

People are living longer because of both lifestyle changes and advances in health care. For example, fewer people smoke today than in the past. In the 1950's more than half of men and a third of women smoked cigarettes. By 2005, those numbers were down to 23 percent of men and 19 percent of women.<sup>6</sup> Thanks to major advances in medicine, fewer people die at an early age from heart disease and cancer. For example, the five-year cancer survival rate improved from 50 percent in the mid '70s (1975-1977) to 66 percent at the turn of the 21st century (1996-2002).<sup>7</sup>

*Health Care Implication: With increased longevity, Boomers will reach retirement age, have more years to enjoy it and, in turn, more years in need of health care services.*



**When the last of the Boomers reach retirement age, almost 20 percent of the U.S. population will be 65 or older compared to less than 13 percent today.**

### **The Prevalence of Chronic Conditions is Growing among Boomers**

**S**ixty-two percent of 50-to-64 year olds reported they had at least one of six chronic conditions (hypertension, high cholesterol, arthritis, diabetes, heart disease and cancer).<sup>8</sup> Of Americans 65 and older, 80 percent have at least one chronic disease that requires ongoing care and management.<sup>9</sup>

As Boomers age, the number with multiple chronic conditions is expected to grow from almost 8.6 million today (about one of every 10

Boomers) to almost 37 million in 2030. By 2030, more than six of every 10 Boomers will be managing more than one chronic condition.<sup>10</sup> And Boomers are not alone. The overall incidence of chronic conditions like diabetes and hypertension is growing, and will continue to increase as future generations reach 65. Since the biggest factors influencing medical spending are chronic illness and a patient's level of disability,<sup>11</sup> the growing incidence of multiple chronic conditions will put increasing demands on our health care system.

#### **Diabetes**

The number of Americans with diabetes is expected to rise from 30 million today to 46 million by 2030, when one of every four Boomers – 14 million – will be living with this chronic disease.<sup>12</sup>

*Health Care Implication: These diabetic Boomers will require continuous medical management in both inpatient and outpatient settings.*

#### **Arthritis**

The number of Americans with arthritis is expected to rise from 46 million today to 67 million by 2030. At that point, nearly one out of every two Boomers – or over 26 million – will be living with the condition.<sup>13</sup>

*Health Care Implication: While the health risks of arthritis are not as great as other chronic illnesses, the decreased mobility arthritis can trigger will cause many Boomers to seek new alternative therapies, pain control treatments, exercise regimens and joint replacements.*

#### **Obesity**

The incidence of obesity, a major risk factor for many diseases, also is on the rise and will further challenge the health care system. Obese patients cost Medicare about 34 percent more than those of normal weight.<sup>14</sup> Obesity rates among Boomers will continue to grow over time. By 2030, more than one out of every three Boomers – over 21

million – will be considered obese, and obesity in the overall population will reach over 93 million.

*Health Care Implication: Boomers will require new weight-management techniques to help them manage the chronic health conditions associated with obesity as well as health care settings designed to meet the needs of obese patients.*

**By 2030, more than one out of every three Boomers – over 21 million – will be considered obese.**

**Falls**

Falls are the most common cause of injury to older adults. As Boomers live longer, remain more active and take multiple medications, the probability of trauma caused by falls inside and outside of the home will increase. More than one-third of adults 65 or older fall each year. Of those who fall, 20 to 30 percent suffer moderate to severe injuries (such as hip fractures) that decrease

mobility and independence.<sup>15</sup> Almost 350,000 hip fractures occurred in 2000, a figure that is expected to double by the year 2050.<sup>16</sup>

*Health Care Implication: The increasing incidence of falls means more emergency department (ED) visits and hospitalizations. Preventing and treating falls will become a bigger challenge for health care providers.*

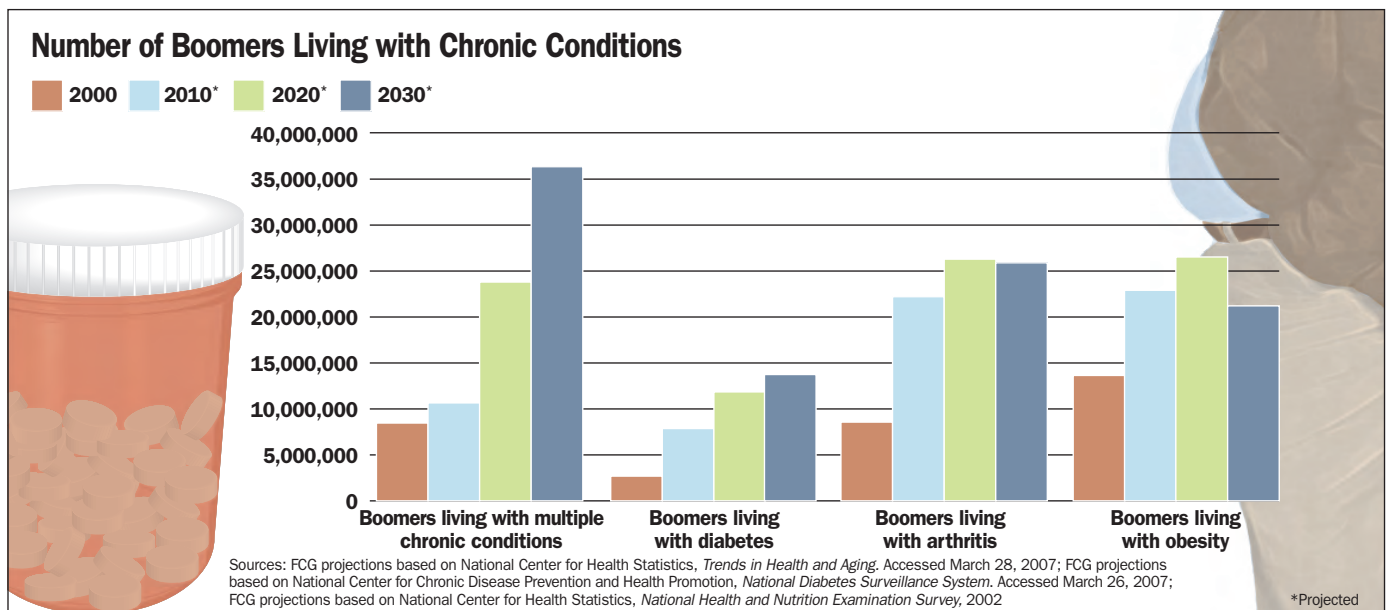
The large number of Boomers with acute and chronic care needs will clearly challenge the nation’s health care system. In general, Boomers between the ages of 54 and 59 report having more chronic health conditions, pain, problems with alcohol and psychiatric problems than their parents reported having when they were the same age.<sup>17</sup> Boomers will require more care, different types of care and better coordination of care.

**No One Size Fits All: Diverse Boomers Demand Different Health Care**

**Diversity**

Boomers are more racially and ethnically diverse than previous generations. Almost 20 percent of today’s Boomers are members of minority

**37 million Boomers will be managing more than one chronic condition.**



groups.<sup>18</sup> That percentage will grow as the population expands to include larger immigrant families and the lifespan gap between minorities and non-Hispanic whites continues to shrink.

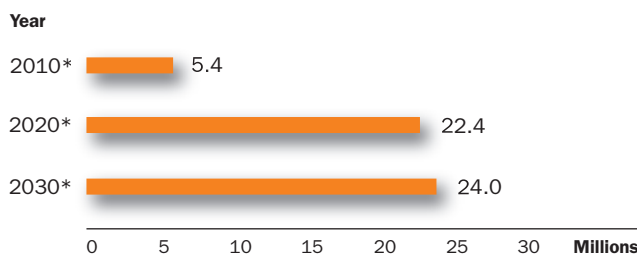
*Health Care Implication: A Boomer population that's more ethnically and racially diverse will require delivery systems and caregivers that are sensitive to cultural differences and how those differences impact care.*

**Education**

Boomers have higher levels of educational attainment than previous generations and, in general, are more engaged in their care. Almost 90 percent of Boomers graduated from high school versus only 68 percent of their parents.<sup>19</sup>

**More Boomers will experience falls as they age...**

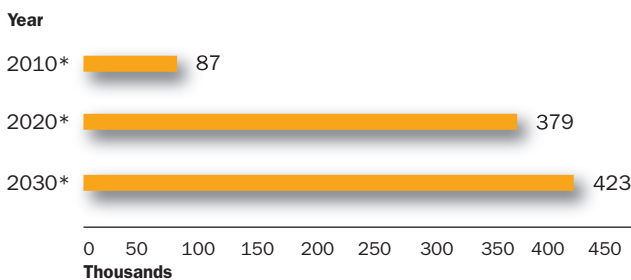
**Projected Number of Nonfatal Falls per Year Among Boomers**



\* Projected.  
Source: FCG projections based on CDC National Center for Injury Prevention and Control, *Web-based Injury Statistics Query and Reporting System (WISQARS)*, 2005

**...contributing to a growing number of hip fractures.**

**Projected Number of Hip Fractures per Year Among Boomers**



\* Projected.  
Source: FCG projections based on National Center for Health Statistics, *National Hospital Discharge Survey (1993-2003)*

While conducting health research online has become a mainstream activity,<sup>20</sup> it is only one indicator of their high level of engagement.

*Health Care Implication: Boomers will likely be more involved in their care and seek health care delivery options that center on their wishes.*

**Money**

Many Boomers will have more disposable income than their parents. They currently possess three-quarters of the nation's financial assets and an estimated \$1 trillion in annual disposable income.<sup>21</sup> Yet many of them worry about their ability to pay for health care during their retirement and still live comfortably. Forty-four percent of older Boomers (ages 55-59) lack the confidence that they will have enough money to live comfortably past age 85.<sup>22</sup>

*Health Care Implication: Aging Boomers will likely purchase health care services judiciously.*

**Geography**

Boomers are likely to change U.S. demographic geography with their retirement choices. The most preferred states for retirees including Boomers are Florida (14 percent), Arizona (12 percent), North Carolina (10 percent), California (8 percent) and Texas (5 percent).<sup>23</sup> By 2020, Florida will replace New York as the third most populous state, while by 2030, Georgia will climb into fifth place – bumping Illinois – and Nevada will jump from 29th to 16th.<sup>24</sup>

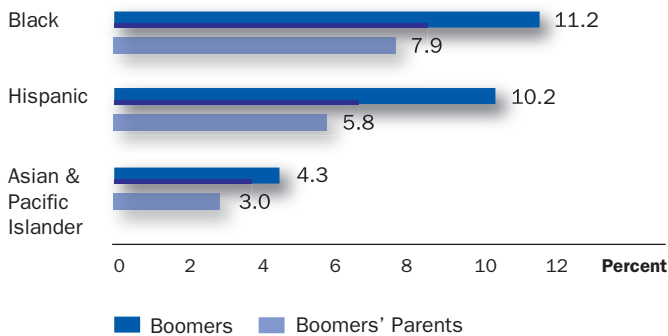
*Health Care Implication: This population shift also will shift demand for health care services.*

**Lifestyle**

Boomers also are more active than previous generations. Health care innovations from joint replacements to new pain medications have helped them live more active lives than their parents did at the same age. These innovations have translated into a decreasing percentage of Americans who are considered chronically

## The Boomer generation is more racially and ethnically diverse.

**Percent of Population by Race and Ethnicity, Boomers Versus Their Parents as they Turn 65<sup>1</sup>**



1 Compares the U.S. Census-projected Boomer demographic in 2010 with the previous generation as they turned 65 in 1990.  
Source: FCG estimates and projections based on U.S. Census Bureau data 2000 and 2004 Update

disabled (from 26.2 percent in 1982 to 19.7 percent in 1999 when the most recent data were available<sup>25</sup>).

*Health Care Implication: As aging Boomers remain active longer, they will seek health care services that emphasize mobility and independence.*

### Complementary Medicine

Seventy percent of Boomers have used some form of complementary or alternative medicine.<sup>26</sup> The most popular treatments include massage therapy, chiropractic services and other types of body treatments; however, more than 10 percent of Boomers and current seniors also have tried mind-body practices such as meditation, hypnosis and acupuncture. Complementary and alternative medicine is being used equally to treat specific health conditions and to improve overall wellness.

*Health Care Implication: Aging Boomers with higher expectations of service will demand more innovative, personalized health care programs that cater to their needs.*

### Palliative and End-of-Life Care

More than 25 percent of total health care spending occurs in the last year of life. Yet that does not necessarily mean that individuals get the end-of-life care they had hoped for. Seventy-five percent of people in the U.S. would like to die at home, yet only 15 percent do. Eighty-one percent do not want to be a burden to their family, yet only 45 percent achieve this objective.<sup>27</sup> Over 70 percent of Boomers have at least one living parent; 25 percent live with an aging parent and 13 million Boomers were already participating in a parent's care in 2005.<sup>28</sup> Forty-six percent of people who have made decisions about a terminally ill loved one have their own end-of-life wishes written down, versus only 24 percent of people who have not had that experience.<sup>29</sup> Boomers will also require palliative care to manage pain, control symptoms, and improve quality of life for as long as life remains.

*Health Care Implication: Boomers who have participated in providing care for a loved one will be more likely to plan for and discuss with their family their wishes for their own end-of-life care. More and more people will be in need of and use palliative care.*

### Advances in Treatments Produce More Options

**T**echnological advances will increase the health care options available to Boomers – both on their own and under the care of a physician – and medical advances will continue emerging at the same rapid pace seen over the last two decades. Boomers will constitute the largest group of patients with chronic conditions, and will benefit from new medicines, advances in monitoring equipment, innovations in surgical techniques and new drug delivery systems. Technology also will make it possible to provide care remotely. Boomers will be able to monitor their own conditions and communicate with their physicians from home.



This will extend the reach of specialty physicians to cover rural areas and the ability of Boomers who live in these regions to receive care in their homes.

Boomers will live through a dramatic rise in the incidence of diabetes. However, there will be a concurrent improvement in the monitoring tools and treatments available to control glucose levels. For example, individuals with diabetes currently control their condition with glucose testing combined with insulin shots or oral medications, yet only 37 percent of patients achieve good control of their blood sugar. Continuous blood sugar monitors are expected to be accurate enough to be used by 40 percent of patients by 2010,<sup>30</sup> and insulin pumps and insulin pens will make administration of insulin more convenient for patients. The ability to use an asthma-like inhaler to deliver insulin also is expected to make insulin treatment more acceptable for many patients.

### **Remote Care Technologies**

Technology will make care more accessible to Boomers, who will be early participants in an era of “virtual caregivers.” Health technology will move into the home at a steady pace. Remote monitoring and other technologies will help keep many patients out of the hospital, and will provide communication links with caregivers who will need new processes for monitoring the stream of information and responding appropriately.

### **Monitoring**

Wearable devices will allow continuous monitoring of a patient’s condition while he or she goes about daily activities. Monitors also can detect unusual patterns of activity in the home and send alerts to caregivers or relatives. As Boomers age they will be taking multiple medications; smart pill bottles will be able to detect when they have missed a medication and remind them or alert someone else.



**With new technologies eliminating barriers to effective treatment, Boomers will be receiving more care than past generations.**

### **Less Invasive Surgical Options**

As the availability of minimally invasive procedures increases, the number of Boomers who can receive such treatment also will continue to expand. Miniaturized surgical devices and cameras allow surgeons to perform procedures using a very small incision, while advances in imaging allow surgeons to “see” through the skin, and lasers can be used to perform some surgery using no incision at all. Less invasive surgeries will offer quicker procedures, shorter recovery times, shorter hospital stays (or none at all) and decreased impact on work/lifestyle. Minimally invasive procedures will increase the number of patients that can be treated. These techniques are expected to increase obesity-related surgeries by 25 percent.<sup>31</sup> Studies have suggested that minimally invasive surgery for lung cancer can be performed safely on patients over 80.<sup>32</sup> They also will lead to the need for new types of procedure rooms. This new demand will be balanced by shorter hospital stays.

*Health Care Implication: With new technologies eliminating barriers to effective treatment, Boomers will be receiving more care than past generations.*

The health care system has gone through significant transformational change over the past 25 to 50 years, but more dramatic change lies ahead. Tomorrow’s patients, and the tools and treatments offered to them, will be very different from the patients we treat today. These differences present both opportunities and challenges for our system and being prepared for what lies ahead will be critical.

## Part 2:

# Boomers Will Challenge the Health Care System Now and Into the Future...

The confluence of the large Boomer population, increase in chronic conditions and rise of available medical treatments will begin to impact health care in 2010, when the oldest Boomers turn 65 – when more health services typically begin to be used. As a result, the need for health care resources will increase in hospitals, ambulatory care settings, long-term care facilities and the home.

Boomers, in particular, are likely to use more health care resources per person than past generations because they are living longer and managing more complex conditions. As mentioned earlier, the number of Boomers with multiple chronic conditions will quadruple by 2030.<sup>33</sup> Health care resource requirements increase in proportion to the number of chronic diseases. On average, the cost of health care for an individual with more than five chronic conditions is nearly 15 times that of an individual with no chronic conditions.<sup>34</sup>

### Resource Needs Will Increase Across Care Settings

**B**y 2030, Boomers will account for more than twice as many hospital admissions as they do today.<sup>35</sup> While length of stay may continue to decrease, the intensity of the care provided for each patient day

will likely increase as the proportion of inpatient admissions of patients over 65 rises. Services elsewhere in the hospital also will increase – including four million more ED visits than occur today.<sup>36</sup>

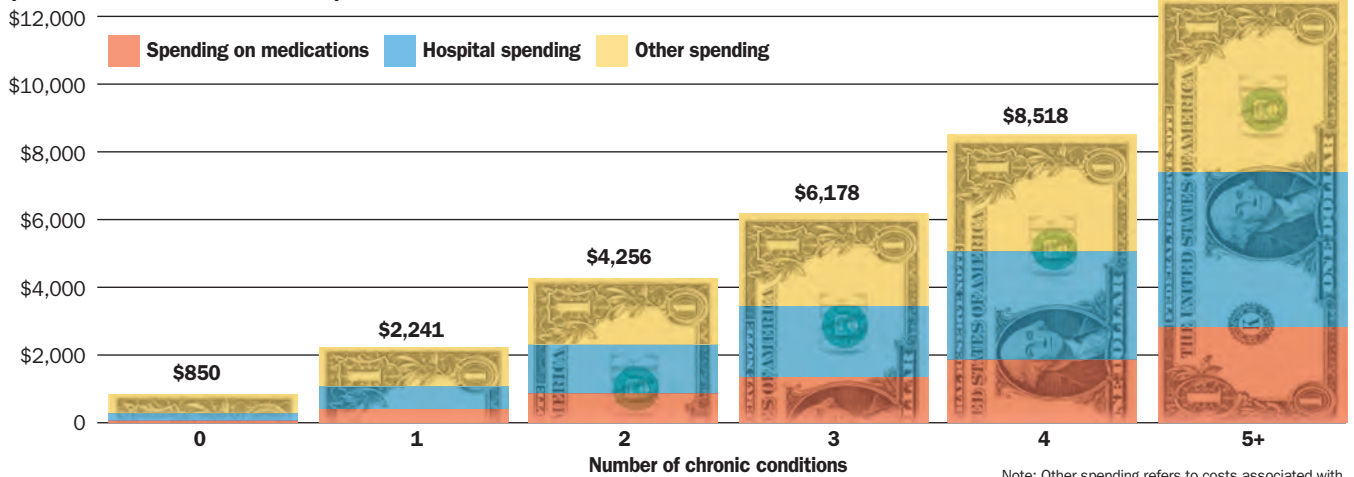
The number of physician visits has been increasing for all populations – by 34 percent over the last decade.<sup>37</sup> By 2030, there will be nearly twice

as many adult physician visits as there were in 2004, and Boomers will account for more than four of every 10 of these visits.<sup>38</sup>

The high levels of chronic disease in the Boomer population will increase the need for tests and

procedures. For example, in 2030, if all Boomers with diabetes receive recommended care, they will need 55 million laboratory tests per year – 44 million more than today.<sup>39</sup> These projections don't account for key unknowns. First, recent advances in medicine have helped the Boomer

### Annual Health Care Costs Per Person by Number of Chronic Conditions (Boomer and non-Boomer)



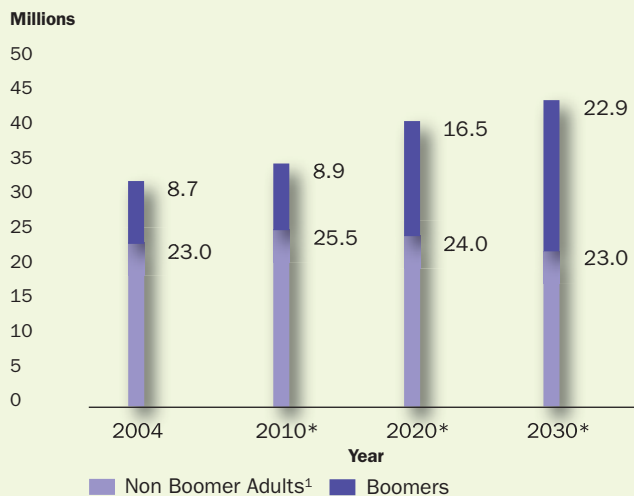
Source: Johns Hopkins and Partnership for Solutions, *Chronic Conditions: Making the Case for Ongoing Care*, September 2004

Note: Other spending refers to costs associated with physician office visits, home care visits and tests.

### Hospital admissions of Boomers will more than double...

### ...leading to a majority of hospital patients being over 65.

#### Number of Hospital Admissions

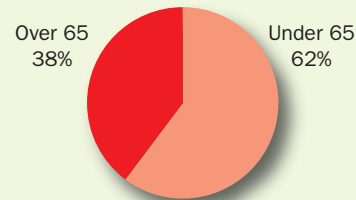


\* Projected.

1 Non-Boomer adults indicates non-Boomers over the age of 15.

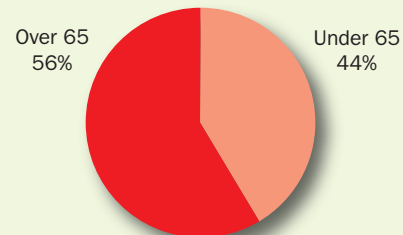
Source: FCG projections based on National Center for Health Statistics, *National Hospital Discharge Survey 2004*, May 2006

#### Total Hospital Admissions (2004 estimate)



Total = 35 Million

#### Total Hospital Admissions in 2030\*



Total = 49 Million

\* Projected.

Source: FCG projections based on National Center for Health Statistics, *National Hospital Discharge Survey 2004*, May 2006

generation survive illnesses and injuries that led to early death in past generations, including many forms of cancer, heart attacks and even trauma. The kinds of care these patients will require as they age is still largely unknown. Second, new treatments will likely further increase the number of conditions that can be treated, turning even more previously terminal diseases into chronic illnesses and further increasing longevity. These factors could lead to even greater demand for health care services.

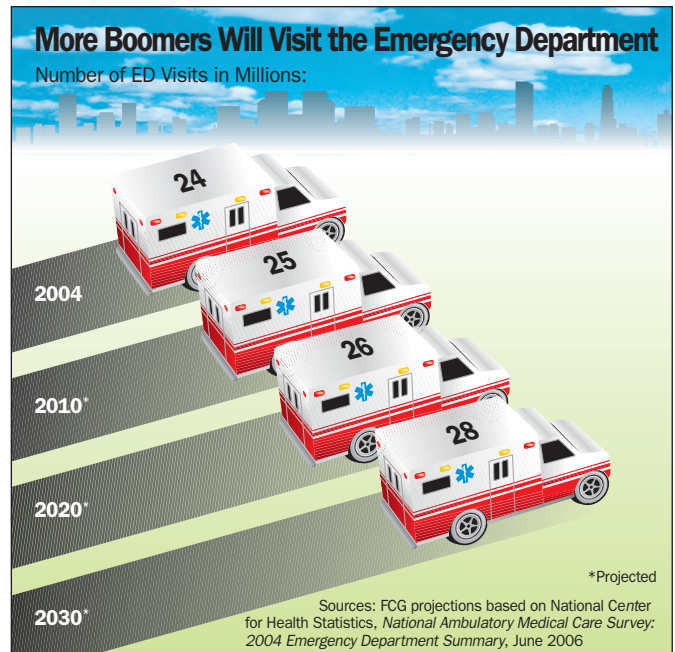
Increasing the use of preventive services is a national goal. Because the Baby Boom represented twelve million more births than the prior generation, prevention programs will need to expand their capacity to respond to these increased requirements.

### Demand Will Exceed Supply for Caregivers

**T**he severe workforce shortage will challenge the health care system's ability to meet this Boomer demand. In 2005, there was a U.S. shortage of about 220,000 registered nurses; by 2020 that gap will be over one million.<sup>40</sup> The nursing shortage is caused by both increased demand and by the aging of the nursing workforce – nurses are Boomers too. With fewer individuals entering the profession, or entering at an older age, the average age of the nursing workforce has increased every year. To meet future demand, it is estimated that the number of new nursing graduates would have to increase by 90 percent every year.<sup>41</sup> More recent studies have indicated that the nursing shortage may be only half of what was originally projected, or occur later than predicted due to nurses staying in the workforce longer and more people entering nursing in their late twenties.<sup>42</sup> But under either scenario, a huge need remains.

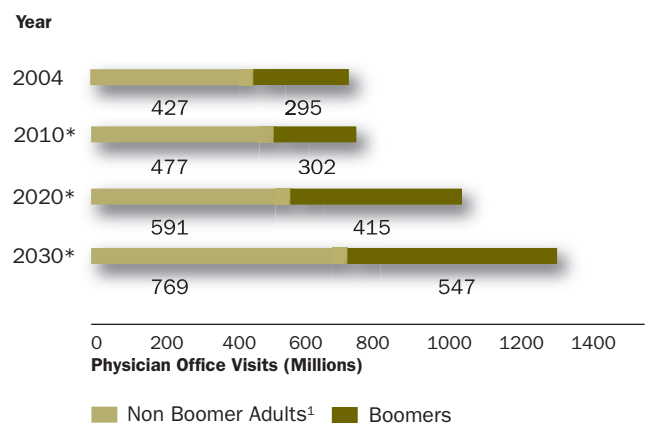
Foreign nurses are unlikely to meet the demand. Only about 3.5 percent of nurses in practice in

the U.S. received their nursing training elsewhere, and that percentage is expected to decrease as the demand for nurses increases worldwide.<sup>43</sup> This shortage will severely affect hospitals, where over 50 percent of nurses currently work (though the share of nurses employed in other care settings also is growing each year).



### Physician office visits for adults will number more than one billion by 2020. Four out of 10 will be Boomers.

#### Number of Physician Office Visits



\* Projected.

<sup>1</sup> Non-Boomer adults indicates non-Boomers over the age of 15.

Source: FCG projections based on National Center for Health Statistics, National Ambulatory Care Survey 2004, June 2006

While the nursing shortage receives the most attention, other patient care positions are also experiencing shortages. As of December 2006, while over 8 percent of nursing positions were vacant, 8 percent of pharmacist positions also were vacant and nearly 6 percent of laboratory and imaging technician jobs were not filled.<sup>44</sup>

The physician shortage is projected to steadily increase as the Boomers age, with a gap of 130,000 specialists<sup>45</sup> and over 60,000 primary care providers<sup>46</sup> predicted by 2020. This gap has led the Association of American Medical Colleges (AAMC) to call for a 30 percent increase in medical school enrollments.<sup>47</sup>

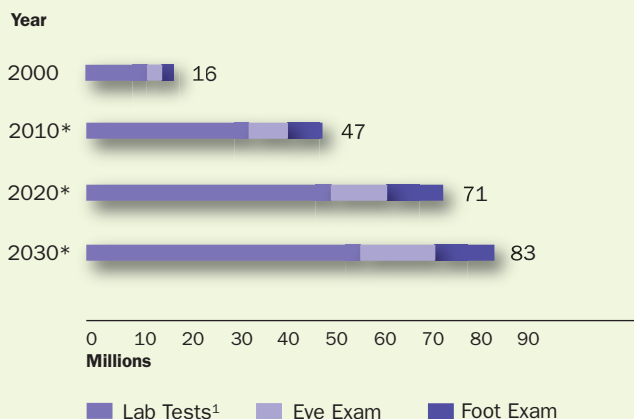
Physician shortages are projected to be most severe in the specialties that older Boomers need the most. There is already a shortage of geriatricians, who are trained specifically to provide primary care for older people, and the supply is actually declining. One-third of current training

program positions for geriatricians are not filled.<sup>48</sup> Even if the number of geriatric specialists remains stable, there will be a shortage of almost 20,000 by 2015. As our population ages, training to serve an increasingly geriatric population will be critical for most physicians.

The growing level of chronic disease will increase the demand for medical sub-specialists. More endocrinologists will be needed to treat patients with diabetes and more rheumatologists to treat patients with arthritis. Heart disease is now one of the top three diagnoses at physician office visits among people over 75.<sup>49</sup> The increase in longevity of Boomers – on top of advances in medications, less invasive treatments and diagnostic testing – will greatly increase demand for cardiology services. However, between 2000 and 2020, the supply of cardiologists will increase by only 5 percent while demand will increase by 33 percent.<sup>50</sup>

### Boomers with diabetes will drive an increased need for services assuming care guidelines are followed.

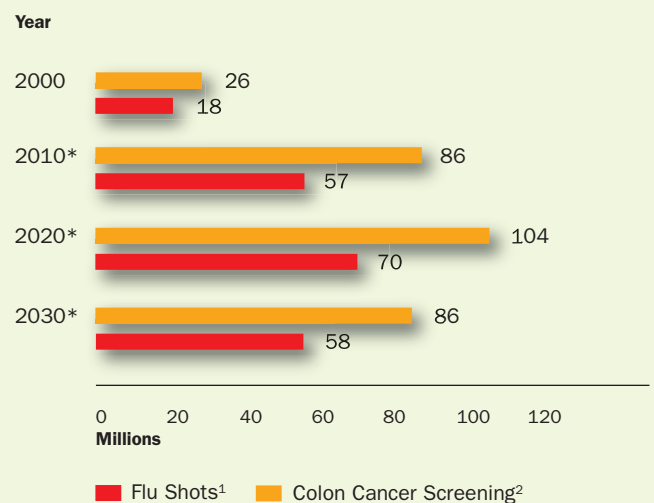
Tests and Procedures to Manage Diabetes Among Boomers



\* Projected.  
 1 Lab tests include protein screening, lipid profile, and Hemoglobin A1c.  
 Source: FCG projections based on AMA and CDC recommendations for managing diabetes (2006)

### Boomers will increase the need for preventive screening tests and immunizations.

Annual Number of Selected Screening Tests and Immunizations for Boomers



\* Projected.  
 1 Assumes compliance with AMA Physician Consortium Measures for annual flu shot for people over 50.  
 2 Assumes compliance with AMA Physician Consortium Measures for Colorectal Cancer Screening for fecal occult blood test, flexible sigmoidoscopy, and barium enema every five years, and colonoscopy every 10 years.  
 Source: FCG estimates and projections based on U.S. Census Bureau data, 2004 and 2004 update

**In 2005, there was a U.S. shortage of about 220,000 registered nurses; by 2020 that gap will be over one million.**

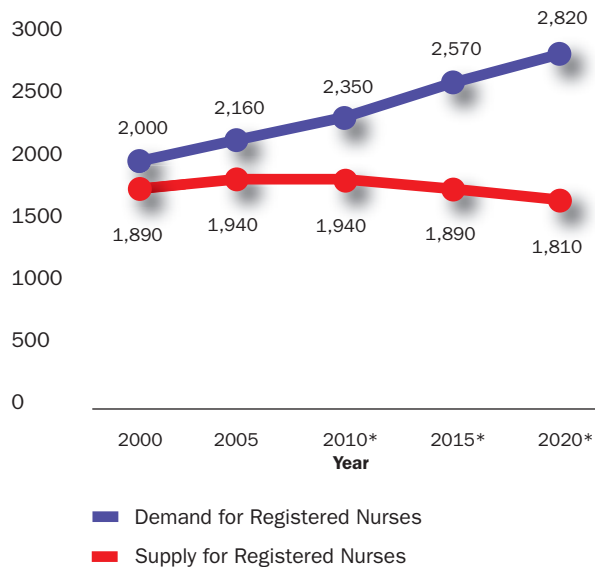
Orthopedic surgeons also will be in high demand. An aging population and advances in treatment will increase demand for the two most common orthopedic procedures, hip and knee replacements. However, between 2000 and 2020 the supply of orthopedic surgeons will increase by only 2 percent while the demand will increase by 23 percent.<sup>51</sup>

During the last 10 years, the number of people over 65 receiving hip replacements increased by over 35 percent, while the number receiving knee replacements increased by more than 70 percent.<sup>52</sup> By 2030, eight times as many knee replacements as today will be performed.<sup>53</sup> The availability of improved joints is one key factor increasing demand. Knee replacements designed especially for women (who undergo about two-thirds of these procedures) were introduced in 2006 and are expected to produce better results.

Improvements in care and lifestyle are also driving demand. New knee replacement techniques that use imaging technology require a smaller incision and allow knee implants to be perfectly aligned without use of a steel rod in the leg, resulting in quicker recovery. Boomers exercise more than their parents did, and this has led to a 33 percent increase in sports injuries.<sup>54</sup> As a result, Boomers will need more orthopedic treatments, and they will want to quickly return to their active lifestyle.

## The need for registered nurses is outpacing the supply.

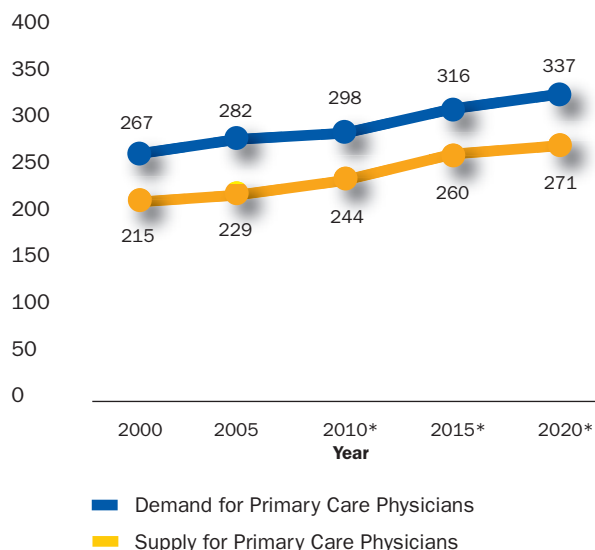
Registered Nurses<sup>1</sup> Supply vs. Demand (Thousands)



\* Projected.  
 1 Full-time equivalent nurses.  
 Source: FCG projections based on HRSA, *What Is Behind HRSA's Projected Supply, Demand, and Shortage of Registered Nurses*, September 2004

## The projected gap for primary care physicians will increase as Boomers age.

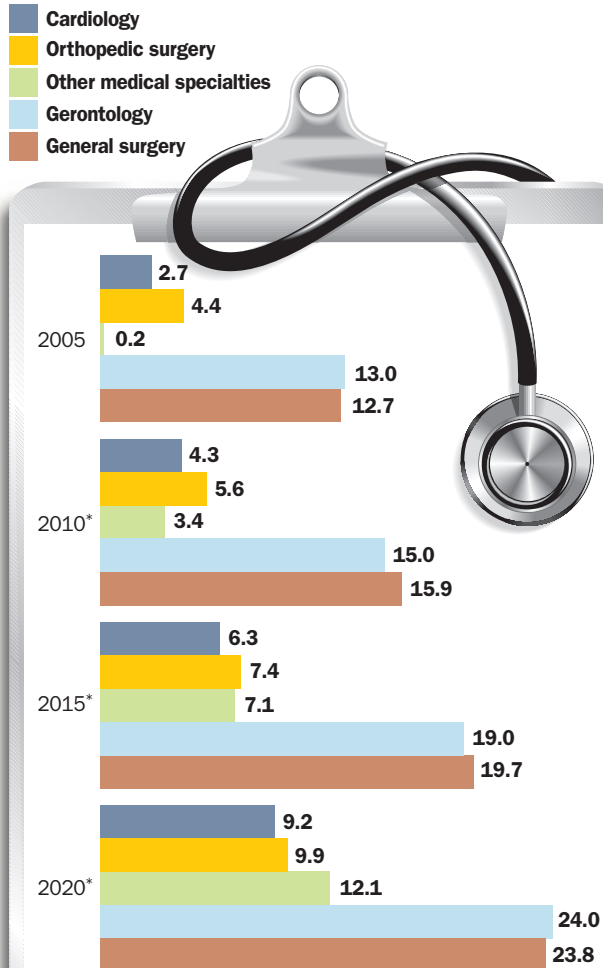
Primary Care Physician<sup>1</sup> Supply vs. Demand (Thousands)



\* Projected.  
 1 Full-time equivalent physicians.  
 Source: FCG based on HRSA, *Physician Supply and Demand: Projections to 2020*, October 2006

## Physician Shortage Will be Greatest for Specialties Most Used by Boomers

Physician Shortage for Select Specialties (in Thousands)



Sources: *Physician Supply and Demand: Projections to 2020*, HRSA, October 2006. *Research Shows Rapid Decline in Geriatric Medicine Students*, Press Release, University of Cincinnati, April 4, 2007. *Aging Boomers Face a Doctor Shortage*, CBS News, March 4, 2003

\*Projected

**!** By 2030, eight times as many knee replacements as today will be performed.

## Diversity of Caregivers Lags Growing Diversity of Patients

If current trends continue, the diversity of the provider population will not match the diversity of the patient population. Research has shown that when patients and physicians share the same background, access to care improves and patients are more satisfied.<sup>55</sup> Today, while 25 percent of the population is of African American, Hispanic or Native American origin, only 6 percent of physicians come from these groups. Hispanics and African Americans are the fastest growing segments of the population, but the percentage of medical school students from these groups is not increasing as rapidly.<sup>56</sup>

The diversity of the nursing profession also is not keeping pace. Currently less than 2 percent of nurses list their ethnic origin as Hispanic, while 14 percent of the U.S. population is Hispanic.<sup>57</sup>

Anticipating the Boomerism of health care, efforts are underway to close the gap between supply and demand for care as well as meet the differing expectations and demographics of this population. Hospitals are engaging in efforts on multiple fronts and are gearing up their facilities and staff to meet the increased and changing care needs. At the same time, they are working to develop new models for care delivery that can better utilize scarce resources and better manage chronic disease to reduce the need for hospital-based care.

## Part 3:

# America's Hospitals Are Responding

The combination of more chronically-ill patients, more diverse and demanding patients, and new technologies is challenging the health care system as the Boomer generation ages. But Boomers represent the beginning of a sustained trend toward more complex and demanding patients that will require substantial changes to the health care system. Hospitals, a critical player, have begun to take on these challenges, but there is still more to be done.

### More Demand Requires New Approaches to Care Delivery

**M**any hospitals across the country are at or near capacity, and while construction of new facilities to treat a growing population is one response, hospitals are undertaking initiatives to improve patient care flow. Hospitals are streamlining how patients are triaged in the ED, transferred to the hospital floors and discharged to their homes or other settings. Improvements in patient flow can free up hospital beds – effectively increasing a hospital's capacity to treat patients – and lead to more timely care and increased patient satisfaction.

Investments in technology can play an integral role in supporting staff involved in admitting, transporting and discharging patients. Computerized bed-tracking systems are now being used in some facilities to capture and maintain detailed, real-time information about the status of a hospital's beds, minimizing patient wait time and

allowing resources to be used more efficiently. Some hospitals have implemented portable, wireless communication systems linking clinicians instantly to speed up the coordination of vital clinical services for hospitalized patients.

*Health Care Response: Improvements in patient flow help hospitals prepare for an influx of new patients by better using existing capacity.*

### Nurturing the Caregiver Workforce

**T**he nursing shortage is prompting many hospitals to investigate how to use nurses' time more effectively. One national, hospital-focused initiative has been identifying new ways to more effectively deliver care to patients.<sup>58</sup> Frontline staff at hospitals participating in this program created, tested and measured ideas for improving bedside care, from reducing non-clinical tasks so nurses can spend more time at the bedside to reorganizing how nursing stations are positioned. Other benefits included happier patients, increased staff satisfaction and



decreased staff turnover. The American Organization of Nurse Executives (AONE), a subsidiary of the AHA, will disseminate concepts of this project to 50 hospitals nationwide.

Individually, hospitals have implemented many programs to address current and projected staffing shortages. From community scholarships and educational loans, to hospital internships and programs that develop internal staff for key positions, hospitals are using creative approaches to fill critical vacancies, ensuring that well-trained nurses and other skilled staff are available to meet demand. Additionally, hospitals have partnered with nursing schools to ensure both nursing candidates and nursing instruction are available to meet the needs of future patients. One North Carolina program projects 230 nursing graduates over four years; another in New York has graduated 2,500 nurses over its lifetime.<sup>59</sup>

Hospitals also are accelerating their recruitment of minority clinicians to reflect the expanding diversity of their local patient populations through scholarships and fellowship programs for minorities, and assisting in the licensing process for foreign-trained nurses.<sup>60</sup> The AAMC – working in conjunction with over 400 teaching hospitals and 125 medical schools – has developed the AspiringDocs campaign to raise awareness of the need for more diverse physicians and medical school applicants through online activities, media outreach, peer-to-peer communication and special campus events.<sup>61</sup>

*Health Care Response: Attracting and retaining caregivers is critical to meeting increased Boomer demand. Recruitment and retention efforts can also produce a hospital staff more reflective of and responsive to the patient population it serves.*

## Planning for New Technology

**T**he rapid pace of technology change is a challenge for health care providers. New technology can enhance care but it is also expensive and can impact hospital design, staffing requirements, and infrastructure needs. Forty hospital systems across the country have joined HealthTech, an organization that provides technology forecasts and helps hospitals prepare for implementing new technology and also anticipate how technology will help create the hospital of the future. The Massachusetts Technology Collaborative is assisting hospitals with implementation of Computerized Physician Order Entry systems by providing assessments of readiness, educational programming, and studies to document benefits.

*Health Care Response: Hospitals are anticipating the next wave of technology advances and integrating technology into future planning.*

## Anticipating and Preparing for the Wave of Chronic Disease

Addressing the growing needs of aging Boomers with one or more chronic diseases requires a multi-disciplinary approach involving hospitals and others in the community. Hospital initiatives underway provide models for better case management for patients with chronic diseases. Components include:

- Documenting a comprehensive care plan for patients being discharged from the hospital that reflects all of the patient's active medications; an assessment of the patient's home situation, support mechanisms and risks; and concrete action steps to which the patient has agreed;
- Leveraging a computerized tracking system to identify and track patients with chronic illnesses who require follow-up care on a regular basis;

- Recruiting a team of case managers, home care nurses and health coaches to proactively reach out to at-risk patients being discharged from the hospital and those with chronic disease who haven't been seen at the required intervals; and
- Actively and remotely monitoring patients at risk for deteriorating health, often avoiding their having to be readmitted to the hospital – or admitted in the first place.

Broader efforts involving hospitals and other community partners can reduce the demand for health care services by keeping older residents independent and healthy.

- *Aging in Place*, an initiative adopted by a number of hospitals, keeps seniors independent longer by helping them manage their chronic conditions and coordinating their care while at home. The initiative has resulted in improved blood pressure, diet, exercise and medication compliance for those involved, as well as community support and trust. One particular collaboration among a health system, local government and non-profit organizations has allowed more than 1,000 seniors to age in place.<sup>62</sup>
- Three hospitals in rural Idaho use volunteer postal workers, meter readers and store check-out clerks who are regularly in contact with seniors to help them access needed services and identify early-on those having difficulty living at home.<sup>63</sup>

Technology can play a critical role supporting chronic disease management by closely tracking patient health status. Personal health records (PHRs) allow patients to track their conditions, access their medical records and communicate with their physicians or case managers – thereby allowing patients to become more closely engaged in their own health care. Two-thirds of Americans believe that online access to health and medical information gives people more control over their health care.<sup>64</sup> One community initiative in



## Two-thirds of Americans believe that online access to health and medical information gives people more control over their health care.

Washington that implemented a team of clinical care specialists in conjunction with a shared patient care plan and PHRs reported improved or stabilized health status while reducing overall costs by \$3,000 per patient.<sup>65</sup>

*Health Care Response: People are living longer but may have more health conditions. By better coordinating care and engaging patients, hospitals and other providers can improve patients' quality of life, reduce health care costs and better target health care resources to those most in need.*

### Addressing Obesity

**H**ospitals are creating initiatives and programs to address the obesity epidemic in their communities and create an environment that is welcoming for obese patients. These initiatives include patient rooms fitted with wider beds, larger blood pressure cuffs and mechanical patient lifts to assist caregivers – as well as sponsoring community fitness and nutrition programs in local schools and promoting workplace wellness. A Virginia hospital program involves community organizations to connect residents with local fitness and nutrition programs, events, classes and regular wellness screenings for 25 week sessions. A community Web site is the source for program updates and free registration.<sup>66</sup> These initiatives are intended to make hospital stays more comfortable for obese patients, raise community awareness and reduce the overall incidence of obesity.

*Health Care Response: Hospitals are fighting the increase in obesity among patients as well as adapting their internal programs to compassionately care for those who have obesity-related conditions.*

## **Initiatives to Prevent Falls**

**H**ospitals have implemented programs that reduce the incidence of falls *within* the hospital, including the installation of safety bars and wider doors that allow caregivers to safely accompany patients to the bathroom, and completing intake assessments to identify and track patients at risk for falling. Hospitals also are focusing on preventing falls in patients' homes and the broader community. Hospitals in California, Michigan, New Hampshire and Wisconsin are participating in statewide fall prevention initiatives.<sup>67</sup> In rural Nebraska, a hospital introduced free Tai Chi workshops to help seniors with balance and fall prevention,<sup>68</sup> and a rural Wisconsin program educates the public about medications and other unsuspected causes of falls.<sup>69</sup> These programs enable seniors to live safely and independently.

*Health Care Response: The first component of fall prevention is identifying patients at risk and educating the community – and hospitals can play a lead role.*

## **Understanding Health Care Needs through the Eyes and Ears of the “New Patient”**

**T**he aging Boomer generation will be more diverse and more demanding than the current senior population, prompting hospitals to look at new ways to address their needs. Hospitals are taking steps to address language and cultural barriers.

Many of these efforts have focused on identifying promising practices for hospitals to ensure effective communication with their patients and families, especially as the limited English proficiency (LEP) population expands and its needs become more complex. For example, The Health Research and Educational Trust, an AHA affiliate, in conjunction with The Commonwealth Fund, released two studies in 2006 outlining some of the leading approaches for patient-centered communication with vulnerable populations, as collected from eight participating hospital sites.<sup>70</sup> These include:

- Language, race and ethnicity – and the patient's associated needs and preferences – recorded in hospital-wide systems;
- Interpreters and outreach workers integrated on committees throughout the hospital to ensure patients' cultural needs are incorporated into hospital programs; and
- Cultural awareness and sensitivity training for all employees.

*Health Care Response: Effectively communicating and reaching out to diverse communities will ensure the health needs of these populations are met.*

## **Supporting Patients and Their Families at the End of Their Lives**

**P**roviding palliative and end-of-life care is not new for hospitals. Hospitals are accustomed to involving family members in the care of the patient, particularly as they address difficult end-of-life decisions. Educational brochures and diligence in capturing advanced directives also help support this patient population. And with more patients desiring end-of-life care at home or in alternative settings, hospitals are developing or partnering with special palliative care teams, hospice programs, home care services and spiritual resources

to meet patients' wishes. One award-winning health system uses a team approach to treat illness, manage symptoms and address anxiety and the spiritual needs of each patient as they approach the end of life.<sup>71</sup> Patients and families receive help in resolving difficult end-of-life decisions. The health system is working to create a culture where looking at the end of life is not seen as giving up hope but, instead, redefining hope.

*Health Care Response: Hospitals are working with patients and families to identify and support end of life wishes.*

### **Going Beyond the Medical Model of Care**

**F**inally, hospitals are undertaking initiatives to offer the more personalized care, comfort, service and convenience that Boomers have come to expect. From accommodating family caregivers and reducing sound, to complementary and alternative medicine programs (including massage and acupuncture) and a broad range of fitness programs, the focus is on wellness not simply restoring health.

For example, newer hospitals are incorporating soothing elements like natural lighting, landscaped courtyards and sound-reduction materials. In a few cases, patients can even adjust the room temperature and lighting. Some changes address patient privacy like single-occupancy rooms. Others accommodate family caregivers by providing an in-room family area – including chairs that convert to beds – and Web sites that allow caregivers to communicate with hospitalized patients remotely. Technology-related service enhancements have brought online pre-registration, portable registration tablets, electronic appointment requests and in-hospital patient kiosks to some hospitals.

Some of these design and service enhancements have emerged through the work of *Transforming Care at the Bedside*, a project coordinated by the Institute for Healthcare Improvement and funded by the Robert Wood Johnson Foundation.<sup>72</sup> Others are being developed, studied and implemented through The Pebble Project, a research-based collaboration between the Center for Health Design and several health care organizations (most of which are hospitals).<sup>73</sup>

*Health Care Response: Innovative new approaches to meeting patient needs reflect a broader care focus that encompasses acute-care needs and enhances the overall patient experience.*

# Conclusion

**H**ealth care delivery in the future will be markedly different. Patients want more control over their care, and new ways of delivering care will be essential if we are to meet the increased demand and growing incidence of chronic disease. Technologies are emerging that will make it easier to deliver care remotely and to more actively engage patients and their families in the care delivery process. Hospitals are leveraging these technologies and broadening programs in ways that will dramatically change the face of health care for generations to come.

Despite these advances, this wave of aging Baby Boomers will reshape the health care system forever. Hospitals play an important role in preparing for that challenge and are taking steps today to prepare for tomorrow. But hospitals cannot do it alone. Not only will it take cooperation from all parts of the health care sector, it also will require societal intervention to promote wellness and improve the health of Americans. This larger effort is needed if we are to meet the growing health needs of our citizens.

# References

- <sup>1</sup> M.Thornhill, The Boomer Project, 2006.
- <sup>2</sup> U.S. Census, 2006 estimate from 2000 census.
- <sup>3</sup> BoomerMarketingNews, October 2006.
- <sup>4</sup> National Vital Statistics Reports, 53:6 (Table 12: Estimated life expectancy at birth in years, by race, and sex: Death-registration State, 1900-28, and United States, 1929-2002) Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. November 10, 2004.
- <sup>5</sup> M.Freedman. Prime Time: How Baby Boomers Will Revolutionize Retirement and Transform America, 1999.
- <sup>6</sup> Chartbook on Trends in the Health of Americans, CDC, 2006.
- <sup>7</sup> American Cancer Society, Cancer Facts & Figures 2007.
- <sup>8</sup> S.R.Collins, et al. "Health Coverage for Aging Baby Boomers: Findings from the Commonwealth Fund Survey of Older Adults," The Commonwealth Fund, January 2006.
- <sup>9</sup> "The State of Aging and Health in America 2007," Centers for Disease Control and Merck Company Foundation. [www.cdc.gov/aging/saha.htm](http://www.cdc.gov/aging/saha.htm)
- <sup>10</sup> FCG projections based on J. Wolff, et al. "Prevalence, Expenditures, and Complications of Multiple Chronic Conditions in the Elderly," Archives of Internal Medicine, 2002: 162:2269-2276.
- <sup>11</sup> Joyce, et al, "The lifetime burden of chronic disease among the elderly," *Health Affairs*, Sep. 2005.
- <sup>12</sup> FCG projections based on National Center for Chronic Disease Prevention and Health Promotion, *National Diabetes Surveillance System*. Accessed March 26, 2007.
- <sup>13</sup> FCG projections based on National Center for Health Statistics, *Trends in Health and Aging*. Accessed March 28, 2007.
- <sup>14</sup> D.N.Lakdawalla et al. "The Health and Cost Consequences of Obesity Among the Future Elderly," *Health Affairs*, September 26, 2005.
- <sup>15</sup> "Healthy Aging: Preventing Disease and Improving Quality of Life Among Older Americans, 2007," Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. January 2007.
- <sup>16</sup> G.Fuller, "Falls in the Elderly," *American Family Physician*, 2000.
- <sup>17</sup> "Could Baby Boomers Be Approaching Retirement in Worse Shape than their Predecessor," NIH News, March 5, 2007.
- <sup>18</sup> "Boomers: The Next 20 Years," Institute for the Future, 2006.
- <sup>19</sup> U.S. Census Bureau, Current Population Survey, 2005 Annual Social and Economic Supplement. (Table 1: Educational Attainment of the Population 15 Years and Over, by Age, Sex, Race, and Hispanic Origin: 2005). Internet release date: October 26, 2006; and U.S. Census Bureau, Current Population Survey, 1985 Social and Economic Supplement. (Table 1: Years of School Completed by Persons 15 Years Old and Over, by Age, Sex, Race, and Spanish Origin: March 1985, 1984, 1983, and 1982).
- <sup>20</sup> S.Schadler. and C.S. Golvin, "The State of Consumers and Technology: Benchmark 2006" Forrester Research, July 27 2006. And Williamson, DA, "Here Come the Aging Boomers" (Table 2: Older Adults and Seniors Online in the US, 2003-2008), *eMarketer*, May 2005.
- <sup>21</sup> K. Davis. "Oldie but Goodies," U.S. News and World Report, March 6, 2005.
- <sup>22</sup> "Living Longer, Working Longer: The Changing Landscape of the Aging Workforce – A MetLife Study," MetLife Mature Market Institute, April 2006.
- <sup>23</sup> The 2005 Del Webb Baby Boomer Survey, conducted by Harris Interactive, April 2005.
- <sup>24</sup> FCG projections based on "65+ in the United States: 2005," U.S. Census Bureau 2005.
- <sup>25</sup> K.G.Manton, and X Gu. "Changes in the prevalence of chronic disability in the United States black and nonblack population above age 65 from 1982 to 1999," *Proceedings of the National Academy of Sciences* 98(11):6354-6359. May 22, 2001.
- <sup>26</sup> "Complementary and Alternative Medicine: What People 50 and Older Are Using and Discussing with Their Physicians," data collected by ICR, report by AARP/NCCAM, Washington, D.C., January 2007.
- <sup>27</sup> Citizens Health Care Working Group presentation by Nicholas Christakis, August 17,2005.
- <sup>28</sup> "Thirteen Million Baby Boomers Care for Ailing Parents, 25% Live with Parents," [www.seniorjournal.com/NEWS/Boomers/5-10-19BoomersCare4Parents.htm](http://www.seniorjournal.com/NEWS/Boomers/5-10-19BoomersCare4Parents.htm), October 19, 2005.
- <sup>29</sup> "Strong Public Support for Right to Die," The Pew research Center, January 5, 2006.
- <sup>30</sup> "Executive Summary: Continuous Glucose Monitoring: Innovation in the Management of Diabetes," New England Healthcare Institute, NEHI Innovation Series, March 2005.
- <sup>31</sup> "The Future of Minimally Invasive Surgery," Technology Forecast Report, Health Technology Center, August 2004.
- <sup>32</sup> "Minimally Invasive Surgery May Increase Options for Octogenarians with Some Lung Cancers," [www.medicalnewstoday.com/medicalnews.php?newsid=33359](http://www.medicalnewstoday.com/medicalnews.php?newsid=33359), November 11, 2005.
- <sup>33</sup> FCG projections based on J. Wolff, et al. "Prevalence, Expenditures, and Complications of Multiple Chronic Conditions in the Elderly," Archives of Internal Medicine, 2002: 162:2269-2276.
- <sup>34</sup> FCG projection based on "Chronic Conditions: Making the Case for Ongoing Care," Partnership for Solutions, December 2002.
- <sup>35</sup> FCG projections based on National Center for Health Statistics, *National Hospital Discharge Survey 2004*, May 2006.
- <sup>36</sup> FCG projections based on National Center for Health Statistics, *National Ambulatory Medical Care Survey: 2004 Emergency Department Summary*, June 2006.
- <sup>37</sup> E. Hing, D.K.Cherry, D.A.Woodwell. 2004 Summary: National Ambulatory Medical Care Survey. Advance Data from Vital and Health Statistics, no. 374. Hyattsville, Maryland. National Center for Health Statistics, 2006; and S.M. Schappert. 1994 Summary: National Ambulatory Medical Care Survey. Advance Data from Vital and Health Statistics, no. 273. Hyattsville, Maryland. National Center for Health Statistics, 1996.
- <sup>38</sup> FCG projections based on National Center for Health Statistics, *National Ambulatory Care Survey 2004*, June 2006.
- <sup>39</sup> FCG projections based on AMA and CDC recommendations for managing diabetes, 2006.
- <sup>40</sup> FCG projections based on HRSA, *What Is Behind HRSA's Projected Supply, Demand, and Shortage of Registered Nurses*, September 2004.

- <sup>41</sup> “What Is Behind HRSA’s Projected Supply, Demand, and Shortage of Registered Nurses?” HRSA, September 2004.
- <sup>42</sup> D.Auerbach, et. al. “Better Late than Never: Workforce Supply Implications of Later Entry into Nursing,” *Health Affairs*; January/February 2007.
- <sup>43</sup> The Registered Nurse Population: National Sample Survey of Registered Nurses, Preliminary Findings, HRSA, March 2006.
- <sup>44</sup> 2007 AHA survey of hospital leaders, May 2007.
- <sup>45</sup> *Physician Supply and Demand: Projections to 2020*, HRSA, October 2006; “Research Shows Rapid Decline in Geriatric Medicine Students,” Press Release, University of Cincinnati, April 4, 2007; and “Aging Boomers Face a Doctor Shortage,” CBS News, March 4, 2003.
- <sup>46</sup> FCG projections based on HRSA, *Physician Supply and Demand: Projections to 2020*, October 2006.
- <sup>47</sup> AAMC Statement on the Physician Workforce, Association of American Medical Colleges, June 2006.
- <sup>48</sup> “Research Shows Rapid Decline in Geriatric Medicine Studies,” Health News, University of Cincinnati, April 4, 2007.
- <sup>49</sup> National Ambulatory Medical Care Survey 2004, National Center for Health Statistics, June 23, 2006.
- <sup>50</sup> “Physician Supply and Demand: Projections to 2020,” HRSA, October 2006.
- <sup>51</sup> “Physician Supply and Demand: Projections to 2020,” HRSA, October 2006.
- <sup>52</sup> Falls Among Older Adults: Figures and Maps, CDC Injury Center, August 2006.
- <sup>53</sup> Boomer Seniors News Conference Keynote Speech Summaries, American Academy of Orthopaedic Surgeons, December 20, 2006.
- <sup>54</sup> Boomer Seniors News Conference Keynote Speech Summaries, American Academy of Orthopaedic Surgeons, December 20, 2006.
- <sup>55</sup> Garrison, G., “Closing the Gaps in the Medical School Application Pool – Research in Support of Aspiring Docs.org,” AAMC, date unknown.
- <sup>56</sup> Diversity in the Physician Workforce: Facts and Figures 2006, Association of American Medical Colleges, August 2006.
- <sup>57</sup> The Registered Nurse Population: National Sample survey of Registered Nurses, Preliminary Findings, HRSA, March 2006.
- <sup>58</sup> P.Rutherford et al. “Transforming Care at the Bedside,” Institute for Healthcare Improvement, 2004.
- <sup>59</sup> Southeastern Regional Medical Center, Lumberton, NC and St. John’s Riverside Hospital, Yonkers, NY, from “Health Care Workforce Ideas in Action,” American Hospital Association. [www.healthcareworkforce.org/healthcareworkforce\\_app/jsp/celest.jsp?programfocus=13](http://www.healthcareworkforce.org/healthcareworkforce_app/jsp/celest.jsp?programfocus=13). Accessed March 2007.
- <sup>60</sup> From the AHA/HospitalConnect website: [www.healthcareworkforce.org/healthcareworkforce\\_app/jsp/celest.jsp?programfocus=10](http://www.healthcareworkforce.org/healthcareworkforce_app/jsp/celest.jsp?programfocus=10). Accessed March 2007.
- <sup>61</sup> See [www.aspiringdocs.org/site/c.luIUL9MUJtE/b.2010925/k.C837/About\\_Us.htm](http://www.aspiringdocs.org/site/c.luIUL9MUJtE/b.2010925/k.C837/About_Us.htm) for more information.
- <sup>62</sup> North Shore-LIJ Health System, Great Neck, NY, from the AHA/HospitalConnect website: [www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html](http://www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html). Accessed March 2007.
- <sup>63</sup> Gritman Medical Center, Moscow, ID, from the AHA/Hospital-Connect website: [www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html](http://www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html). Accessed March 2007.
- <sup>64</sup> “Survey Finds Americans Want Electronic Personal Health Information to Improve Own Health Care,” press release December 7, 2006 from Lake Research Partners, American Viewpoint and the Markle Foundation.
- <sup>65</sup> Whatcom County, WA, from the IHI website: [www.ihl.org/IHI/Topics/PatientCenteredCare/PatientCenteredCareGeneral/ImprovementStories/PursuingPerfectionReportfromWhatcomCountyWashingtononPatientCenteredCare.htm](http://www.ihl.org/IHI/Topics/PatientCenteredCare/PatientCenteredCareGeneral/ImprovementStories/PursuingPerfectionReportfromWhatcomCountyWashingtononPatientCenteredCare.htm). Accessed March 2007.
- <sup>66</sup> Reston Hospital Center, Reston, VA, from the AHA/Hospital-Connect website: [www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html](http://www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html). Accessed March 2007.
- <sup>67</sup> “The State of Aging and Health in America 2007,” Centers for Disease Control and Merck Company Foundation. [www.cdc.gov/aging/saha.htm](http://www.cdc.gov/aging/saha.htm).
- <sup>68</sup> Good Samaritan Hospital, Kearney, NB, from AHA/Hospital-Connect website: [www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html](http://www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html). Accessed March 2007.
- <sup>69</sup> Lakeview Medical Center, Rice Lake, WI, from AHA/Hospital-Connect website: [www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html](http://www.caringforcommunities.org/caringforcommunities/hospitalsaction/caseexamples.html). Accessed March 2007.
- <sup>70</sup> M. Wynia and J. Matiassek “Promising Practices for Patient-Centered Communication with Vulnerable Populations: Examples from Eight Hospitals,” The Commonwealth Fund, August 2006; and Q. Ngo-Metzger, et al. “Cultural Competency and Quality of Care: Obtaining the Patient’s Perspective,” The Commonwealth Fund, October 2006.
- <sup>71</sup> J.Greene. “2005 Circle of Life Awards.” Hospitals & Health Networks August, 2005: 44.
- <sup>72</sup> See [www.ihl.org/IHI/Programs/StrategicInitiatives/TransformingCareAtTheBedside.htm](http://www.ihl.org/IHI/Programs/StrategicInitiatives/TransformingCareAtTheBedside.htm) for more information.
- <sup>73</sup> See [www.healthdesign.org/research/pebble](http://www.healthdesign.org/research/pebble) for more information.



American Hospital  
Association

**American Hospital Association**

One North Franklin  
Chicago, Illinois 60606

Liberty Place  
325 Seventh Street, NW  
Washington, DC 20004

**[www.aha.org](http://www.aha.org)**  
(800)424-4301

May 2007



**First Consulting Group**

111 West Ocean Boulevard  
Suite 400  
Long Beach, CA 90802

45 Hayden Avenue  
Suite 2600  
Lexington, MA 02421

**[www.fcg.com](http://www.fcg.com)**  
781-402-2520