What is the Caregiver Shortage?

Evidence of a growing caregiver shortage in the United States emerged in the early 2000s when the Association of American Medical Colleges (AAMC), the American Hospital Association (AHA) and other industry groups began investigating the potential impacts of demographic changes such as baby boomer aging, population growth and chronic disease growth. Although projections vary slightly, one agreement among initial and subsequent studies has been that **there will be a shortage and it will become substantial**. Most studies before passage of the Affordable Care Act projected shortages of at least 124,000 physicians and 500,000 nurses by 2025 (see Table 1); and there is general agreement that the additional 32 million covered lives resulting from the Affordable Care Act requires inflating those projections — by 31,000 physicians, for example, according to the AAMC.³

Similar shortages are projected for other caregivers including mental health, public health and dental providers. For example:

- A 2010 study commissioned by Delta Dental Plans Association predicted a decline in the number of dentists practicing in the United States of 7,000 (almost 4 percent) between 2012 and 2019.⁴
- According to the Paraprofessional Healthcare Institute, by 2020 the nation will need 1.1 million additional direct-care workers.⁵
- The Association of Schools of Public Health (ASPH) projects a shortage of 250,000 public health workers by 2020.⁶
- The American Geriatrics Society reports that the geriatrician supply in the United States is declining (down one-quarter to 7,000 since 2000), and predicts that demand will skyrocket as the population ages (to 36,000 by 2030).⁷

> **Residents of the United States who need teeth extracted may soon have to do it the old-fashioned way — with pliers, whisky and elbow grease — because there may not be enough dentists to go around.**³⁸

— Canadian Medical Association Journal

Numerous causes for the shortages have been identified. Impacts are predicted to include those already being felt in Massachusetts, where (by 2008) mandatory insurance coverage effective in 2006 reduced family practices with panel openings by almost 33 percent, and increased new patient waits to see an internist by more than 82 percent (17 to 31 days).³ Other risks include increased non-emergent care at emergency rooms (by patients with insurance but without access to primary care), longer waits for general surgery and other specialty care, and disease progression (and resulting increased care cost) that results from lack of access to timely preventive care. Goals for addressing caregiver shortages focus on minimizing the shortage and the impact it will have on care delivery.

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**Table 1. Projected Nurse and Physician Shortages by 2025**

<table>
<thead>
<tr>
<th>Caregivers</th>
<th>Year</th>
<th>Shortages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses</td>
<td>2025</td>
<td>500,000¹</td>
</tr>
<tr>
<td>Physicians: primary care</td>
<td>2025</td>
<td>46,000²</td>
</tr>
<tr>
<td>Physicians: surgery</td>
<td>2025</td>
<td>41,000²</td>
</tr>
<tr>
<td>Physicians: medical specialty</td>
<td>2025</td>
<td>8,000²</td>
</tr>
<tr>
<td>Physicians: other specialty</td>
<td>2025</td>
<td>29,000²</td>
</tr>
<tr>
<td>Physicians: total before reform</td>
<td>2025</td>
<td>124,000³</td>
</tr>
<tr>
<td>Physicians: reform impact</td>
<td></td>
<td>31,000¹</td>
</tr>
<tr>
<td>Physicians: total with reform</td>
<td>2025</td>
<td>155,000</td>
</tr>
</tbody>
</table>
What is Causing the Caregiver Shortage?
Identifying and understanding the causes of the caregiver shortage is important because it points the way to potential solutions, as well as a better understanding of the challenge. For example, knowing that one reason for the shortage is physician-aging makes retirement-postponement programs an obvious option to explore. The reason for the developing shortage is the intersection of two trends: 1) an increasing demand for care, and 2) a supply of caregivers that is not keeping up with demand.

The Increasing Demand for Care
Increasing demands for care in the United States come from a patient population which is growing, growing older and requiring more chronic disease care. Examples of these sources and impacts include:

- **Population growth:** The U.S. Census Bureau projects the population to increase by 13 percent between now and 2025.10
- **Population aging:** The first baby boomers turn 65 in 2011, and by 2030, 70 million U.S. residents (20 percent) will be 65 or older.11 A significant impact of that trend is that those 65 or older use twice as many physician resources as those less than 65.12

“This [2006-2025 population increase] alone could lead to a substantial increase in demand. An aging population virtually assures that increase.”13

- **Chronic disease growth:** “By 2030, half the population will have one or more chronic conditions, [and studies have shown that patients with chronic disease average more than twice as many physician visits per year as patients without a chronic condition].”15

Just one of the net impacts of the increasing demand for care will be an increase in physician visits. In 2004 the National Center for Health Statistics published data that predicts an 82 percent increase in the number of annual physician visits by 2030 (see Table 2).

The Inadequate Growth of Caregiver Supply
The other side of the shortage equation is inadequate growth and in some cases (nurses and dentists) a decrease in caregiver supply. Like the increase in demand, numerous causes are contributing, including:

- **Caregiver aging:** In 2008 more than one-third of active physicians were 55 or older, and one-fourth were 60 or older;16 36.4 percent of registered nurses will be 50–64 by 2015;17 the American Dental Association expects dentist retirement (and career change) to outpace growth by 2014;18 and in 2008 the ASPH reported that one-quarter of the public sector workforce will be eligible to retire by 2012. The message, of course, is that the industry is at risk of losing significant portions of the caregiver population to retirement within the next 5 to 10 years.
- **Flat medical school attendance:** From 1980 to 2005 there was no sign of physician supply increase, e.g., the number of graduating medical students remained flat (at approximately 16,000 per year).19
- **Medical school costs:** Undergraduate and medical school educations have become expensive, so much so that the current average educational debt of graduating medical school students (more than $155,00020) is becoming an issue for students considering medical school. As noted in a 2007 AAMC report on medical school tuition, “... if nothing changes, the outlook for medical education looks bleak.”21
- **Declining primary care interest:** What many consider to be the biggest concern about the physician supply is declining interest in primary care practice. Between 1950 and 2007, the percentage of U.S. physicians practicing primary care declined from 50 to 30 percent.22 One reason is income differentials. “Primary care physicians earn on average half of what their specialty colleagues make, and the gap is widening.”23

<table>
<thead>
<tr>
<th>Year</th>
<th>Visits per Year</th>
<th>Increase from 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>722,000,000</td>
<td>–</td>
</tr>
<tr>
<td>2010</td>
<td>779,000,000</td>
<td>7.9%</td>
</tr>
<tr>
<td>2020</td>
<td>1,006,000,000</td>
<td>39.9%</td>
</tr>
<tr>
<td>2030</td>
<td>1,316,000,000</td>
<td>82.3%</td>
</tr>
</tbody>
</table>

Table 2. Projected Visit Demands
per a 2007 American Medical Association (AMA) survey, primary care salaries averaged less than $200,000 per year, while neurological surgeons, who topped the list, earned more than $580,000.24

- **Physician job dissatisfaction:** Another reason for primary care decline is job dissatisfaction: “... two key trends negatively affecting the supply of primary care physicians: the income/reimbursement gap and growing provider dissatisfaction with working conditions ...”25 However, dissatisfaction is also impacting where physicians practice: “... many doctors have decided that the challenges of running their own businesses are simply too great,” and are turning away from private practice to employment at hospitals and health systems.26

- **Nurse and nurse practitioner faculty shortages:** According to three-fourths of nursing schools surveyed in 2008, faculty shortages accounted for refusing admission to almost 50,000 qualified student applicants that year.27

- **Regional disparities:** Upon closer examination, a big contributor to shortages is often regional disparities (resulting in “underserved” areas and communities). “For every new physician that decides to practice an underserved area, four will settle in regions of the country with adequate numbers of providers.”28 Examples include:
  - 55 vs. 93 primary care physicians per 100,000 residents in rural vs. urban areas.29
  - 174 vs. 405 total physicians per 100,000 residents in Mississippi vs. Massachusetts.30

**What is Being Done to Address the Shortage?**

What initiatives are being undertaken to address the nation’s caregiver shortage? There are two sources of effort to examine: the first is the industry’s general response, which gradually evolved since signs of shortage first appeared; the second is health reform, specifically the American Recovery and Reinvestment Act of 2009 (ARRA) and the Patient Protection and Affordable Care Act (Affordable Care Act), which between them sponsor numerous initiatives designed to jumpstart caregiver shortage recovery.

**Industry Efforts**

Industry efforts prior to health reform have focused on four areas:

1. Increasing U.S. medical school enrollment,
2. Encouraging primary care residencies and careers,
3. Expanding mid-level provider (nurse practitioner, physician assistant, nurse mid-wife) care delivery, and
4. Exploring ways to more effectively use caregiver resources.

In 2006, the AAMC publically encouraged U.S. medical schools to dramatically increase enrollment — by 30 percent between then and 2015.31 There are signs of modest success. First year medical school enrollments increased by 1.6 percent in 200832 and 2 percent in 2009.33 Also, in early 2010, 23 medical schools received or applied for accreditation — the largest increase since the 1970s.34

Efforts to reduce primary care shortage have focused on: a) promoting the importance and prestige of primary care, and b) experimenting with mid-level primary care providers. Although also modest, what are hoped to be initial signs of success appeared in March 2010 when after years of continuous decline, graduating medical school student selection of primary care residencies increased — by 9 percent in family practice, 3 percent in internal medicine and 3 percent in pediatrics.35 Success in mid-level primary care practice has also been modest. In May 2009, for example, 85,000 primary care nurse practitioners were reported to be practicing in the United States, however, the level of care they are authorized to provide still varies considerably from state to state,36 and faculty shortages are limiting the number of nurses and nurse practitioners nursing schools and universities are able to graduate.
Options for more effective use of caregivers receiving the most attention have been electronic visits; telemedicine — consultations, emergency care, group visits, and even rounds via remote devices including cameras and in some cases, robots. Success has been demonstrated, but there is little evidence of adoption rates with a significant impact on caregiver shortages. For example, in a July 2008 study of approximately 28,000 physicians providing care to patients with Blue Cross/Blue Shield e-visit coverage, it was found that those physicians averaged only 12 e-consults per month.37

The net effect of caregiver shortage activities prior to health reform has been effective identification of potential solutions, but only “modest success” at forging and implementing widespread solutions.

**Health Reform Programs**

Framers of ARRA and the Affordable Care Act have taken a more aggressive approach. Building on industry-defined problems and proposed solutions, they defined several specific initiatives, each with a strategy for increasing caregiver capacity in a specific area. Characteristics common to almost all initiatives include:

- **Financial incentives**: primarily grant, loan repayment and scholarship programs for institutions who develop and/or offer and students (medical school, nursing, other) who complete specific educational curricula. These incentives are a large part of what makes health reform aggressive. Although dollars are not specifically allocated, the Congressional Budget Office (CBO) has projected 10-year spending of more than $20 billion.
- **Specific goals**: such as expanding primary care training, training of students from specified underserved areas, faculty, and practice in underserved areas and specialties.
- **Commitments in return for incentives**: typically years of service in or preparation of students for practice in underserved areas, specialties and educational programs.

ARRA and Affordable Care Act provisions and projected spending are summarized in Table 3, and highlighted in the “ARRA Initiative Highlights” and “Affordable Care Act Highlights” sections that immediately follow. Detailed information about the programs is available online at [HRSA](https://www.hrsa.gov) for ARRA provisions, [HR 3950](https://www.congress.gov) for Affordable Care Act provisions, and [CBO Letter](https://www.cbo.gov) for projected Affordable Care Act provision spending.

**Table 3: ARRA and Affordable Care Act Caregiver Shortage Provisions**

<table>
<thead>
<tr>
<th>Initiative/Feature Summary</th>
<th>Spending (million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARRA</td>
<td></td>
</tr>
<tr>
<td>General Health Professional Education</td>
<td>200</td>
</tr>
<tr>
<td>National Health Service Corps Programs</td>
<td>300</td>
</tr>
<tr>
<td>Affordable Care Act — Title V</td>
<td></td>
</tr>
<tr>
<td>Subtitle B — workforce and workforce oversight programs</td>
<td>175</td>
</tr>
<tr>
<td>Subtitle C — Federal loan, scholarship, and loan repayment programs</td>
<td>795</td>
</tr>
<tr>
<td>Subtitle E — Existing workforce support</td>
<td>588</td>
</tr>
<tr>
<td>Subtitle D — Workforce educational program support</td>
<td>419</td>
</tr>
<tr>
<td>Subtitle F — Strengthening primary care</td>
<td>50</td>
</tr>
<tr>
<td>Total Spending</td>
<td>$500</td>
</tr>
</tbody>
</table>

**ARRA Initiative Highlights:** ARRA addresses caregiver shortage during FY 2010 via initiatives administered by the Department of Health and Human Service’s (HHS) Health Resources and Services Administration (HRSA). The programs provide scholarships for disadvantaged students, loan repayments to students and faculty, grants for educational program development, and grants for education...
facility equipment purchases. It also includes a special loan repayment program for primary care, mental health, and dental providers who serve in the National Health Service Corps (NHSC), which assigns providers as needed to practice in underserved areas throughout the United States.40

Examples of awards and recipients that have resulted from the allocations include:

- **$13.4 million:** for loan repayment programs for nurses who agree to practice in underserved facilities and/or serve as faculty in accredited nursing education programs.41
- **$33 million:** for public health educational programs, dental residencies, and scholarships for disadvantaged medical and nursing school students.42
- **$7.6 million:** to 18 state agencies for use in recruiting and providing loan repayment to clinicians who agree to practice in underserved communities or regions for a minimum of 2 years.43
- **A general invitation by NHSC:** on its Website for primary care, dental and behavioral/mental health providers to apply for NHSC positions, and thereby qualify for educational loan repayment grants. Two years of NHSC service qualifies a provider for up to $50,000 in grants, and participants that complete 2 years can apply for extensions with additional grants to cover debt balances in excess of $50,000.44

NOTE: ARRA and Affordable Care Act loan repayment and scholarship awards (with the exception of stipends) — to practicing caregivers and faculty — are tax free.

**Affordable Care Act Highlights:** Affordable Care Act initiatives have goals and objectives similar to ARRA, but are more extensive and comprehensive. This is reflected in spending alone. Compared to ARRA’s allocation of $500 million for 2010, the Congressional Budget Office projects Affordable Care Act spending of more than $2 billion in 2011 and more than $20 billion between 2010 and 2019 (see Table 3). That spending also funds a broader range of initiatives, and includes a provision for overseeing the status of the workforce and the effectiveness of programs being implemented to enhance it. The provisions are defined in Title V and the following sections highlight Subtitles as indicated:

- **Subtitle B — Workforce and workforce programs oversight:** In addition to specific actions, the Affordable Care Act calls for establishment of a framework for tracking national health care workforce statuses and the effectiveness of programs — a step that will hopefully predict and prevent unexpected shortages in the future, as well as ensure that progress with correcting current shortages is maintained. Highlights include:
  - Establishing a National Health Care Workforce Commission that will be tasked with routinely reviewing current and projected workforce needs and keeping Congress and the Administration abreast of those needs.
  - Developing a state health care workforce development grant program that will award competitive grants to state agencies for development of innovative state and local programs.
  - Establishing national and regional centers for collection and analysis of health care workforce data and reporting that data to Public Health Service Act primary care workforce programs.
- **Subtitle C — Federal loan, scholarship and loan repayment programs:** In addition to extending and increasing funding for NHSC programs, this Subtitle provides and expands numerous loan, scholarship, loan repayment and other grant programs. Highlights:
  - Easing student access to federally-funded medical school education loans, including relaxed student and medical school qualification criteria, changes to payback periods, and reduced non-compliance provisions.
  - Nurse-managed health clinics, e.g., special funding ($50 million) to support operation of nurse practitioner-managed community health centers.
- Enhancing **federally-funded nursing student loans**, including increased loan amounts and increased numbers of years during which nursing schools can establish and maintain student loan funds.
- **Loan repayment programs** for mental/behavioral health, public health students and workers, and allied health workers, as well as to physicians and nurses.

**Subtitle D — Workforce education and training support:** Specifies and funds 17 programs for enhancing and supporting health care worker educational programs. Highlights include:
- **Priority to programs that provide training in team-based approaches to care**, such as patient-centered medical home.
- **Specific support** of long-term care, geriatric, alternative dental care, community health education and promotion, and public health programs.
- **Nurse faculty** scholarship and loan repayment programs.
- **Family nurse practitioner training** — funded 12-month placements in federally qualified health centers and nurse-managed health clinics for recent primary care nurse practitioner graduates.

**Subtitle E — Existing workforce support:** Focuses on grants, scholarships and loan repayment programs for disadvantaged students and providers who commit to work as primary care providers in underserved areas. Highlights include:
- Development of a “centers of excellence” program, which will maintain a pool of minority medical school, nursing school and other health care education applicants, to facilitate their recruitment, training and academic performance support.
- Development of a Primary Care Extension Program, which funds Agency for Healthcare Research and Quality grants to state agencies that provide evidence-based treatment, disease prevention and management, and mental health care training to primary care providers.

**Subtitle F — Strengthening primary care:** Programs designed to improve access to primary care training and care delivery. Highlights include:
- A **10 percent Medicare payment bonus** to primary care practitioners and general surgeons practicing in health professional shortage areas for the next 5 years.
- Increasing **primary care residency (graduate medical education or GME) positions** via both authority for the HHS Secretary to reassign unused positions (for any specialty) for primary care residency and grants to teaching hospitals and health centers for development of new primary care residency programs.

**What is the Net Impact of the Shortage Responses?**
What is the expected impact of responses on the short- and long-term effects of the caregiver shortage? As previously noted, to date, general industry response to the caregiver shortage can only be described as having “modest success.” ARRA and Affordable Care Act programs, on the other hand, are aggressive via both provisions and funding to promote those provisions, and have the potential for significant impact.

However, ARRA and Affordable Care Act initiatives are largely focused on incentives for primary care and limited other specialties (e.g., geriatrics, dental health, mental health), enhancing educational programs and student incentives, expanding nursing opportunities — and doing all this with an overriding focus on redirecting care to underserved areas. This leaves challenges unaddressed, and some groups with special challenges, such as mid-level provider advocates who face inconsistent state regulations and physician resistance, and patient-centered medical home programs that expand the roles of already short-staffed primary care physicians. In other words, Health Reform leaves plenty of opportunity for the industry to address and solve caregiver shortage challenges. Examples follow.
Physician dissatisfaction: Physician job dissatisfaction is a growing problem. In addition to filtering back to students who are on the fence about medical school, it is impacting and threatening to impact the current physician population in other ways. One example is physicians approaching retirement age, many of whom are threatening early rather than late retirement to avoid demands such as increasing paperwork and the push for electronic health record (EHR) adoption. Influencing retirement age can have a big impact. For example, an AAMC report that examined early vs. late physician retirement (one-half at 64 and one-half at 66 vs. one-half at 68 and one-half at 66) resulted in a difference of 63,000 physicians by 2025;\(^45\) and a Colorado primary care impact report concluded that, “If primary care physicians delay retirement by 5 years, shortage reduced by 569; by 2 years by 181.”\(^46\) The other is how and where physicians are likely to practice and how they will have to be managed. One reported trend, for example, is a movement of physicians away from private practice and toward employment — at large group practices and hospital-owned clinics. The movement includes both new physicians entering practice who are looking for better lifestyles than older colleagues strapped to 24x7 commitments and physicians in existing practices, who are finding that the regulatory and financial challenges of running a practice business have become too complex.\(^47\) There has even been conjecture that this shift might lead to unionization of physician workforces and provider organization-physician union contracting.\(^48\)

Nurse dissatisfaction: Perhaps even more disconcerting is nurse dissatisfaction. Unlike the physician shortage, which is resulting from supply not keeping up with demand, the U.S. population of nurses is projected to shrink — by 50,000 between now and 2015, and 130,000 by 2020.\(^49\) A big reason is dissatisfaction — almost one-half of nurses responding to a February 2010 survey said they plan to make career path changes within the next 1 to 3 years. A frequently-cited reason was concern for their own health.\(^50\)

Nurse practitioner and other mid-level provider challenges: Increasing roles for mid-level providers (nurse practitioners, physician assistants and nurse-midwives) is a big part of just about every caregiver shortage strategy documented during the past 10 years. The industry needs them to share some of the care load traditionally limited to physicians, and in the process free physicians to take on new roles, such as patient-centered medical home managers. They are also needed to play new key roles in health reform, such as advising patients about self care and other care maintenance practices. The problem is resistance. One is state regulations, which, for example, vary significantly with regard to services nurse practitioners (NPs) can and cannot provide. This includes states that allow NPs to see and treat patients without direct physician supervision vs. those that require various levels of supervision. The same is true of prescribing privileges, all states currently support prescribing, but medications they can and cannot prescribe vary.\(^51\)

Another is active physician resistance, particularly to NP practice. It is creating a rift characterized by nurse practitioner accusations that physicians are protecting revenue sources, and physicians expressing their concerns about patient safety and care quality.\(^52\) The AMA has gone as far as publishing white papers that summarize recommended scope of practice for NPs and other mid-level providers (e.g., “AMA Scope of Practice Data Series: Nurse Practitioners”\(^53\)), and in 2009 there were more than 100 proposed bills in state legislatures as well as other legal wrangling (including suits) addressing and arguing scope of practice issues.\(^54\)

Reimbursement reform: Current reimbursement practice — payment based on volumes (of visits, tests, procedures, etc.) vs. outcomes as proposed by reform — is impacting physician shortage resolution in at least two ways. For one thing, it is preserving inequities between primary care and other specialist salaries that play such a big role in the decisions medical students make when exploring primary care vs. other residencies and careers. For another, the current emphasis on volumes is keeping practices from looking for process and other changes that
make physicians, as well as practices more efficient, i.e., reimbursement reform has the potential to not just reduce costs, but also increase caregiver workforce productivity in ways that help reduce the shortage and its impact.

**What are the Implications of the Shortage for Health Care Delivery Organizations?**
Shortage implications for health care delivery organizations (HDOs) are primarily related to the gap between the emergence of supply shortage, which has already begun, and adequate long-term solutions. It is going to take time to implement proposed solutions, such as increasing educational capacity and training more professionals, and the competitive advantage for HDOs who survive the gap is going to be addressing issues they can impact. Examples of opportunities include:

- **Primary care provider access:** One option is acquiring practices from physicians who no longer want to run their own businesses, however, some hospitals and IDNs are also pursuing strategies to bond with affiliated practices, such as offering or otherwise helping practices acquire integrated electronic health record systems (see Integrating EHRs: Hospital Trends and Strategies for Integrating EHRs within their Communities for details). A third option is developing new GME positions (residencies), which can be used to attract the best and brightest to sponsoring hospital communities.

- **Support increased scope of care for mid-level providers:** There is tremendous variety in the levels of care and authority granted by state regulations, and HDOs that can influence their states to advance the cause are positioned to use mid-levels to fill openings and attract more patients sooner as opposed to later.

- **Improve throughput:** Look for ways to improve patient and work flows — so each caregiver becomes more efficient and productive. Options include new and upgraded facilities, IT tools and good old-fashioned work flow reengineering.

- **Retain caregivers:** This includes keeping nurses and ancillary care providers, as well as physicians satisfied and on the job. One focus should be on retirement-aged professionals, whose happiness with their positions and respect can often make the difference between early and delayed retirement.

- **Alternative care solutions:** Alternative ways to deliver care are demonstrating the capacity to extend caregiver services to more patients. One of the “hottest” is group visits programs, such as offered by Harvard Vanguard Medical Associates (Boston), which are proving to be both effective and popular with patients. Others include more hospitalists, e-visits, collaboration with/development of retail clinics and telemedicine.

- **ACO and other reimbursement reform pilots:** Accountable Care Organization and other pilot programs (being sponsored by CMS and other groups) provide opportunities to experiment with and get a head start on realizing benefits from reimbursement reform.

**Conclusion**
Comments on reimbursement reform and other caregiver shortage implications for health care delivery organizations are a reminder that reducing caregiver shortages and their impacts on care delivery are an integral part of health reform. That is, successful solutions to shortage challenges require not only specific efforts to address problems and implement solutions the industry has identified, but also are very much dependent upon (as well as a part of) the overall success of industry reforms. As the AAMC noted in its November 2008 Physician Supply and Demand Report, “... simply educating and training more physicians will not be enough to address these shortages. Complex changes such as improving efficiency, reconfiguring the way some services are delivered, and making better use of our physicians will also be needed.”

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**About the Author**
Walt Zywiak is a Principal Researcher at CSC’s Emerging Practices, the applied research arm of CSC’s Healthcare Group. The author would like to acknowledge assistance from Linda Ricca, Principal, Healthcare Group; and Kerry Shannon, Partner, Planning and Clinical Operations, Healthcare Group. For more information, please contact us at 800.345.7672 or healthcaresector@csc.com.
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Healthcare Group
3170 Fairview Park Drive
Falls Church, Virginia 22042
+1.800.345.7672
healthcaresetector@csc.com

Worldwide CSC Headquarters
The Americas
3170 Fairview Park Drive
Falls Church, Virginia 22042
United States
+1.703.876.1000

Europe, Middle East, Africa
Royal Pavilion
Wellesley Road
Aldershot, Hampshire GU11 1PZ
United Kingdom
+44(0)1252.534000

Australia
26 Talavera Road
Macquarie Park, NSW 2113
Australia
+61(0)29034.3000

Asia
20 Anson Road #11-01
Twenty Anson
Singapore 079912
Republic of Singapore
+65.6221.9095

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