Deaf and hard-of-hearing (D/HH) individuals have made significant gains in many employment sectors since the passage of the Rehabilitation Act of 1973 (Section 504) and the Americans with Disabilities Act of 1990, as amended by the Americans with Disabilities Amendments Act of 2008. However, data from the U.S. Census Bureau show that only 5.8% of D/HH persons who are in the labor force work in the health care industry compared to 9.7% of hearing workers. In addition, data from the American Community Survey indicate that almost 25% of these 5.8% D/HH individuals are employed as aides in nursing, psychiatric, home health, and personal care areas. Almost 69% of these workers have less than a baccalaureate degree compared to 59% for hearing persons employed in similar jobs. This means that, not only are proportionally fewer D/HH persons employed in the health care professions, but when they are employed, they are in positions that require less education. Generally, D/HH workers are underrepresented in those health care occupations requiring higher degrees and overrepresented in those occupations requiring less education.

Unfortunately, stories of unsuccessful attempts by D/HH individuals to enter health care training programs and jobs are legion. A variety of reasons exist for this situation, including the lack of adequate educational opportunities (resulting in a lack of necessary academic skill development) for D/HH students interested in health care careers, as well as prevailing misunderstandings held by the general population and health care gatekeepers in education and industry about the potential for D/HH individuals to succeed. These misconceptions have contributed to lowered career expectations for these individuals; the perception of prohibitive communication barriers for persons who are D/HH; and the belief that D/HH health care providers cannot perform competently with hearing patients, clientele, or coworkers. These obstacles create the perception that potential D/HH health care workers are burdens instead of positive contributors in addressing national health care needs. These obstacles also contribute to training and employment disparities for D/HH individuals compared to the general population. Building Pathways to Health Care Careers for the Deaf and Hard-of-Hearing Community: Final Report is a call to action to rectify the historic underrepresentation and underemployment of D/HH individuals in the health care industry. This call comes amidst dramatic projections regarding the need for increasing the health care workforce if our nation is to meet the growing health care demands of an aging and diverse citizenry. It also comes as the U.S. Department of Labor is actively urging the health care industry to reverse its record of poor hiring practices for persons with disabilities by increasing employment opportunities for this group.

This Final Report represents the culmination of the charge given to the Task Force on Health Care Careers for the Deaf and Hard-of-Hearing Community, a national body comprised of deaf, hard-of-hearing, and hearing professionals representing postsecondary institutions and health care organizations throughout the country. The Task Force was established in June 2010 by
four partners: the National Technical Institute for the Deaf at Rochester Institute of Technology, Gallaudet University, the National Center for Deaf Health Research at the University of Rochester Medical Center, and the Rochester General Health System. Its charge was to make recommendations that will increase career opportunities for D/HH individuals to enter and succeed in health care fields, countering an historic underrepresentation in health care careers, particularly in those requiring advanced education and training. The Task Force recommendations are guided by the following vision:

The vision of the Task Force is to ensure that D/HH individuals have expanded career opportunities in the health care field. The Task Force envisions a health care career “pipeline” for D/HH individuals that will facilitate entry to educational and career opportunities. This vision requires an astute understanding of the issues associated with the financial burdens of accessibility costs often incurred by educational institutions, health care facilities, and D/HH individuals themselves. It is a vision linked to ever-advancing technology that will enhance communication access and ensure full opportunity for D/HH individuals to develop the academic skills and experiences they need to gain entry to health care-related training programs. It also encompasses broad-based attitudinal changes needed to welcome D/HH individuals into training programs and employment settings without seeing hearing loss as a significant obstacle to employee productivity. Realizing this vision will require long-term commitment, ongoing involvement, and purposeful advocacy by the Task Force’s four major sponsors, educational institutions throughout the country involved in health care training for D/HH students, state and federal agencies, health care employers, disability advocacy groups, and professional health care organizations. Progress will be grounded in our national commitment to equal educational and employment opportunities for all citizens, optimal economic contribution to society by each and every citizen, and workforce diversity.

**Task Force Activities**

The Task Force held nine meetings between September 2010 and March 2012. These meetings focused on: (1) reviewing educational and occupational demographics of the D/HH population; (2) collecting, collating, and summarizing information from three focus groups, 49 individual interviews, and significant commentaries from various constituencies regarding access to health care professions, sources of funding to support programming, and application of technology to support accommodations in education and the workplace; and (3) developing a set of interim recommendations as well as a comprehensive Final Report. In June 2011, as required by its charge (see Appendix V, p. 112), the Task Force published its preliminary findings and short-term recommendations that could be undertaken within a 12-month period in *Building Pathways to Health Care Careers for the Deaf and Hard-of-Hearing Community: Interim Report* (Task Force on Health Care Careers for the Deaf and Hard-of-Hearing Community, 2011). (See Appendix VI, p. 114 for a summary.) Recommendations were organized within the following categories:
Maximizing information dissemination regarding health care careers for the D/HH community intended for D/HH students, their parents, educators, and other professionals working with D/HH individuals, gatekeepers in educational institutions, and health care employers.

Enhancing educational curricula and training programs to assist D/HH individuals in preparing for and obtaining employment in health care professions.

Creating employer awareness about the D/HH workforce, how access services and technological innovations can lower communication barriers, and how health care organizations can support the success of D/HH employees.

Promoting improved access services for D/HH individuals within school and workplace settings by supporting the identification and development of best practices with respect to specialized interpreting for D/HH individuals in health care fields and the increasing array of available technological applications.

Initiating contact with relevant governmental agencies and creating a sponsored research/policy development committee to ensure that the language of “eligibility criteria” for specific funding opportunities relevant to Task Force recommendations is inclusive of D/HH individuals and the institutions that serve them. The sponsored research/policy committee would ensure relevant research activity regarding instructional and curricular innovation related to health care preparation and professional development; technological advancements in the provision of access services related to health care preparation; and employment outcomes and career trajectories related to health care careers.

These interim recommendations represent a critical intermediate step in fulfilling the Task Force’s charge of increasing the numbers and success of D/HH individuals in health care careers. They also set the foundation for the more comprehensive Final Report recommendations included in this document. Building Pathways to Health Care Careers for the Deaf and Hard-of-Hearing Community: Final Report, intended for the four partnering institutions as well as for a broader audience of government agencies, educational institutions, and policy makers, envisions a 10-year action plan to achieve the stated goals. The goals and implementation recommendations focus on Ensuring High Quality and Innovative Access Services, Re-Envisioning Educational Experiences and Preparation, and Assuring Progress for D/HH individuals in Health Care Careers. To realize these goals and recommendations, the Task Force proposes four organizational engines that will anchor the 10-year action plan:

- The National Center on Access Services Innovation and Consultation for Deaf and Hard-of-Hearing Health Care Students and Professionals (NCAS) will be a national information, research, and development resource supporting the continuing
growth of innovative access services and assistive technologies tailored specifically to D/HH students and professionals in health care.

- **The Consortium Center of Excellence (CCOE) in Health Care Careers for Deaf and Hard-of-Hearing Students** will be a national educational resource for degree programs, internship/practicum experiences for D/HH individuals, educational outreach, technical assistance, and research programs.

- **The Sponsored Research/Policy Development Committee** will be a collaboration among the four founding institutions focused on externally funded research and the resulting implications for policy development related, but not limited to, health care education, employment, and career advancement for D/HH individuals.

- **The National Advisory Group on Health Care Careers for Deaf and Hard-of-Hearing Individuals (NAGHCC)** will be a national entity supported by the four founding institutions and entrusted with providing the necessary focus to the founding institutions so that the short- and long-term recommendations are realized.

### Ensuring High Quality and Innovative Access Services

D/HH individuals still confront challenges that prevent them from having full access to health care professions. Among these are ensuring that the supply of interpreters who specialize in health care keeps up with demand as more D/HH individuals enter this field; minimizing institutional disincentives for educating and hiring D/HH individuals due to the cost of access services; and vigorously pursuing emerging technologies that can be used to provide required access services.

In the *Interim Report*, the Task Force recommended setting up a consulting health care access and communication information dissemination service, a technology lab for assessing assistive devices, and an equipment loan program for D/HH individuals who can test the suitability of specific equipment for educational or employment needs. As elaborated in this *Final Report*, this service should be formalized as a national consultation/technology development resource called **The National Center on Access Services Innovation and Consultation for Deaf and Hard-of-Hearing Health Care Students and Professionals (NCAS)**. The functions of this National Center will be to:

1. Provide guidance and consultation about interpreting services for D/HH students, D/HH employees, and employers in medical, health, and bioscience fields;

2. Provide consultation and information regarding currently available access services and assistive technologies in light of individual needs;
3. Provide guidance for D/HH students and professionals and the organizations that support them in crafting solutions for providing required access services and assistive technologies;

4. Sponsor partnerships among postsecondary institutions, private industry, and the federal government in the development, testing, and commercialization of emergent access services and assistive technologies;

5. Provide guidance and consultation for universal design compliance and principles for existing medical and health technologies that apply to D/HH individuals;

6. Generate certification standards and procedures, in collaboration with appropriate professional associations, regarding the provision of access. This resource also would generate certification standards and procedures regarding the provision of access services by interpreters and real-time, computer-aided transcribers in educational and professional health care settings, as well as technical standards regarding the capabilities of assistive technologies.

To address the critical funding issues related to access services, the Task Force advocates that the four founding institutions develop and demonstrate successful strategies for funding required access services and assistive technologies so as to minimize institutional disincentives for educating and hiring D/HH individuals. These strategies will be shared nationally with other programs working with D/HH students and professionals in health care areas. Among the possible strategies to be investigated are:

1. Establishing a collective compliance model similar to the Minneapolis/St. Paul Twin Cities Hospital Interpreter Consortium, which developed a local funding pool to divide communication access costs among stakeholders;

2. Partnering with legislators and policymakers to expand tax credits and deductions available for institutions and companies who hire D/HH health care workers;

3. Seeking the enactment of legislation creating a funding mechanism for Video Remote Interpreting (VRI) services parallel to the funding mechanism used for Video Relay Services;

4. Developing a project to test the viability of using VRI services at health, scientific, and educational centers;

5. Collaborating with organizations such as the National Association of the Deaf, Hearing Loss Association of America, and other organizations to set up a funding
commission to investigate the feasibility of centralized access funds to cover costs considered to be “beyond burdensome” by institutions and employers;

6. Promoting the enactment of a requirement that all federal and state health, science, and engineering-related research grants include supplemental funds to ensure adequate accommodations for D/HH students, employees, and professionals;

7. Working with the Office of Vocational Rehabilitation to provide access services funding for D/HH individuals enrolled in professional health care education programs;

8. Promoting public and employer awareness about ADA-established responsibilities to provide accommodations to employees who are D/HH.

Re-Envisioning Educational Experiences and Preparation
State and federal efforts in support of Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 have enabled D/HH students to attend the schools of their choice and obtain support. As a result, over the 38 years between 1972 and 2010, the percentage of D/HH individuals attending or graduating from college has increased by approximately 400%.

While these improvements are cause for celebration, the numbers of D/HH students pursuing bachelor’s degrees continue to show disparities compared to the general population. In 2009, 60% of D/HH high school graduates attended some form of postsecondary education. Of these students, 57% attended two-year or less than two-year schools. This compares to 48% for hearing students. Only approximately 33% of D/HH students were pursuing bachelor’s degrees compared to 47% of hearing students. Although comparable proportions of D/HH and hearing students pursue health care majors (10%-12%), there is a striking disparity in the attainment of terminal degrees. Further investigation shows that 63% of D/HH students majoring in health care fields pursued degrees or certificates requiring two years or less of preparation. In comparison, only 39% of hearing students in health care fields were studying at the two-year level. Clearly, these data demonstrate that D/HH individuals need better access to, increased awareness of, and better preparation for education and training opportunities that will enable them to pursue a wider spectrum of job opportunities in the health care and biomedical workforces.

The Task Force envisions that by 2022, D/HH students throughout the nation seeking postsecondary education in health care-related fields will have greatly expanded options, anchored by a Consortium Center of Excellence (CCOE) in Health Care Careers for Deaf and Hard-of-Hearing Students. The CCOE will be a national educational resource entailing degree programs as well as internship/practicum experiences for D/HH individuals pursuing a wide range of health care professions, with multiple entrance and exit points spanning associate-level degrees through master’s degrees and advanced graduate-level degrees. It will
conduct research on program effectiveness and also provide educational outreach regarding academic preparation, career information related to health care fields, employer awareness programs, and technical assistance to other postsecondary institutions throughout the country serving D/HH individuals in health care majors. The CCOE’s six goals will be to:

1. **Promote career awareness and academic skills development related to health care careers for middle and high school students;**

2. **Provide postsecondary educational preparation at a variety of degree and training levels;**

3. **Provide assistance to postsecondary institutions regarding policies and practices that ensure that admissions procedures for health care majors include fair consideration of D/HH applicants in conformance with ADA requirements;**

4. **Provide assistance to other postsecondary institutions serving D/HH individuals in health care majors on effective strategies for supporting the effective learning of D/HH students in health care educational settings;**

5. **Advocate for the linking of professional licensing and credentialing criteria to functional standards of professional competence as opposed to standards assuming or requiring a particular set of sensory or linguistic capabilities;**

6. **Enhance employer practices to support the success of D/HH health care employees.**

Specifically, the Task Force recommends that:

- The four founding institutions explore securing support for extending Centers of Excellence (COE) to include D/HH representation through the Consortium Center of Excellence (CCOE) in Health Care Careers, which might include Gallaudet University, Rochester Institute of Technology / National Technical Institute for the Deaf, the University of Rochester, Rochester General Health System, and other local and national partners as designated. Specifically, the recommendation is to amend legislation authorizing the COE program to include Centers of Excellence for D/HH students comparable to the COE for certain Historically Black Colleges and Universities, Hispanic Centers of Excellence, and Native American Centers of Excellence; and/or to establish a separate COE program for schools serving D/HH students comparable to the current COE program as legislated.

- The CCOE work with institutions across the country to develop complementary programs and “pipelines” that will facilitate increased access to health career options for D/HH individuals. The CCOE will offer technical assistance to other national
educational institutions regarding the preparation of D/HH individuals for health care professions. This assistance will include, but not be limited to, best practices in the development of Science, Technology, Engineering, and Mathematics (STEM) skills, academic support services, retention practices, accessibility options, and appropriate research findings.

- The CCOE take the lead in modeling admissions processes for D/HH individuals that minimize bias and serve as a national example for other institutions around the country.

- The CCOE forge partnerships with the National Association of Nurses with Disabilities, Association of Medical Professionals with Hearing Losses, the American Medical Association, the American Psychological Association, the National Dental Association, and other pertinent national groups that may deal with bias and inequity issues in the licensing and credentialing of health care providers. These organizations can assist with developing specific strategies to encourage all health care educational institutions to re-evaluate and revise their standards in a functional manner.

- The CCOE gather and disseminate “best practice” experiences of employers who successfully integrate members of the D/HH community into health care careers and create a positive work environment.

- The CCOE, in collaboration with the already established Sponsored Research/Policy Development Committee, will:

  Encourage the development of innovative educational programs and policies to improve academic readiness skills to facilitate the ability of D/HH students to enter health care professions;

  Conduct and foster research and development of technologies, practices, and innovations that further the education of D/HH individuals in health care careers;
  Maintain a database to assess and document the impact of practices, technologies, and CCOE-sponsored initiatives;

  Collect research data on the design of educational programs using functional standards (as opposed to organic-based standards) to provide an evidence base for funding applications and develop strategies for collecting research data on the effectiveness of the change to more functional standards;
Address basic research questions relative to pedagogy, innovative access services, and assessment practices relative to D/HH persons in health care fields.

Assuring Progress in Increasing the Number and Success of D/HH Individuals in Health Care Fields
The recommendations in this section emphasize strategies designed to ensure that D/HH individuals continue to advance within the health care system and that the initiatives undertaken by the four founding institutions make a sustained difference in the career trajectory of D/HH persons. While the other recommendations have addressed policy and research aspects for access and educational initiatives, these recommendations are focused on facilitating the coordination of all Task Force implementation recommendations.

By 2012-13, a National Advisory Group on Health Care Careers for Deaf and Hard-of-Hearing Individuals (NAGHCC) will be formed through a partnership among the founding institutions and an appropriate national non-profit professional advocacy organization. This Group will include representation from other postsecondary institutions, the health care industry, and federal and state agencies. The Group’s focus will be to advance the Task Force’s long-term recommendations with respect to education, research, communication access services and related technological innovation, employer and public awareness, and policy reform. In addition, it will advise the four founding institutions on progress toward the short- and long-term recommendations, and assist, where possible, with advocacy in funding and policy support from local, state, and federal governments in carrying out the Task Force’s recommendations. The National Advisory Group on Health Care Careers will receive regular reports from all existing entities responsible for implementation of Task Force recommendations, namely the National Center on Access Services Innovation and Consultation for Deaf and Hard-of-Hearing Health Care Students and Professionals, the Consortium Center of Excellence in Health Care Careers for Deaf and Hard-of-Hearing Students, and the Sponsored Research/Policy Development Committee; and will work closely with appropriate staff at the four institutions to advise on best strategies for accomplishing Vision 2022.
Conclusion
Throughout its 18 months of research, inquiry, and discussion, the Task Force repeatedly saw the limitations and barriers often imposed on D/HH individuals in the health care fields. In spite of these obstacles, some D/HH individuals have succeeded as medical doctors, nurse practitioners, lab technicians, medical records technicians, pharmacists, dentists, oral hygienists, research scientists, and psychologists, among others. These success stories do not mirror the experience of most D/HH individuals. They do, however, reveal the possibilities if we create opportunities for this population. The Vision, Goals, and Implementation Recommendations of this Final Report, together with the Task Force’s Interim Report, propose a paradigm shift that will culminate in increasing the diversity of our national workforce in health care fields. More important, these initiatives ensure the fullest economic return to society on the part of D/HH citizens and uphold our national commitments to civil rights and social justice.