The Future of Audiology

Presented by:

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Moderated by:

Carolyn Smaka, Au.D., Editor-in-Chief, AudiologyOnline

Expert e-Seminar

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Demand and Supply: Meeting future workforce needs

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Audiology Consultants, Inc

The Good News

Increased recognition for Audiology

High demand for services
Two Decades of Success

- Dept. of Labor
- Fed Employee Health Benefit Plans, Dept. of Veteran’s Affairs, Private 3rd Party Insurance
- State License Laws
- CMS: Medicare and Medicaid
- U.S. Department of Education

The Good News

- Increased recognition for Audiology
- High demand for services
U.S. Hearing Loss Population has **doubled since 1984** and **will reach 53 million by 2050**

(Kochkin, 2005)

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**US Birth rates**

The United States Census Bureau defines the demographic birth boom as between 1946 and 1964 (red).
Challenges

- Workforce to meet demand
- Limited capacity to provide services

Workforce Projections for Audiology
- Internal
  - Consolidation within industry
  - Networking of practices
- External
  - Population demographics
  - Changes in insurance regulation (ACA)
  - Accountable care organizations
  - Cost versus value innovation
  - Use of non-physician personnel

### Older Population Expected to Double by 2050

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americans aged 65 and older</td>
<td>13%</td>
<td>35%</td>
</tr>
</tbody>
</table>

| World population, aged 65 and older | 2011 (546 million) | 2050 (1.56 billion) |

Source: U.S. Census Bureau
Current hearing aid delivery system

Health Reform Will Cut Number of Uninsured Dramatically

Number of non-elderly uninsured

60 million

*If all states institute the Medicaid expansion in 2014 as CBO had assumed prior to the Supreme Court decision. Source: Congressional Budget Office, March 2012

Center on Budget and Policy Priorities | cbpp.org
Health System Reform

- Payment system reform: change in the way fees are negotiated and paid
- Delivery system reform: change in the way services are organized and made available
- PPACA Title V: Workforce needs
  - Emphasis on primary care
  - Workforce commission

Demand for hearing care services will be going up!

Do we have enough audiologists to meet demand?

- Growing population (U.S. and globally)
- Increased number of persons with hearing loss
- Expanded number of insured
- Shortage of physician providers
- Membership on healthcare teams
Modeling Workforce Projections

- U.S. Department of Health and Human Services Physician Supply Model
- AAMC Center for Workforce Studies
- Projections versus predictions

Audiologist Supply Model
Adapted from U.S. Department of Health and Human Services
Current supply in hearing healthcare

<table>
<thead>
<tr>
<th>Licensed Audiologists</th>
<th>16,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated FTE</td>
<td>12,000</td>
</tr>
<tr>
<td>Clinical Practice</td>
<td>9,000</td>
</tr>
</tbody>
</table>

Table 21
Total Number of Degrees Granted by Area of Study and Degree Type 2010-2011 Academic Year

<table>
<thead>
<tr>
<th>Area of Study</th>
<th>Degree</th>
<th>Number of Existing Programs</th>
<th>Number of Programs Responding</th>
<th>Total Number of Degrees Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Undergraduate</td>
<td>259</td>
<td>213</td>
<td>8,168</td>
</tr>
<tr>
<td>Audiology</td>
<td>Clinical Doctorate: Entry Level</td>
<td>75</td>
<td>71</td>
<td>554</td>
</tr>
</tbody>
</table>

Table 15
Total Graduate Enrollment by Area of Study and Degree Type 2010-2011 Academic Year

<table>
<thead>
<tr>
<th>Area of Study</th>
<th>Degree</th>
<th>Number of Existing Programs</th>
<th>Number of Programs Responding</th>
<th>Total Graduate Enrollments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audiology</td>
<td>Clinical Doctorate: Entry Level</td>
<td>75</td>
<td>71</td>
<td>2,386</td>
</tr>
<tr>
<td>Profession</td>
<td># Programs</td>
<td># Students</td>
<td># Grad/Year</td>
<td>Mean # Students/class</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>-------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Chiropractic</td>
<td>17</td>
<td>9,800</td>
<td>2,450</td>
<td>144</td>
</tr>
<tr>
<td>Optometry</td>
<td>19</td>
<td>5,800</td>
<td>1,450</td>
<td>76</td>
</tr>
<tr>
<td>Osteopathy</td>
<td>23</td>
<td>13,406</td>
<td>3,351</td>
<td>145</td>
</tr>
<tr>
<td>Dentistry</td>
<td>56</td>
<td>22,400</td>
<td>5,600</td>
<td>100</td>
</tr>
<tr>
<td>Audiology</td>
<td>75</td>
<td>2,400</td>
<td>600</td>
<td>8</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>105</td>
<td>44,000</td>
<td>11,000</td>
<td>104</td>
</tr>
<tr>
<td>Medicine</td>
<td>125</td>
<td>69,600</td>
<td>17,400</td>
<td>139</td>
</tr>
</tbody>
</table>

Figure 3: Average Number of Graduates per Year

Adapted from Windmill and Freeman, 2011
How many EXITING the workforce?

- Retirement
- Death
- Disability
- Voluntary separation
- Return to home countries

Options for exiting
<table>
<thead>
<tr>
<th>Age Range</th>
<th>Percent*</th>
<th>Total Audiologists</th>
<th>Adjusted FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;30 years</td>
<td>11%</td>
<td>1770</td>
<td>1416</td>
</tr>
<tr>
<td>31-40</td>
<td>26%</td>
<td>4185</td>
<td>3348</td>
</tr>
<tr>
<td>41-50</td>
<td>25%</td>
<td>4024</td>
<td>3219</td>
</tr>
<tr>
<td>51-60</td>
<td>26%</td>
<td>4185</td>
<td>3348</td>
</tr>
<tr>
<td>&gt;60 years</td>
<td>12%</td>
<td>1931</td>
<td>1545</td>
</tr>
</tbody>
</table>

* Source: AAA 2008 Member Survey

Age distribution of audiologists

Approximately 400 per year retiring over next 30 years
Interesting development...

- Approximately 400 audiologists per year in decade 41-50
- The average number of master’s degree graduates between 1984-93 = 683
- Attrition rate = 41%

Audiologist Supply Model

New Graduates

Audiologists Supply Current Year

Audiologists Remaining Active

Audiologists Supply Current Year +1

Retirement, Death, Disability, PLUS Attrition
### Audiologist Supply Model

<table>
<thead>
<tr>
<th>Description</th>
<th>Number/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number entering workforce</td>
<td>600</td>
</tr>
<tr>
<td>Historical attrition (40%)</td>
<td>(240)</td>
</tr>
<tr>
<td>Net gain in workforce</td>
<td>360</td>
</tr>
<tr>
<td>Exiting the workforce</td>
<td>400</td>
</tr>
<tr>
<td>Total gain (loss) to workforce</td>
<td>(40)</td>
</tr>
</tbody>
</table>

#### Impact of Au.D. degree: Reduced attrition?

- **Baseline Supply**
- **Attrition 20%**

![Graph showing number of audiologists over years with baseline supply and attrition data](chart.png)
How many new audiologists do we need in the future?
Shift in population

- Redistribution by age: baby boomers
- Largest demographic served by audiologists
- Scenarios
  - Equal distribution (33% / 33% / 33%)
  - Geriatric moderate (50% / 25% / 25%)
  - Geriatric heavy (70% / 15% / 15%)
  - Impact of insurance reform (PPACA)
Additional Factors That Impact Demand and Supply

- Efficiency/capacity
  - Technological capabilities
  - Advances in diagnosis and treatment
- Health insurance coverage
- Practice pattern changes
- Utilization patterns

Internal Changes in Workforce Capacity

- Demographic changes
- Work hours, sustained over a lifetime
- Impact on total FTEs
- Worklife
Is increased supply the solution to increased demand?

• Improved efficiencies in practice
  – Technological advancements
  – Alternative service delivery models
• Practicing at top of license
  – Non-audiology personnel
  – Disease management
  – Prevention
Demand and Supply?

• Can we expect universities to meet demand through increased supply?
• How can we use technology to affect capacity?
• Are alternative delivery models possible? And how will that affect audiology service delivery systems?
• How can we work smarter and more efficiently?

Our Goals

- **Meet** projected patient demands
- **Reduce** attrition
- **Increase** capacity of providers
- **Improve** our efficiency

These are not mutually exclusive
Despite our best efforts to build an autonomous profession and excellent career opportunities...

We still have...

- **41% attrition**
  
  Windmill and Freemans, 2011

- **44% doubting**
  
  Bennett and Steiger, 2010

- **10-20% drop out**
  
  CAPCSRO: 2008; NES-CRD (2012)
We do not
Set up our graduates
For success

Too many
females?

Poor revenue
generation
opportunities?

Poor return
on educational
investment?

Not a profession that
Differentiates ourselves

Graduate admission
requirements
inadequate?

Poor job recruiting
and educating?

Chaos Breeds Opportunity

2004 U.S. Hearing Care Distribution
Segments (% of total provider location
universe of 11,000 outlets), estimated

2011 U.S. Hearing Care Distribution
Segments (% of total provider location
universe of 12,000 outlets), estimated

http://www.audiologyonline.com/articles/we-still-asleep-at-wheel-809
This Should be Our Wake Up Call for Professional Differentiation

Learning from other Professions

Focus on Patient Centered Care
<table>
<thead>
<tr>
<th>Profession</th>
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*Learning from other Professions*

“Our universities, through the students they train, are the key to our future. They control excellence, set the stage for practice of the next generation, demonstrate professional competency, and instill professional culture.”

Dr. Lucille Beck  
Keynote Address  
AAA Gold Standards Educational Conference 2009
Demographics of Au.D. Programs
(Based on 68 Au.D. Programs Responding)

<table>
<thead>
<tr>
<th>Total Applications: 4,404</th>
<th>Total Admits: 1,791</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Students apply to 4.2 programs; range: 1-11; 21% applied to 1 program)</td>
<td>Admits/program: 26</td>
</tr>
<tr>
<td>Apps/Program: 65</td>
<td>65-70% students select program based on tuition costs</td>
</tr>
<tr>
<td>Projected Applicant Pool: 1,152*</td>
<td>Degrees/program: 7.3</td>
</tr>
<tr>
<td>*Up 25% from 2010-11</td>
<td>Attrition During Program: ~27%</td>
</tr>
<tr>
<td>Enrollment: 678</td>
<td>89% report CSD undergrad major (CAPCSD, 2008)</td>
</tr>
<tr>
<td>Enrollment/program: 10</td>
<td>On avg., non-CSD adds one semester to program</td>
</tr>
<tr>
<td>Degrees Granted: 494</td>
<td></td>
</tr>
</tbody>
</table>

Learning From Other Professions
Learning from other Professions

• Optometry:
  – Prescription Release Rule: Must provide prescription to patient (FTC, 1980)
  – Learned to offer eyewear at a fair price, increased eyewear selection and options, focused on providing quality customer service and patient centered treatment programs.
  – 88% of all consumers report having a family eye specialist whom they see for appointments regularly.

Learning from other Professions

• Dentists:
  – Effective patient recall systems and routine revisits a standard of dental care.
  – 500m visits made to dentists annually.
  – Integrated revenue generating support personnel in their practices.
  – Focus on continuous quality patient care and patient centered treatment programs.
Learning from other Professions

• Veterinarians
  – Yes, even vets who sell products and services.
  – Focus on routine patient examinations and care.
  – Focus on management and treatment and this helps manage the “sticker shock” that often is associated with pet services.

Lessons Learned from other Professions

• Patient Centered Treatment Programs

• Do not make a product the “center of the universe”,
  – Offer on-going patient treatment services.

• Instead of selling a product, sell Patient Centered Management and Treatment of which products may be an integral part.
Responding to Predicted Demographics: Practice Efficiencies and the Role of Assistants

AAA 2010 Position Statement

“...audiology assistants are important to the future of this profession and they can provide valuable support to audiologists ...”
Use of Audiology Assistants in practice

- **2008** (Freeman, 2008)
- **25%**

- **2001** (Hamill and Freeman, 2001)
- **24%**

Assistants/Practitioner

<table>
<thead>
<tr>
<th></th>
<th>Audiology</th>
<th>Veterinary</th>
<th>Dentistry</th>
<th>Optometry</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25 assistants/1.0 staff</td>
<td>2.4 techs/4.7 staff</td>
<td>2 assistants/5 staff</td>
<td>4 tech and staff</td>
<td></td>
</tr>
</tbody>
</table>

Average assistants and staff per practitioner (Data from professional associations and publications)
Note: in Dentistry, of revenue produced by hygienists, 25% goes to expenses.
Audiology Assistant Responsibilities
(Ramos, 2013)

Diagnostic Audiology

• Completes patient history, documentation and otoscopy
• Conducts technical component of audiologic testing
  – ABR
  – ECOG
  – VNG
  – VEMP
• No interpretation of tests

Table 1.
In 2004, 4780 “walk-in” visits were recorded. This table details the chief concern of those patients.

<table>
<thead>
<tr>
<th>Patients</th>
<th>4780</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aids in warranty</td>
<td>2517</td>
</tr>
<tr>
<td>Minor repair</td>
<td>729</td>
</tr>
<tr>
<td>Minor adjustment</td>
<td>630</td>
</tr>
<tr>
<td>Clean aid</td>
<td>1578</td>
</tr>
<tr>
<td>Dead aid/clean</td>
<td>349</td>
</tr>
<tr>
<td>Dead aid/sent out</td>
<td>373</td>
</tr>
<tr>
<td>Ear lavage</td>
<td>282</td>
</tr>
<tr>
<td>Ear impressions</td>
<td>173</td>
</tr>
<tr>
<td>Feedback</td>
<td>97</td>
</tr>
<tr>
<td>Modify shell/mold</td>
<td>223</td>
</tr>
<tr>
<td>Counsel patient</td>
<td>346</td>
</tr>
</tbody>
</table>
Audiology Assistant Responsibilities (Ramos, 2013)

Hearing Aids

• Non-revenue producing functions such as:
  – HA Repairs, programming and fitting issues
  – Pickup of hearing aid after purchase and/or repair
  – Discussion of contract and warranty
  – Care, use and maintenance
  – Paperwork component of completing a hearing aid sale
    • Initial order, order tracking and communication with vendor
    • Inventory management
    • Warranty/repairs

• Prior to audiology assistants
  – 25% - 50% of audiologist daily appointments spent on non-revenue producing hearing aid activities

“We must reduce the cost ... without hurting the patient... by making services simpler, ... figuring out a way to do the same thing—or even something better—for the patient, while reducing the cost of delivery...”

Donald M. Berwick, MD, President Emeritus and Senior Fellow, Institute for Healthcare Improvement
“The use of non-physician personnel will help control the cost of care”

Conclusion of Harvard Forum on Healthcare Innovation sponsored by the Harvard U. School of Business and School of Medicine
Choluteca River Bridge
Honduras

The River Moved…
The Bridge to Nowhere
Thank you for Listening

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