Beyond the Audiology Clinic: Innovations and Possibilities of Connected Health

NCRAR, Portland
September 20, 2013
Changing Trends in Hearing Healthcare Delivery

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The Disentanglement and Unraveling of Hearing Healthcare Delivery

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POSSIBLE ALTERNATIVE HEARING AID DISTRIBUTION SYSTEMS

Classic Distribution System
- Manufacturer
  - Audiologist / HIS
  - End Consumer
  - Health professional involved

Direct Distribution / Own Stores
- Manufacturer
  - Flagship store / own shops
  - End Consumer
  - Health professional involved

Online Direct Distribution
- Manufacturer
  - PSAP
  - End Consumer
  - No health professional involved

Semi-Direct Distribution via MD
- Manufacturer
  - ENT / GP
  - Local hearing professional
  - Health professional involved

Online Retailer with Local Cooperation
- Manufacturer
  - Online Retailer / Wholesale
  - End Consumer
  - Health professional involved

Online Retailer w/o Local Cooperation
- Manufacturer
  - Online Retailer / Wholesale
  - End Consumer
  - Health professional not necessarily involved
Converging Forces

• The Manufacturer’s Business
• Retail Network Expansion
• Co-op Growth
• Warehouse Invasion
• Internet Explosion
• PSAPs
• Savvy Consumers
The Business of Hearing Aid Manufacturing
Hearing Aid Sales 2012

- Net Total Sales in US: 2,852,535 units
- 20% ‘issued’ through VA
- Annual Growth for 2002 - 2012: 2%-3%

- Potential Market: 34 million (Kotchkin, HIA)
  - Mild, S/N high frequency losses – not interested in HAs
- Realistic Market: Estimated at 18 – 20 million
  - (B. Edwards; A. Amlani)
After the President’s acknowledgement of hearing aid use, unit sales soared by 30% in the 4th quarter of 1983.

In fact, 1983’s year-on-year growth rate of 20.5% represents an all-time record in sales (HIA).

President Reagan and Nanette Fabray met with BHI Director Joe Rizzo in the White House in 1983.

The Insider, Sept. 5th, 2013
Full Service Vendors

- Extensive hearing aid line
- Special instruments
- Ear care supplies - Batteries
- Marketing plans and programs
- Training support
- Software, Internet, Website
- Innovative buying discounts
- Line of credit available

Increased Revenues
Mergers

Mergers: Necessary for small companies to survive

Bigger, Stronger, Better

- Economy of Scale
- Reduce Expenses
- Reduce Personnel
- Share R & D
- Pool Resources and Expertise
- Share Marketing Programs
- Ride Out Market Cycles
- Increased Revenues

Phonak - Unitron
Oticon - Bernafon
Starkey - Rastronic
Manufacturer Consolidation

1990 - 70
2000 - 30
2009 - 10
2013 - 6

Increased Revenues
2013 “The Big 6”

Oticon
Phonak
Siemens
Starkey
GN Resound
Widex

90+% of total US market
Hearing Aid Industry Consolidation by Brand

**Starkey (USA):** Starkey, Micro-Tech, NuEar, Audibel

**GN ReSound (DK):** ReSound, Beltone, Danavox, Philips, Interton

**William Demant Holding (DK):** Oticon, Bernafon, Sonic Innov

**Siemens (GER):** Rexton, A&M Hear

**Sonova (CH):** Phonak, Unitron, Argosy, Lori Medical, Newport Audiol, Advance Bionics, Lyric, Hansatron, Hearing Planet, Novasa

**Amplifon (IT):** Sonus, Miracle Ear
Manufacturer Competition

- The Big Six control the chipsets with > 250 patents
- License their use to all others
- Controls production and price competition
- Limits new start-up players
“R & D teams have a tendency to confuse product features with customer benefits… assuming that more features equals more benefits”

“The overcrowding of benefits reduces the marketing to mush”
Advanced H.A. Features

- Directional microphone
- Feedback suppression
- Digital Noise Reduction
- Low-battery indicator
- Power-on delay
- Wax guard
- Programmability
- Tinnitus masking
- First-fit algorithm
- Data logging

- AGC – Compression
- Direct Audio Input
- Bluetooth
- Telecoil
- Waterproof
- Multi-memory
- Extended battery life
- Color choices
- Automatic & seamless switching circuits
"Hearing aid technology has become quite similar over the last couple of years, and they all make basically the same product."
Manufacturer’s Economic Forecast

- Face a “slow growth” future
- Recognize changing distribution system
- Slowed a bit in chasing market share
- Promote direct sales
  - Proprietary retail outlets and internet
  - Eliminate the “middle men” in favor of consolidators
Retail Network Expansion
“...hearing aid manufacturers are accelerating their ‘forward integration’.....in a race to exclude competitors from access to distribution.”

Merrill – Lynch Analyst
## Retail Network Outlets

<table>
<thead>
<tr>
<th>Brand</th>
<th>Network Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hear USA</td>
<td>180 owned; 2000 netwk</td>
</tr>
<tr>
<td>Amplifon</td>
<td>5000 in “family” offices</td>
</tr>
<tr>
<td>Sonus</td>
<td>115</td>
</tr>
<tr>
<td>Miracle Ear</td>
<td>1200</td>
</tr>
<tr>
<td>HearPO</td>
<td>2500</td>
</tr>
<tr>
<td>Elite Hear Netwk</td>
<td>1600</td>
</tr>
<tr>
<td>Avada</td>
<td>280</td>
</tr>
<tr>
<td>Newport Audiology</td>
<td>2000+</td>
</tr>
<tr>
<td>Beltone</td>
<td>1500</td>
</tr>
<tr>
<td>Wal-Mart (Sam’s Club)</td>
<td>200</td>
</tr>
<tr>
<td>Costco</td>
<td>380</td>
</tr>
</tbody>
</table>
Co-Op Buying Networks

AHAA
AudNet
Audigy
Ear Q-Group
EPIC
Hear PO
National Ear Care Plan
Advantage Network
Elite
Hearing Planet
Warehouse Invasion
• 68.2M members
• 1.9 Billion TVs sold
• 466M cameras
• 103,000 carats of diamonds
• $1.3B wine sales
• 3.2M pairs of eyeglasses
• 35M prescriptions filled

Estimated sales: 2011
STAFFING

- 20% Audiologists
- 80% Dispensers
- 2 year Hearing Aid Apprentice Program
- No Sales Commissions
- 75% Closure rate; 18% RFC
- On average, 3-4 patient visits per fitting
- REM used for every patient

Best Practices!
Open Fit
$899.99 to $1,399.99 Each**†
For Mild to Moderately Severe Hearing Loss
Worn behind the ear with a thin tube to the ear allowing for natural sounds.

Behind The Ear
$899.99 to $1,399.99 Each**†
For Mild to Profound Hearing Loss
Worn behind the ear and attached to a custom-fitted ear mold.

Bluetooth® Capable
$899.99 to $1,399.99 Each**†
For Mild to Severe Hearing Loss
Worn behind the ear with a thin tube to the ear allowing for natural sounds.

In The Ear
$499.99 to $1,499.99 Each**†
For Mild to Severe Hearing Loss

Canal
$899.99 to $1,499.99 Each**†
For Mild to Moderate Hearing Loss

Completely In The Canal
$899.99 to $1,399.99 Each**†
For Mild to Moderate Hearing Loss

Remote Microphone
$899.99 to $1,399.99 Each**†
For Mild to Moderate Hearing Loss

MORE INFORMATION ABOUT COSTCO SUPPLIERS

Kirkland
REXTON
Get back in the game of life with a hearing aid from Rexton.

ReSound
Rediscover hearing

bernafon®
Your hearing - Our passion

CLICK HERE
CLICK HERE
CLICK HERE
CLICK HERE
“The average person who needs a hearing aid waits about seven years before actually getting one. And then there is the sticker shock: hearing aids costs thousands of dollars and often aren’t covered by insurance. In other words, potential hearing-aid customers aren’t inclined to make a trip to their local audiologist. But a lot of them are going to Costco already, …where all they have to do is walk by the sound booth.”
• 620 SAM’s Clubs in US; with 47 million members;
• About 200 of these stores offer hearing aids;
• No professional staff; no fitting program;
• Advertises that hearing aids can be purchased
  “average savings of 33% vs. traditional retailers.”
Big Box-Warehouse Model

• This model is very successful
• Sales growth far exceeds industry norm
• High volume, low margin focus
• Professional service and delivery model

• Only going to grow - not going away!
The Internet Explosion
1. Internet Options

**Consumer – Lead Generation**

- Web site refers to hearing professionals
- The professional registers (may require fee?) with web site in return for sales leads

  - [www.betterhearing.org](http://www.betterhearing.org)
  - [www.healthyhearing.org](http://www.healthyhearing.org)
  - [www.ahaanet.com](http://www.ahaanet.com)
  - [www.aud-net.com](http://www.aud-net.com)
Marketing & Sale: Face-to-Face Fitting

- Aid purchased through web-based company
- Fitting takes place at local office
- Fitting fee paid to the dispenser

www.hearingplanet.com ($600 fitting fee)
www.ahearingaid.com ($700 fitting fee)
www.aidright.com (contracted fitting fee)
3. Internet Options

**Consumer Direct – Mail Order**

- Web companies sell “one-size-fits-all”
- H.A.s supplied directly to consumer
- Consumer pays manufacturer directly

www.americahears.com  
www.precisehearing.com  
www.myhearpod.com  
www.songbird.com  
www.hearingaids.pro
The Songbird Flexfit is the world's most convenient and affordable digital Hearing Device for those with mild to moderate hearing loss. At a fraction of the cost of a traditional Hearing Device, Songbird provides smooth amplification over a wide range of frequencies, while its discreet and comfortable behind-the-ear design minimizes the look of wearing a Hearing Device.
Shipping Questions

1). What is the shipping time?

2). Do you ship overseas? I have a current audiogram, would it help if I posted that to you for an assessment of the best aid for me?

3). Can you ship internationally?

4). Can I order one of your products from any where in the world? Can I have my product shipped to anywhere in the world? What are my limitations?

5). Do you ship to Australia?

6). Why can't I see your shipping rates before I order?

7). What are your shipping rates?
Say hi to a new day in hearing health

We’ve made it easier for you to take control of your hearing health. Our solution? Make it convenient, affordable, and customized to you! Hearing better has never sounded so good.
Audicus and Embrace Hearing have Web-based services that mail you a hearing aid that costs about $600. You simply upload your audiogram; an audiologist reviews it and discusses options with you. As for the personal touch and the adjustments? “We offer people free adjustments and reprogramming,” says Patrick Freuler, founder and chief executive office of Audicus. “Around 80% of people don’t need additional programming.”
3 Series Wireless Hearing Aids

ON SALE NOW!

<table>
<thead>
<tr>
<th>3 Series Model</th>
<th>Average Retail Price Each</th>
<th>Our Normal Discount Price</th>
<th>ON SALE NOW As Low As</th>
</tr>
</thead>
<tbody>
<tr>
<td>i110</td>
<td>$3,120</td>
<td>$2,695</td>
<td>$1,899 ea.</td>
</tr>
<tr>
<td>i90</td>
<td>$2,920</td>
<td>$2,295</td>
<td>$1,995 ea.</td>
</tr>
<tr>
<td>i70</td>
<td>$2,595</td>
<td>$1,895</td>
<td>$1,795 ea.</td>
</tr>
</tbody>
</table>

Call Free for Info & Orders! (877) 344-7744

Overview

3 Series™ Wireless - Starkey’s Most-Advanced Technology Fits With Your Wireless Lifestyle

The 3 Series™ Wireless hearing aids are Starkey’s flagship model, designed to seamlessly integrate with wireless remote controls, cell-phones, MP3 players and other wireless devices with Bluetooth capability. 3 Series hearing aids come with all the features you would expect in a premium-technology instrument: noise reduction, wind noise protection, feedback elimination, binaural aid-to-aid communications and directional microphones. In addition,
Dear Sir/Madam
How are you?
We understand that you are in the market for hearing aid product. We would like to take this opportunity to introduce our company and products, with the hope that we may work with you in the future.
We are the real manufacturer for digital hearing aid, rechargeable hearing aid, open fit, ric, itc, bte etc. There are two analog type are on sale, very cheap!
Should any of these items be of interest to you, please let us know. We will be happy to give you a quotation upon receipt of your detailed requirements.
We look forward to receiving your enquires soon.

Sincerely,
Amy Xiong

guangzhou 510440, china
e-mail: helen@gzfeie.com  xxlovelypanda@hotmail.com
公司简介

飞鹅公司，成立于2008年，是一家专业生产助听器、扩音机等产品的公司。具有多年的生产研发技术，助听器产品机芯采用电脑全自动贴片技术生产。年产能35万台以上。配备国际先进6500-CX助听器全自动分析仪器检测，各项指标符合中国国家标准GB/T6657-86，美国ANS192标准，及IEC-118-7/94标准。

公司注册《FEIE飞鹅》商标品牌。产品不仅在国内享有盛誉，深受消费者喜爱，而且远销到东南亚、欧洲、南美、北美、澳大利亚、中东、非洲等60多个国家和地区。在竞争激烈的市场中，工厂《以质为...
Personal Sound Amplifiers
“PSAPs”
The Invention of the Year is Great News for your Ears

Perfect Choice HD™ is simple to use, hard to see and easy to afford... it's like reading glasses for your ears™!

New Personal Sound Amplification Product is an affordable way to "turn up the volume!"

Over the years, technology has made the way we live easier, safer and more convenient. In many cases, it's even made many products more affordable... (remember how much the first VCR used to cost!). Now, if you need some help in turning up the volume on the world around you, a new solution has been invented... it's called Perfect Choice HD™.

Perfect Choice HD is NOT a hearing aid. Hearing aids can only be sold by an audiologist or a licensed hearing instrument specialist following hearing tests and fitting appointments. Once they have you tested and fitted, you could pay as much as $5000 for the product.

Reading glasses for your ears. While some people need hearing aids, many just need the extra boost in volume that a PSAP gives them. Now, thanks to the efforts of the doctor who leads a renowned hearing institute, there is Perfect Choice HD. It's a PSAP designed to accurately amplify sounds and deliver them to your ear. Because we've used an efficient production process, we are able to offer you this product at an affordable price.

<table>
<thead>
<tr>
<th>Why Perfect Choice HD is the best choice!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lightweight / Inconspicuous</td>
</tr>
<tr>
<td>Sound Quality</td>
</tr>
<tr>
<td>No Test and Fitting required</td>
</tr>
<tr>
<td>Free Extra Hearing Tubes</td>
</tr>
<tr>
<td>One-on-One personal set up</td>
</tr>
<tr>
<td>Friendly Return Policy</td>
</tr>
</tbody>
</table>

We want you to be happy with Perfect Choice HD, so we are letting you try it for yourself with a 60 Day money back guarantee.

Affordable, Simple to use. Virtually impossible to see.
Hearing Aid?  

PSAP? 

Blurred Lines.....?
The FDA and PSAPs

- **2001**: Mead Killion & Gail Gudmundsen meet at FDA to discuss the need for change to make low-cost OTC amplification devices available to persons with mild hearing loss.

- **2003**: Following several months of discussions with FDA, submitted 2 Citizen Petitions: Killion petitioned FDA to create a new device classification for OTC hearing aid devices; Gudmundsen’s petition to remove medical clearance requirement.

- **2004**: Both Citizen Petitions were denied; FDA reason was “..in the best interest of consumers to see a physician prior to hearing aid purchase.”

- **2008**: A special FDA Working Group was convened to address issues pertaining to personal sound amplifiers. The outcome led to the establishment of a new device classification (*the original premise of Killion’s 2003 Citizen Petition*).

- **2009**: FDA announced distinctions had been drawn between hearing aids and personal sound amplification products (PSAPs). FDA posted a guidance document for consumers:
Hearing Aids and Personal Sound Amplifiers: Know the Difference

You’ve likely seen them advertised on television—small electronic sound amplifiers that allow users to enjoy nighttime TV without disturbing sleepers, or to hear their toddlers from many yards away.

While these personal sound amplifiers may help people hear things that are at low volume or at a distance, the Food and Drug Administration (FDA) wants to ensure that consumers don’t mistake them—or use them as substitutes—for approved hearing aids.

"Hearing aids and personal sound amplification products (PSAPs) can both improve our ability to hear," says Eric Mann, M.D., Ph.D., deputy director of FDA’s Division of Ophthalmic, Neurological, and Ear, Nose, and Throat Devices. "They are both wearable, and some of their technology and function is similar.

Mann notes, however, that the products are different in that hearing aids are intended to make impaired hearing better, while PSAPs are intended to make up for impaired hearing. Instead, they are intended for non-hearing-impaired consumers to amplify sounds in the environment for a number of reasons, such as for recreational activities.

"PSAPs are intended for non-hearing-impaired consumers to amplify sounds in the environment for a number of reasons, such as for recreational activities."

He says consumers should buy a personal sound amplifier only after rolling out hearing loss as a reason for getting one. "If you suspect hearing loss, get your hearing evaluated by a health care professional," he adds.

"Choosing a PSAP as a substitute for a hearing aid can lead to more damage to your hearing," Mann adds. "It can cause a delay in diagnosis or a potentially treatable condition. And that delay can allow the condition to get worse and lead to other complications," he says.

"Treatments for impaired hearing can be as simple as removal of a wax plug in the ear’s ear canal or, in rare cases, as serious as a major surgery to remove a tumor or growth in the middle or inner ear," Mann says.

How They Differ

In March 2005, FDA issued guidance describing how hearing aids and personal sound amplification devices differ.

The recently issued guidance advice that a hearing aid is a sound amplifying device intended to compensate for impaired hearing. PSAPs are not intended to make up for impaired hearing, instead, they are intended for non-hearing-impaired consumers to amplify sounds in the environment for a number of reasons, such as for recreational activities.

The difference between PSAPs and hearing aids are among the topics covered in a new Web page devoted to hearing aids that FDA launched on October 25, 2009.

Signs of Loss of hearing

Mann says that consumers who suspect they suffer from hearing loss should obtain a thorough medical evaluation, preferably by an ear specialist, to identify any medical or surgically treatable causes of hearing loss. Periods extending symptoms of hearing loss should see a doctor or hearing health care professional to test their hearing levels.

Reference: Hearing and Ear Information from the National Institute of Health (nih.gov/library/health/hearing/earinfo.html)

For More Information

For more information, contact the FDA: 1-888-33-FDA (333-3232) or 1-888-651-0968 (TTY); Medical Devices (medicaldev@fda.hhs.gov) or Consumer Products (consumerproducts@fda.hhs.gov).
“Hearing aids and personal sound amplification products (PSAPs) can both improve our ability to hear sound; both are wearable, and some of their technology and function is similar.”

“The products are different in that only hearing aids are intended to make up for impaired hearing.”

“PSAPs are intended for non-hearing-impaired consumers to amplify sounds in the environment for a number of reasons, such as for recreational activities.”

Eric Mann, M.D., Ph.D., Deputy Director
Loud ‘N Clear Personal Sound Amplifier $9.99

Never miss another word at lectures, movies, shows or even church. **Turn up the volume on what people around you are saying.**
Listen to TV and radio at the level you want without disturbing others. You'll be able to hear a pin drop from across the room.

**Disclaimer:** ATTENTION: This is NOT a hearing aid or a substitute or alternative to a hearing aid. If you have or believe you have impaired or defective hearing you should seek professional help from a physician, audiologist or other properly licensed professional. This device is not intended to improve impaired or defective hearing, nor is it intended to aid an individual who has impaired or defective hearing.
Sonic Whisper: Amplifies Sounds Up To 125dB  $19.57

Make sure you're catching all the important details of that conversation. Amplifier boosts sounds up to 125dB and can be worn two different ways--either in the ear or clipped to the frame of your glasses.

Speaker wire fits left or right ear.

No batteries needed - simply plug in to charge.

Includes amplifier, 2 silicone ear tips, clip, AC adapter, and carry case.
Listen Up Micro Personal Sound Amplifier $26.99

Turns ordinary hearing into extraordinary hearing.

Light weight
Fits either ear
Volume control

Set includes:

Sound amplifier
3 different size ear tips
4 batteries
Soft cleaning brush
Carrying case

Made in China

This is NOT a hearing aid or a substitute or alternative to a hearing aid. If you have or believe you have impaired or defective hearing you should seek professional help from a physician, audiologist or other properly licensed professional. This device is not intended to improve impaired or defective hearing, nor is it intended to aid an individual who has impaired or defective hearing.
Stealth Secret Sound Amplifier - $27.10

Does a conventional hearing aid sound like an embarrassment to you? Try the Stealth Secret Sound Amplifier. It looks just like a cell phone ear adapter and works as a sound amplifier. You can join in on conversations. Hear soft voices. Enjoy the best of both worlds: a better appearance and better hearing.

This hearing amplifier comes with a charger (no batteries to replace) and three ear tips.
So small it's barely visible!

With its clear tubing, this small amplifier fits discreetly in the left or right ear and helps amplify sound up to 30X. It's equipped with a rapid charger and rechargeable battery that lasts up to 8-10 hours of continuous use.

Includes 6 interchangeable silicone ear tips, charging dock, cleaning brush and wall adapter.

Weighs only 0.3 ounces.
Amplified Stereo Listener with 3-Band Equalizer   $39.99

Just add headphones and use this amplified listener to boost the sounds around you. It's ideal for places where you have difficulty hearing the speaker, such as large lecture halls and church. Or you can use it to watch TV without disturbing others. The three-position equalizer control lets you choose the amplification you need for your particular listening environment. Includes a convenient neck lanyard.

Includes stereo headphone jack, so you can add headphones to boost the sounds around you Features a 3-position equalizer control so you can choose the amplification you need. You'll also need Stereo headphones with 1/8" plug AAA battery (2)

Specifications…
The MDHearingAid®

- OTC hearing aid; cost less than $200
- 9 Subjects; mild-mod S/N loss;
- Unwilling to purchase hearing aids because of cost
- Used device for 30 days
- 2 self-surveys: IOI-HA and SADL

- All participants had normal user satisfaction scores
- Electroacoustically adequate
- Reasonable low-cost solution

S. Babu, MD, Michigan Ear Institute
"Focus Ear"
Personal Sound Amplifier – Model: BTE1K $349

100% digital processing
High-definition technology
Noise-reduction circuitry
Anti-whistle technology
14 bands and channels
Manual VC with 20 settings
Over-the-Counter Quiet Sound Amplifier
Etymotic Research, Ltd

$479 each; $858 pair
## How Does the QSA Work?

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gain</strong></td>
<td>LO (15 dB) - HI (23 dB)</td>
</tr>
<tr>
<td><strong>Signal Processing</strong></td>
<td>Analog</td>
</tr>
<tr>
<td><strong>Compression Type</strong></td>
<td>Wide Dynamic Range Adaptive Compression</td>
</tr>
<tr>
<td><strong>Maximum Output [LO]</strong></td>
<td>112.5 dB SPL</td>
</tr>
<tr>
<td><strong>Maximum Output [HI]</strong></td>
<td>114 dB SPL</td>
</tr>
<tr>
<td><strong>Battery Type</strong></td>
<td>10A zinc-air</td>
</tr>
<tr>
<td><strong>Battery Life</strong></td>
<td>2 weeks (16 hours/day)</td>
</tr>
<tr>
<td><strong>Battery Current</strong></td>
<td>425 uA</td>
</tr>
</tbody>
</table>
Dispenser-Friendly PSAPs?

- Entry level sound amplifier
- High quality – good features
- Low cost option to hearing aids
- Easy fit – little time involved
- No audiogram required
- New lead for future marketing?

“…some hearing help is better than no hearing help”
(Mark Ross, PhD)
Shortage of Professionals
Average Age of Hearing Aid Purchaser = 69 yrs

Baby Boomers: 1946 -1964

76,000,000 of ‘em!

They will reach 69 years old in 2015 -2033

How many audiologists do we need in the future?
Current hearing aid delivery system
(From Windmill & Freeman, 2013)
<table>
<thead>
<tr>
<th>Profession</th>
<th>Programs</th>
<th>Students</th>
<th>Graduates per year</th>
<th>Mean # Students per class</th>
</tr>
</thead>
<tbody>
<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>629</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>
Graduates in Audiology

- 2007 Graduates: 407
- 2008 Graduates: 512
- 2009 Graduates: 482
- 2010 Graduates: 582
- 2011 Graduates: 602
- 2012 Graduates: 629
### Age Distribution of Audiologists

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Percent*</th>
<th># Audiologists</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;30 years</td>
<td>11%</td>
<td>1770</td>
</tr>
<tr>
<td>31-40</td>
<td>26%</td>
<td>4185</td>
</tr>
<tr>
<td>41-50</td>
<td>25%</td>
<td>4024</td>
</tr>
<tr>
<td>51-60</td>
<td>26%</td>
<td>4185</td>
</tr>
<tr>
<td>&gt;60 years</td>
<td>12%</td>
<td>1931</td>
</tr>
</tbody>
</table>

* Source: AAA 2011 Member Survey
Projected Need to Maintain Current Audiologist/Patient Ratio
Projected Need versus Projected Growth of Audiologists

Number of Audiologists

Year

Projected Need

Projected Growth

600 graduates/yr; 20% attrition
H.A. Program Growth

- Key limiting factor in Costco’s growth is the inability to recruit dispensing professionals
- Sales increased 26% in 2012
- Trains and promotes promising individuals within their company’s ranks to become dispensers;
- Currently >125 employees in “H.A. training.”
Savvy Consumers
Hearing Aid buyers typically don’t follow traditional retail behaviors
Today’s H.A. Buyers

- More inquisitive
- More educated
- More sophisticated
- More demanding
- Higher expectations
- Want to be involved in decisions

- Not spontaneous
- Not impulsive
- Thorough, thoughtful, careful
- Respect expertise
- Want product value
- Seek high quality services
Searching OnLine*

- 85% US adults use internet almost daily
  - 96% own Cellphones -- 56% own Smartphones

- 72% searched online for healthcare info in past year*
  - diseases & conditions;
  - treatments & procedures;
  - doctors & health professionals;
  - 30% of adults ages 65+ years old searched online for health info in the past year (54% of ages 50-64)

*PewInternet – Pew Research Center 2012
Consumer Access to Hearing Aids

• Fuzzy Professional Roles
• Multiple Entry Points
  o Physician’s offices
  o Audiology private practices
  o Clinics, hospitals and universities
  o Hearing aid retail specialists
  o Big Box stores
  o Direct web sales
  o Internet, Direct mail
CONCLUSIONS
It is time...to reconsider both internal and external hearing care delivery systems.
Meeting the Challenges of the Future

Become a ‘Botique Professional
Concentrate on personal service
Personal communication counselor
Package rehabilitation packages
Level 3 Premium Rehab Plan
- Bilateral Premium Devices
- 3 year warranty and supply of batteries
- 3 year comprehensive care plan – unlimited office visits
- 2 wireless accessories
- Dry and Store unit

Level 2 Mid-level Rehab Plan
- Bilateral Business Class Devices
- 2 year warranty and supply of batteries
- 2 year comprehensive care plan – unlimited office visits
- 1 wireless accessories
- Dry and Store unit

Level 1 Basic Rehab Plan
- Bilateral Economy Devices
- 1 year warranty and supply of batteries
- 1 year comprehensive care plan – unlimited office visits
- Dry and Store unit

TELE-AUDIOLOGY

- Expand the number of providers
- Extend the efficiency of services
- Increase productivity of providers
- Make hearing care affordable
“I think that the role of the hearing healthcare provider is too deeply tied to the devices and to the equipment that we use.”

“It is difficult these days to compete on technology. In the digital era where we all live, customers expect that technology will be incrementally evolving and also lowering in cost.”

“It is up to us (audiology) as a profession to adapt, and if we do not adapt and try to change our business model, we are at risk for becoming irrelevant or obsolete.”

7,716 results for hearing aids
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Thank You for Listening!