Preparing Your Academic Audiology Program[1] for the COVID-19 Crisis and a Post-Pandemic World

Part 2:
Preparing Your Audiology Teaching Clinic

A Journey of Change

Realigning our teaching clinic with university strategies and pandemic demands.

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1. Audiology academic programs are the focus of this handbook and comprise all of the examples. However, speech-pathology programs may also find the general advice useful.

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Executive Summary

The COVID-19 pandemic is not the primary driver pushing for reimaging academic audiology clinics. The crises in higher education are. U.S. higher education and health care, including audiology programs and their clinics, have not been ready for the 21st century. The pandemic and economic crisis have amplified this lack of preparation. To advise academic audiology clinics on how to weather the COVID-19 crisis and eventually flourish, we first explain the weakness of the underlying financial infrastructure of higher education and its implications for proceeding.

Revenue sources for higher education are drying up, and most universities cannot recoup their financial loss by increasing enrollment and tuition because of shifting demographics, record unemployment and a severe recession, coupled with pandemic distancing and infection control restrictions. New revenue sources must be found. Creating or increasing revenue from their clinics will help audiology programs increase revenue and profit for their university.

The need to increase clinic revenue and produce profit requires transformative strategic and business planning for the clinic to shape the future to its advantage. Planning is essential to succeed in the new world of post-crisis, hearing health care. We suggest building a business model along five dimensions, as suggested by Pedersen and Ritter (2020):

- **Why are you in business?**
- **Who are your customers?**
- **What are you selling?**
- **How do you sell to your customers?**
- **Which abilities do you need to run your clinic?**

The keystone in building a clinic business model is the customer. Traditionally, academic clinics have focused primarily on students as their customers. We suggest that patients, students, the university, and local physicians are all customers to be satisfied if the clinic is to be a financial and training success. In the new business model, core clinic offerings must evolve, or be extended or eliminated to meet the current crisis and maximize their relevance in the new post-pandemic world. New services and products demanded by the crisis that augment core services or expand them into adjacent markets must be created. And, we need to generate new growth that leverage core capabilities in innovative and distinct businesses to meet new demands and opportunities. Because timing and priority of changes are often pandemic status-dependent, it helps to think of transforming the clinic through three overlapping phases and creating a business model for each stage.

To assist in making your business model operational, we discuss safety and infection control, scheduling, telehealth, legalities and constraints, business practices, the importance of producing profit and the responsibility to win more acceptance of hearing aids. We clarify who is most likely a hearing aid purchaser and who requires an alternative strategy. We also present patient economic and demographic factors, which affect clinic success and the necessity to revise and increase clinic marketing based on economics and the pandemic.

Today's pandemic and economic crises demand tremendous change in higher education, a sanctuary of tradition. These crises are less root-causes of change than change catalysts that are exacerbating existing long-term shortcomings we must now resolve. We developed this handbook to assist in resolving these issues for your academic clinic, to encourage innovative solutions, and with the expectation of producing a more productive and brighter future.

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Part 2: Preparing your Audiology Teaching Clinic

U.S. higher education and health care, including audiology programs and their clinics, have not been ready for the 21st century. The pandemic and economic crisis have amplified this lack of preparation. To organize our academic audiology clinics to weather the COVID-19 crisis and eventually flourish, we must first understand the weakness of the underlying financial infrastructure of higher education and its implications for proceeding. Clayton Christensen's 2011 prediction of bankrupt American universities and Moody's negative outlook for higher education from 2017 to the present show that higher education in the U.S. has been in financial difficulty long before the COVID-19 pandemic. (Moody's 2018, Crowe, 2018, Moody's 2020). Public universities have consistently been losing public funding. From 1992 to 2017, the percentage of university revenue support from state appropriations dropped from 72% to 54%. From 2019 to the present, less than half of public-school support is from the state. (State Higher Education Executive Officers, 2019). In response, tuition costs have tripled over the past three decades, angering the public, limiting university access, and creating inequality in educational opportunities. Now, enter the pandemic, immediately ripping away hundreds of millions of dollars of revenue (room, board, athletics, etc.) from each university, and we have a perfect storm. The Center on Budget and Policy Priorities estimates that in 2021 states' budget shortfalls will be a staggering $350 billion, $150 billion more than the record $230 billion shortages set in 2010 during the great recession. Going forward, state support for higher education can only decrease. The severe financial difficulties of higher education have acute and long-lasting implications that are now fusing with the demands of the pandemic to drive restructuring academic audiology clinics and the programs that house them.

> *"In 2011 Harvard Business School professor, and leading business and academic consultant, Clayton Christensen, who developed the idea of disruptive innovation, predicted that as many as half of American universities would go bankrupt within the next 10 to 15 years."*
> *– Abigail Hess (2011)*

State Finances: Covid-19 Is A Disaster For State Budgets

At the start of 2020, before the pandemic, states were expecting increases in both revenue and spending of about two percent. Enter the pandemic, "in April state tax revenue fell on average by half according to the Urban Institute… Two-thirds of state revenues come from income or sales taxes. Sales taxes have been devastated by closure of shops and restaurants and income taxes by the rise in unemployment… Demands on spending soared because states are responsible for… public health, unemployment, and policing… With tax increases politically unfeasible at the moment, states will have little choice but to impose big spending cuts." — The Economist, p19-20, June 20, 2020.

State universities and colleges will suffer reduced state support and be forced to cut spending and create new sources of revenue.

Higher education is financially crippled, and most universities cannot recoup their financial loss by increasing enrollment and tuition because of record unemployment and job loss. The worst U.S. downturn since the Great Depression is now officially a recession, according to the National Bureau of Economic Research. Usually, during a recession, higher education enrollment increases, but this time an unusually severe economic downturn is combining with shifting demographics and health concerns to limit enrollment.

The American Council on Education has predicted a 15% drop in enrollment for the next academic year. Harvard's MBA program's enrollment for this fall is down 200 students, from 900 to 700. Enrollment, which was decreasing due to demographics before the pandemic, will now decrease at a faster rate. Record unemployment will eliminate all possibility of college enrollment for millions. University administrators are seeking paths out of this dilemma. Academic programs in audiology must prepare to offer an attractive pathway toward a solution or fall by the wayside.

The audiology clinic is a bright light illuminating a partial solution for this quandary. University audiology clinics must maintain the highest level of patient care and student training while generating sufficient revenue to cover the cost. They also need to be innovative team players who produce enough profit to participate in reducing the department's loss of general revenue funds from public and private sources. The new world of academic audiology has arrived, and it demands that its clinics be profitable like non-academic clinics. A critical factor in responding to the pandemic, creating profit in the clinic, will rise to a high priority—a necessity.

Here we offer insightful and practical suggestions not just on becoming profitable, but on dealing with the crisis and preparing your clinic for what lies ahead. We hope that our contributions will stimulate additional creative solutions and instigate action and continual improvement to create a path out of this predicament and a bright future for audiology. First, we must acknowledge the urgency of responding to this quandary and the need to change our clinic business model.

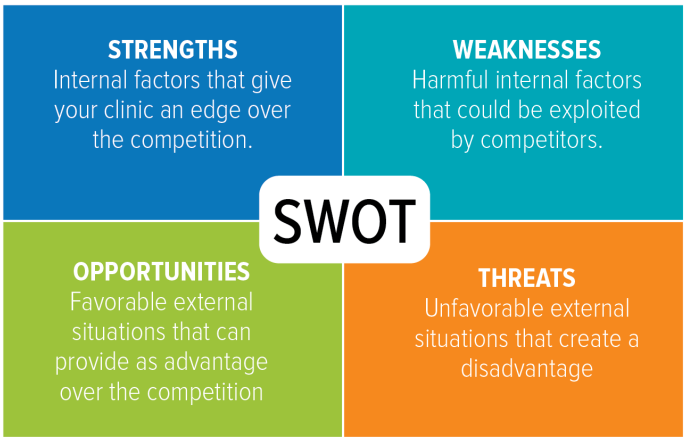
> *"The best way to predict the future is to create it."*
> *– Alec Mackenzie*

Planning the Transformation to the New Clinic Business Model

The first step in implementing clinic change is to build a plan to facilitate the transformation process, give it direction and clarify your vision for the future or endpoint. Author and management expert Alec Mackenzie states: "The best way to predict the future is to create it." Below we show you, based on strategic planning and a business model development strategy created by Ritter and Petersen (2020), how to create a transformed academic clinic, which will prosper during the crisis and into the future. You have the opportunity, if not the obligation, to create the future success you desire.

Strategic Planning

A strategy is about what we will do now to shape the future to our advantage and is essential to transforming the clinic to succeed in the new world of post-crisis, hearing health care. It is a framework for decision making, a set of guiding principles that can be applied as the situation evolves. It is an indispensable tool for surviving the pandemic. Strategic planning uses a SWOT analysis (see figure to the right) to elucidate how the clinic works. It reveals the business fundamentals: the sources of value creation, the drivers of



cost and the basis of competition. Successful strategic and business planning is not superficial but goes into great depth. It includes a detailed assessment of the clinic's and the university's strengths, weaknesses and opportunities. Strategies encourage you to think about how you can deploy your capabilities and how to build and deploy new ones needed to defend your competitive position in the new, post-crisis world. Your strategies will allow rapid resource allocation decisions, help anticipate unexpected events and identify opportunities you can exploit. University clinics are under enormous pressure. Strategic and business planning facilitates acting under the most difficult high-pressure conditions.

Know Your Starting Point

> *If you wanted someone to invest in your private clinic, you would write a business plan to convince them. In higher education, we now must develop a business plan for receiving support from the university for our audiology clinic.*

Business planning is a lot like planning a trip. To program your GPS guidance, you need to not only tell it where you want to go, but also the point from which you are starting. In business planning, you must clarify your traditional or pre-pandemic business model, the starting point, and then your vision of the post-pandemic model for which you are striving, i.e., where you want to go.

After the SWOT analysis, chart your pre-pandemic clinic business model. Evaluate the pre-pandemic state of the clinic along five dimensions: Why, Who, What, How, and Which. The table below shows how a traditional pre-pandemic audiology clinic business model might appear on evaluation. Use this format to display the business model you were using before the pandemic. (The business model paradigm used here is modified from Pedersen & Ritter, 2020).

> *"…leaders need to force themselves to be strategic at a time when they are grappling with an intense crisis and coping with day-to-day emergencies… it is necessary, even compulsory."*
>
> *– Sheppard, Zarubina and Jenkins, 2020*

Academic Clinic Traditional Two-Part Pre-Pandemic Business Model	Customer Priority One: Students	Customer Priority Two: Patients
Why are you in business?	Educate, train, and give students experience in clinic techniques, diagnostics, treatments, and procedures	To prevent, diagnose, and treat hearing and balance difficulties
Who are your customers	Audiology and speech-pathology students	People with hearing and balance difficulties and their companions
What are you selling?	Acquisition of clinical skills, knowledge, and techniques Diverse patient and treatment experiences Clinical excellence	Improved hearing health, communication, and balance function
How do you sell to your customers?	Website Professional organizations, meetings, journals National Rankings Campus Visits Testimonials	Website Third-Party referrals Testimonials
Which abilities do you need to run the business?	Exceptional clinical skills Extraordinary teaching capabilities	Exceptional clinical skills Traditional clinic facilities

The keystone in building a clinic business model is the customer. Traditionally, academic clinics have focused primarily on students and only secondarily on patients. We have seen this routinely in university clinics that are open only when students are in the clinic rather than when patients need clinical services. Most of us would agree that we are teaching patient care and clinical excellence in the clinic. That should guide us in prioritizing patients over students. Many audiology clinics exist without students, but no audiology clinics exist without patients. Patients must be the top priority, and we must model that priority daily in our academic clinics.

Historically academic clinics were free clinics, subsidized by the university, to give students clinical experience and training. The university was a minor customer, or not considered a customer that clinics served. So, we have used a two-part model that does not include universities as customers, to represent a traditional pre-pandemic model. However, in the past decade, some universities have realized a tripartite model, which includes the university as a customer.

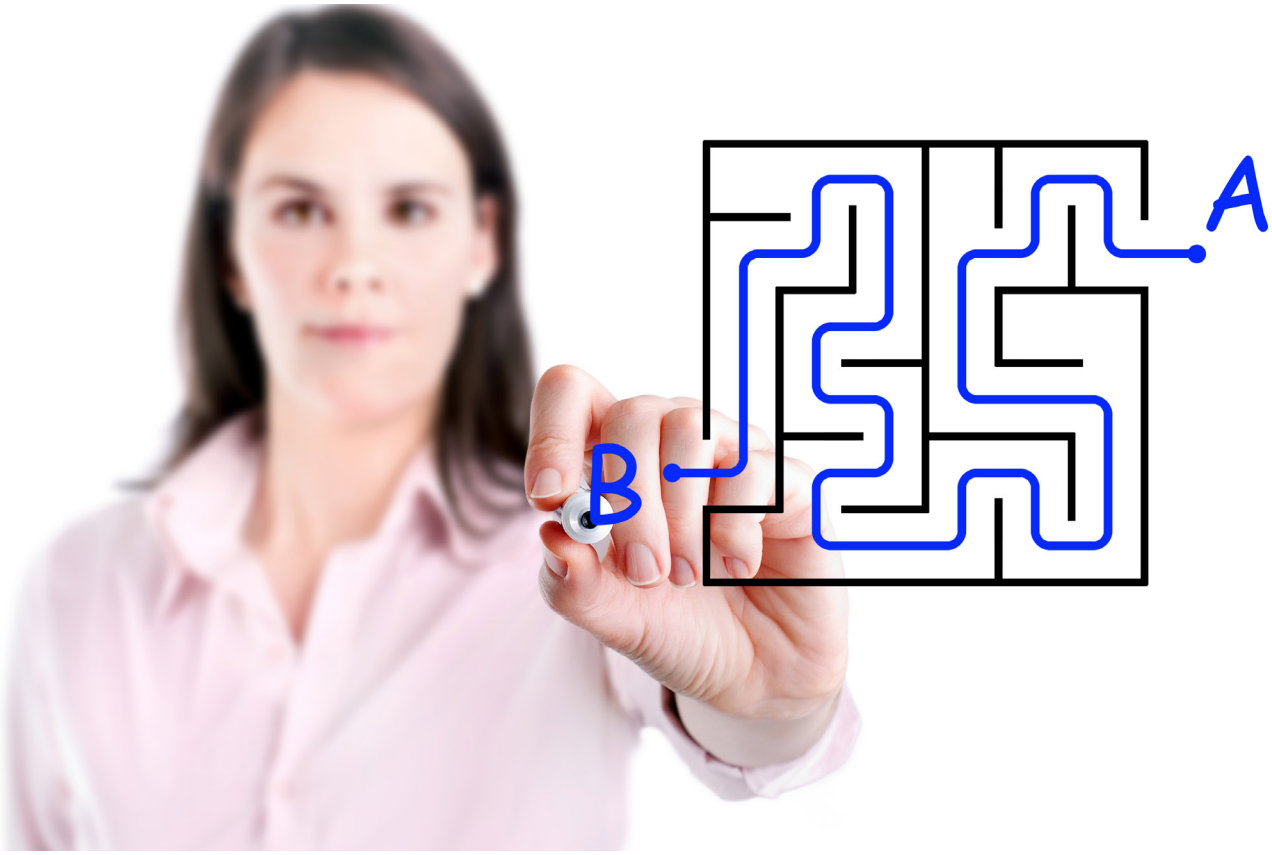
Once your pre-pandemic business model is well defined, the next step is to plan the business model to which you aspire. This model is the one in which you will function productively and prosper during and after the pandemic; your SWOT analysis should drive it.

Start With the End in Mind

When rethinking your business model, ensure that it is transformed, so it is more resilient and prosperous by bringing considerations about the future into the present. What services and products will be needed in a very different economy? Do not let opportunities from the crisis go to waste, undertake significant reconfigurations that maximize future circumstances.

Understand and delineate your existing insurance contracts, state licensure, Medicare guidelines, CDC and OSHA infectious disease control requirements and university constraints and how they might change. Will patient and student demand go up or down? You will need new delivery channels—what are your innovative solutions? How will you deal with safety concerns? Rethink how you can create value and how you differentiate your clinic from others. What will be new marketing channels' opportunities and requirements? How will restrictions on interactions and travel affect you? What new technologies will be required? What capabilities will be strained, and what new capabilities must be acquired? How will the pandemic affect your performance measures? Detail your vision of the desired clinic business model using the same five dimensions used above

To adapt to the new world of higher education, you must shift your customer base to prioritizing patients first and broaden it to include the university and physicians. Accepting physicians as an active customer base may be new to some clinics. But it is essential because physicians' referrals are the people most likely to become patients who need and will purchase treatment options. An active physician referral system will provide a constant stream of patients to grow revenue and provide needed patient experiences to students. This expansion of customers results in a quadripartite business model. On the next page is a suggestion of how this new clinic business model might look. Please use it to help envision and create your post-pandemic business model.



Academic Clinic Quadripartite Business Model	Customer One Patients	Customer Two Students	Customer Three University	Customer Four Physician Groups
Why will you be in business in the future?	To prevent, diagnose and treat hearing and balance difficulties	Educate, train, and give students experience in clinic techniques, diagnostics, treatments, and procedures Provide professional job opportunities	Produce Profit Educate and train students Serve the community through hearing health and balance services	Help identify patients at high risk for hearing loss, and, provide them safe, excellent care Improve patient communication Help deal with comorbidities
Who are your future customers? Can you create new customers?	People with hearing and balance difficulties and their companions Create new customers from the mild to moderate category	Audiology and speech pathology students Students recruited from other majors	University Administration -Dept. Chair -Dean -Provost -President Board of Governors	Local PCPs and other medical groups dealing with seniors and comorbidities
What are you selling? List important unsatisfied customer jobs to be done. What jobs will the customer want to be done in the future?	Enhanced hearing health Improvements in communication and balance difficulties Reduced comorbidities Improved cognition Accessibility Affordability Expertise/Trust	Professional employment opportunities Acquisition of clinical skills, knowledge, and techniques through diverse patient and treatment experiences Clinical excellence Cutting-edge simulations Mentoring	High-quality clinical training Grooming students for quick, professional employment Profit opportunities	Reliable referral for: Enhanced hearing health Improvements in communication and balance difficulties Reduced comorbidities Improved cognition Accessibility Affordability Expertise/Trust

Academic Clinic Quadripartite Business Model	Customer One Patients	Customer Two Students	Customer Three University	Customer Four Physician Groups
How do you sell to your customers?	Website and digital marketing Retail marketing Third-party referrals Grassroots marketing YouTube Testimonials Patient guidance and education portals	Website marketing Professional journal ads and articles Digital marketing Presentations National rankings Testimonials Tele-interviews	Nationally recognized achievements and rankings Number of students Amount of tuition income Profit generation Quick post-graduate employment Clinical research and publications	Website Physician referral program Educational materials Peer-reviewed articles
Which abilities do you need to run the business? List potential technologies and solutions leveraging your key capabilities and critical capabilities you must acquire	Telehealth capabilities Patient portal Relationships with manufacturers Clinical facilities and equipment Relationships with the medical community Business skills Infection control Scheduling flexibility EMR with E-documents and records. Improved outcome measure capabilities and use	Clinic simulations Distance learning Clinical facilities Clinic patients Labs Infection control Block class and clinic scheduling Diverse patients and treatment opportunities Ability to work as a team Mentoring	Business management skills Leadership skills Change and crisis management talents Access to upper management Ability to manage upward Improved performance measures, capabilities, and use Infection control Liability control	High trust, collaboration culture Seamless patient referral Quick patient diagnostics and reporting Affordable, high-quality treatment Keep patients in referring system Education about comorbidities, new testing, treatments, and rehab

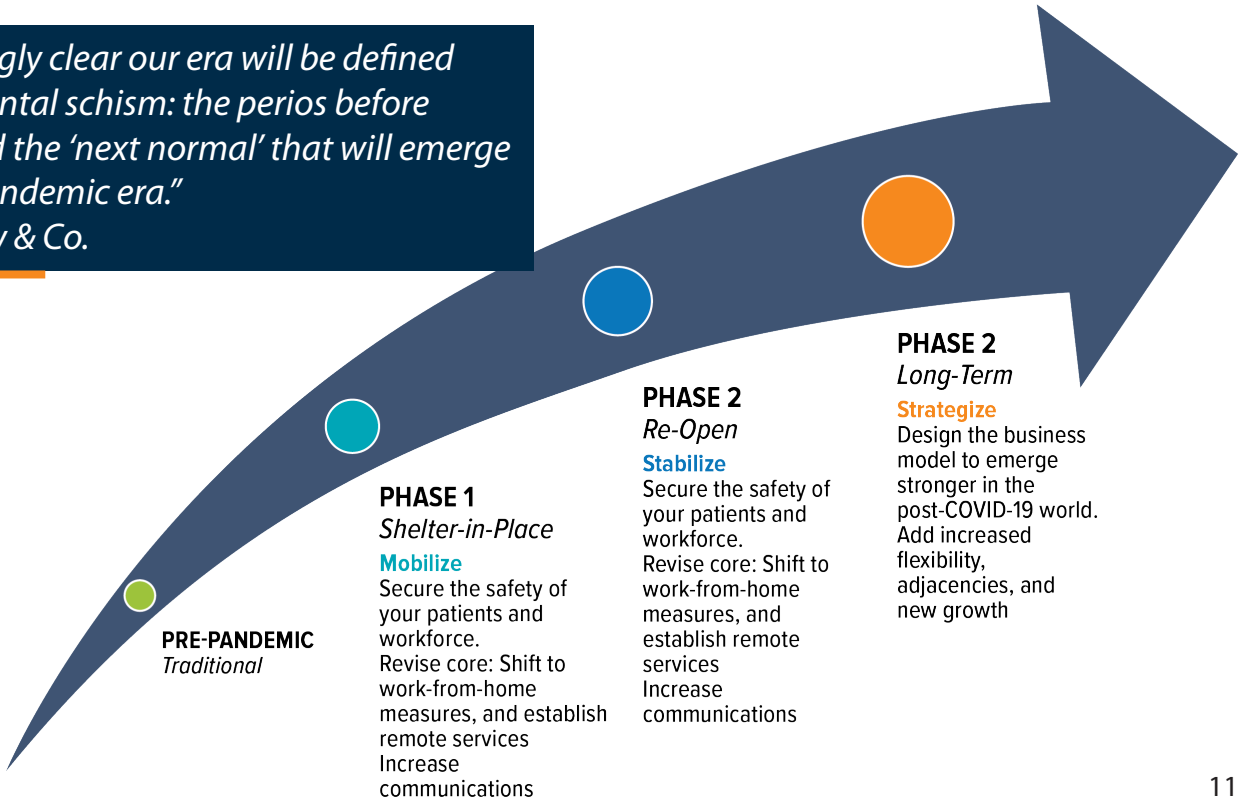
Now that you have your current and proposed business models, you can compare the two and see what you need to do to transform the current model into the new model. You will see many business and profit transformations fall into these three principal categories:

- **Core** – Core clinic offerings that must evolve, or be extended or eliminated to meet the current crisis and maximize their relevance in the new post-pandemic world, such as shifting from face-to-face diagnostic protocols to telehealth remote diagnoses and rehabilitation services. Testing that is not cost-effective or not essential should be eliminated from the clinic, simulations and student training.
- **Adjacencies** – These are new services and products demanded by the crisis that augment your core services or expand them into adjacent markets, such as PSAPs and OTC products and services, or assistive listening devices. Consider performance-enhancing innovations and market-creating new business models. Can space be allocated for complimentary professional services that create new revenue verticles? Balance, cognitive screening, OSHA testing, and a musician's clinic can bring in additional revenue to the clinic and provide more diverse training.
- **New Growth** – Change initiatives that leverage core capabilities in new and distinct businesses to meet new demands and opportunities, such as hearing aid leasing and new collaborations with other universities and clinics. Develop transformative strategies to address significant gaps or shortfalls. Consider reinventing the core.

Because timing and priority of changes are often pandemic status-dependent, it may help to think of transforming your clinic through three, overlapping phases and creating a business model for each stage, in addition to one long-term model of the future. When we began this handbook, the shelter-at-home phase was winding down in many locations, but before we finished, a resurgence of coronavirus emerged and Phase One planning is again critical. The strategies and actions taken during this first phase form the basis for continuing into the next two phases, so it is important to explain actions taken, or to be taken, in the first phase.

However you arrive at your ultimate future business model, there are several issues you must address. To assist you, we have highlighted some of those issues and suggestions about how to tackle them.

"It is increasingly clear our era will be defined by a fundamental schism: the perios before COVID-19 and the 'next normal' that will emerge in the post-pandemic era."
– McKinsey & Co.



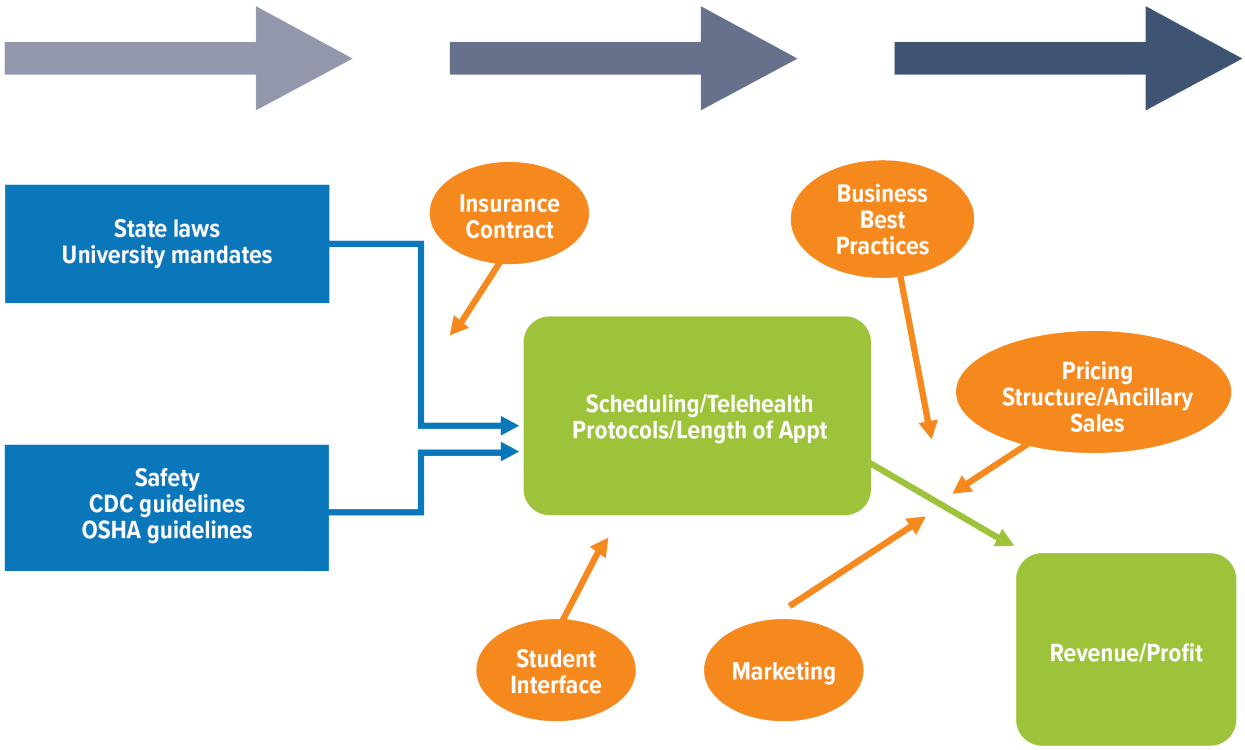
Critical Transformation Issues

Obstacles and interactions

As you proceed with your clinic transformation, determine the obstacles which you must overcome when implementing your strategic plan-based new business model. There will be constraints and rate-limiting factors such as the mindset of the faculty, the physical restrictions of the clinic space, the contracts of the hired professionals, and the constant changes in safety requirements as the public health crisis fluctuates monthly.

One difficulty in repositioning your clinic is that each aspect of clinic management does not exist independently; others influence it. Infectious disease control drives protocols for scheduling and limits patient flow and student experience. Choices in telehealth are affected by state licensure and available equipment and technology. Your transformation choices will create an intricate and delicate web where changes in any one choice affect many others. Hence, as we plan, we must align potential changes in one dimension with another. Your planning is an opportunity to adjust each dimension and how they relate to one another.

The figure below illustrates an example of some interaction affects you will encounter:



Early identification of interactions and taking care to align them is critical to efficient planning and its success.

Safety and Infection Control

Safety protocols are the framework of what we should do for the health and welfare of your team, students and patients. We must establish protocols that encompass infectious disease control for your waiting room, all staff, and students, exam rooms and restrooms. We need to incorporate CDC and OSHA guidelines into these protocols. Once designed, we need to train staff members on these new protocols. These training sessions are also a learning opportunity and experience for students. Frequent follow-ups following training are vital for the continued compliance of your staff. Be watchful, lack of leadership vigilance leads to relaxed safety protocols with potentially dire consequences.

The primary constraints clinic directors face is the physical barriers of the university clinic, the limits of creative workarounds, and government and university mandated restrictions. One person cannot solve the multiplicity of issues caused by these constraints. Enlisting the assistance of staff members, colleagues, students, patients, administrators and consultants will create a multifaceted and unique solution for your clinic and result in ownership by those involved.

There is preparation to be done before starting. Answer the question: how many people fit into your waiting room at one time while maintaining social distance? That provides the base number for all of your calculations for scheduling. Next, start to reimagine how you can create alternative waiting rooms, such as patients who wait in their cars, on outside benches or under a temporary pavilion, and having the front office staff text or call when their turn comes. Add that number to the initial count to estimate the maximum number of patients one can see face-to-face per hour.

Remember, the limit on face-to-face interactions does not place constraints on the number of people you can serve per hour. That number is limited only by your creativity. Provided the team can accommodate the trips to and from the dropbox or parking lot, curbside protocols, in addition to dropbox methods of hearing aid and supply exchange, can double or triple the number of patients.

Create infectious disease and screening protocols knowing these will be fluid to respond to changes in local health statistics. Utilizing the CDC and OSHA guidelines, determine what is appropriate for your staff members, your clinicians, your students, and your patients to follow for each appointment. Should patients be allowed to bring third parties to an appointment physically? If that third party is not needed for mobility or cognitive concerns, probably not. Include them remotely. Patient responsibilities for personal protective equipment (PPE), third party presence, and social distancing need to be explained to the patient when they book an appointment. These expectations can also be posted to your website and emailed to your patients before their appointment. This messaging also needs to be reiterated before they walk into the clinic.

To provide a clear and concise message to your patients, install a screening protocol, and assign a clinic team member to the door for temperature checks and to provide masks for those who do not have one. Also, post an infection control information sign at the front door. Clear your waiting room of any materials that could be

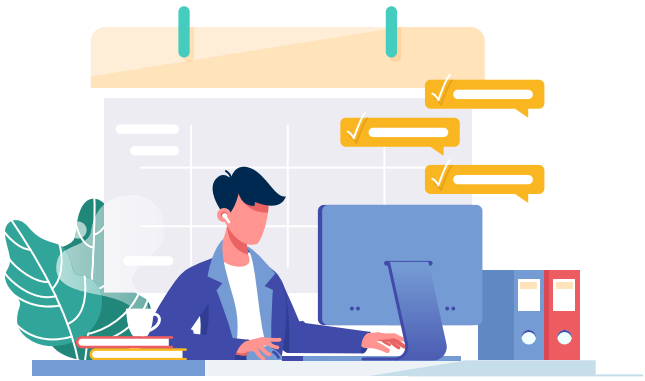
handled by patients. Take out all magazines and brochures. The clinic should convert from paper to e-documents and records. If your clinic is still utilizing paper documents, patients should be handed a clean pen and clipboard by your front desk staff to fill out any documents you did not previously send to the patient's home. A receptacle clearly marked for the collection of the dirty pen and clipboard should be used to collect those objects.

Modify exam rooms as you did the waiting room. Unnecessary equipment and supplies should be removed and stored for easy access leaving little to be contaminated and, therefore, cleaned. Large groups of supplies such as tymp tips, OAE inserts, and insert earphones must be accessed using tools that will eliminate being touched by an ungloved hand. Plastic sheeting over equipment will assist in the speeding wiping down without damaging the dials or buttons with long term disinfectant.

Can your patient education materials, contracts, and instructional pieces be made into pdfs? These digital copies should be emailed to patients after their visit to avoid cross-contamination of objects and surfaces. Handheld tablets with pdf graphics can be used for illustrative purposes and signature capacities on contracts. Unless the patient is receiving new hearing aids and require packaging, accessories, and cleaning materials at the time of the orientation, patients should walk out of the clinic with nothing more than what they walked in with.

When patients leave the clinic, similar sanitary precautions should be observed. Ask that payments be made with credit cards, not cash. Credit card payments limit the number of objects to be handled by staff members and patients. Pin pads, credit card machines, pens, and tablets need to be cleaned with disinfectant after each use by the patient. If there is more than one entrance/exit to the clinic, dedicate one solely to leaving the clinic. Social distancing will be maintained with one flow of patient movement.

Scheduling



How you scheduled in the past will not be how you schedule now or in the future. The assessment and manipulation of the schedule start with the waiting room. How many people can sit in your waiting room using proper social distancing? If six feet is our current magic number, how many people could stand in line waiting to check-in at your front desk with six feet apart from them? Is the arrangement and location of your clinic appropriate for patients to check-in using their cell phone and wait in their cars until the receptionist calls them to come in, so there is no time spent in the waiting room? Does your clinic require an elevator to get to it that requires limits for the number of people that can be in one elevator at a time?

Additionally, you need to increase the time allotment required for each appointment to allow for proper sanitization. Sanitation includes instruments, rooms, furniture, etc. to be done between each patient. Delegate an assistant, student or team member to clean after every patient departs. If you can have more than one student in the test suite, the second student could sanitize equipment immediately after its use to reduce between patient sanitation time. Create staggered scheduling blocks, so the testing suites don't all require cleaning simultaneously.

Attention must be given to clinic scheduling with and without student participation. If sometimes, there are no students in the clinic, consider making appointments shorter and seeing more patients. Increased simulation training will free up a portion of clinic appointments from student involvement and the need for extra clinic time when students are involved. If you are fortunate to have a large class of students, consider separating them into two parts, each of which participates in the clinic half of the time. Using distance learning, particularly asynchronous classes, allows for greater flexibility of scheduling students' clinic time since the students don't all have to be in class simultaneously.

Telehealth

The primary concern of university clinics should mirror that of any private practice or ENT audiological departments. How do we maintain or increase revenue to our clinic but decrease the number of patients we see face-to-face to ensure the health and well-being of our students, faculty, patients and staff? Traditionally the diagnostic process occurred in person and included: a comprehensive audiological evaluation, a communication needs assessment, and hopefully a treatment plan for patients with hearing difficulties. That plan would include in-person orientations or rehab and hearing aid checks. This traditional method needs to be discarded. Our historical reliance on face-to-face settings to test and treat the hearing-impaired population cannot continue. A hybrid model utilizing telehealth, curbside care, drop boxes, and face-to-face needs to be implemented immediately and modified as we observe the ebb and flow of public health concerns.

The move to telehealth is far more comfortable than it sounds. It's more of a change in mindset than it is an actual change in processes and protocols. Audiologists will continue to provide the same level of care and counseling but will do it through a new medium. Inventory the appointment types provided by your clinic. The list should have two columns, the list of appointments you can only conduct face-to-face and another column for those that you feel you have workarounds. Once you do this exercise, you will be astounded to find very few appointments land in the face-to-face only column. Auditory brainstem responses, VNGs, ECoGs and VEMPs, OAEs, Tymps, and CAP testing are the only face-to-face required appointments.

There are workarounds for every other appointment type. Even comprehensive audiograms can be done remotely with proper equipment. Although remote testing might not be something your university clinic wants to utilize for all testing, you can use it as either for lead generation or as a screener to eliminate patients without a hearing loss. University clinics may want all comprehensive audiograms to be in the clinic setting for the student's benefit. If so, you and your students can still accomplish communication needs assessments, orientations, or rehab, clean and checks and repairs through non-traditional methods. Proper assessments of the appointments you and your students can conduct via dropbox or telehealth are imperative as we work to decrease the number of patients walking through our door while increasing the number of patients who we

help.

By utilizing telehealth or curbside assistance, the time associated with each appointment type will not have to increase for disinfection or will not have to increase as drastically as conducting a face-to-face appointment. Sanitation for infectious disease control after a face-to-face patient appointment is much longer than the cleaning done when it is only a clinician and a student in a room. That increase time spent cleaning after face-to-face appointments mean helping fewer patients and producing less revenue.

"Proper assessments of the types of appointments that you and students can do via Dropbox or telehealth are imperative as we work to decrease the number of patients walking through our door while increasing the number of patients who we help."

We all must become comfortable with telehealth. Most of us have locked our mindset on the obligation for in-person appointments for all audiological needs. We must overcome that mindset and face a new reality. Virtual visits are fast becoming an everyday occurrence for the patient's comfort and ease, if not for the clinic's bottom line. An entire patient population who would never have considered doing a WebX consult with their medical provider has now been forced into family Zoom chats, FaceTime cocktail hours and virtual religious services as the U.S. has sheltered in place. The Medicare patient's primary care physician has shifted to telehealth, exposing and converting our largest patient population to the convenience and utility of telehealth. Our patient population's mindset, which has evolved over the years, has been reshaped in a matter of weeks. We must capitalize on this opportunity for our patients, our students and our clinics.

There is an art form to an enjoyable and efficient telehealth visit, just as there is an art form to an excellent in-person consult. Those with high emotional intelligence capabilities (the capacity to know, control, and express one's emotions, and to handle interpersonal relationships judiciously and empathetically) can transfer their talents for use over virtual mediums in a few short sessions. For clinicians who struggle to read their patients even when in the same exam room, virtual visits will be as tricky.

Best Practices for Telehealth

Note when it is a patient's first virtual visit. Extra time should be allowed to resolve technological issues, equipment familiarization and rapport building.

1. *Be mindful of placing the camera. Generally, placing the camera higher than your eye line is a better angle than below. Avoid having to look down into the camera. Think about looking UP.*
2. *When you start the session, have a smile on your face before you hit a button. Keep it there until well after the patient has picked up. First impressions count, and this is yours.*
3. *Practice the art of looking directly into your camera, not at the patient's face, often. The patient will feel as if you are looking directly into their eyes and connect.*
4. *Speak slowly. Long pauses between the end of the patient's communication and the start of yours make interruptions and echoes non-events.*
5. *Do not multi-task. If you need to take notes, explain to the patient you are writing down their comments but continue to look back into the camera (at the patient) any time you ask a question. Without foreknowledge, the patient will think you are doing something unrelated to their visit.*
6. *Minimize all distractions and interruptions. No staff member should be allowed to break the flow of conversation you have with your patient. All alerts such as cell phone rings, etc. should be put on mute. Close other*

programs on your computer that provide both visual and audible alerts (email, messaging apps, etc.), because those can distract you and also be audible to the patient.

7. *Be mindful of time. State specifically to the patient in a positive manner the length of the visit at the beginning: "We get to spend the next 20 minutes together!" Alert the patient when time is waning. "Mr. Smith, I want to finish a few things now as we have five minutes left."*
8. *As you are saying goodbye, reiterate the positive gains in the patient's treatment plan that the virtual visit accomplished.*
9. *Put a smile on your face, look directly into the camera—which will appear to be directly into the patient's eyes—say goodbye and do not move as you disconnect. That last warm image will be the last impression of you by the patient.*

Once we have created the list of appointment types and their methodologies for telehealth, we need to categorize and prioritize appointment types and patient types. Save 10% of the clinic day for patients needing acute care, especially if the clinic manages medical emergencies such as sudden sensorineural hearing loss. Prioritize patients who are potentially the highest revenue-generating appointments. Arrange daily scheduling blocks to reserve at least 20% of a clinician's day for these patients. We cannot have patients who require much-needed treatment or complex diagnostic services that bring needed income into the clinic, waiting weeks for an appointment. Revenue from these patients provides needed cash flow and supports our services for other patients. Availability should be within days of their initial call.

Legalities and Constraints

As clinical audiology transforms into telehealth and a new pandemic and post-pandemic world, legal requirements and constraints will also shift. The first step in dealing with these evolving legalities and constraints is to investigate the constraints placed upon your particular clinic, given the requirements of your state and your university setting. Specifics need to be acquired, such as the legal ability and limitations of telehealth, HIPAA compliance and billing. The Department of Health and Human Services has urged states to relax requirements, but the states have varied wildly in their modification or nullification of telehealth laws. Some service areas have been increased to include neighboring states. Others remain limited to the state in which you practice. States have been very transparent in their changes, and modifications of this information should be readily available on the website under their COVID-19 Resources page, which will also include mandates for informed consent. Once the understanding of your state licensure and certification for telehealth has been investigated and documented, the next hurdle is the legal limitations of your state's Medicare requirements and any insurance contracts under which your clinic operates. Each contract should delineate what you can and cannot do for telehealth and for what you may bill. For most private carriers, if you can bill for face-to-face services, such as the hearing aid orientation or evaluation, you can bill for those services via telehealth.

LEGALITIES OF PROCESSING PERSONAL DATA

The next hurdle any university clinic may encounter is the restrictions placed upon them by the university itself. Just as states have varied in their response to the HHS recommendations, some universities have, as well. If your clinic exists in one of the universities that are as stringent today as it was in January of 2020, you will

be significantly limited by the choices you have for platforms going forward. To use any remote care options provided by hearing aid manufacturers, the university must:

- Ease firewalls for some of the software options
- Allow for consistent updates to be routinely installed promptly
- Provide access to telehealth platform options, such as Zoom or WebX, on university computers

The only other requirement is a good camera for your computer or a tablet with a stand. Inexpensive options are readily available.

Because every entity has modified requirements for billing and compliance, refer to your insurance contracts with private carriers, Medicare and any third-party payors for detailed guidance. Each company will have updated information on their website for compliance and billing purposes during and after the public health crisis. ASHA and AAA continually update their information for Medicare. Routinely check for this information to ensure a full understanding and implementation of compliance.

Many audiologists graduate thinking if they know audiology patient care, they understand an audiology clinic that performs patient care.

***NOT TRUE,** this is a myth. They are two different things.*

Business Practices and Producing Profit

Because universities are in deep financial trouble and will be for a long time, producing more profit is a necessity during and after the pandemic. Producing more profit could improve the university's audit of your program and save it from closure. Other than some small fees, most nonmedical university programs have tuition as their only revenue source. Audiology programs are fortunate because their clinics can produce not only revenue, but also profit. We have not traditionally operated our academic clinics as businesses. Now, we must not only because there are urgent, legitimate demands to produce a profit, but also because it provides an opportunity to teach business skills to students and to give them the business experience necessary to flourish after graduation.

A self-sufficient academic clinic will have processes and a culture that culminates in: *maintaining the highest level of patient care and student training while generating sufficient revenue to cover the cost of providing that quality care and clinical training.* And post-pandemic, universities will mandate that clinics make a profit that contributes to the program coffers rather than depletes them or remains revenue-neutral. To obtain these end goals, the clinic director must emphasize business practices and finances in addition to clinical excellence, patient care and clinical training.

"Every university president i've engaged within the last 60 to 90 days is looking for revenue opportunities."

– Brandon Bustee, President, University Partners

Like most clinicians who have gone through our traditional audiological education, the clinic director probably has limited business background and skills. Our long educational journey fails to prepare us to understand the business side of running departments or private practices deeply. Ask any ENT audiology director or private practice owner, and they will echo this sentiment: 'We don't know what we don't know'. Only when running a business or department, do we realize business management is a skill set we have not acquired in

our preparation for becoming a clinician. Most of us, the authors included, have had to make up for this lack of knowledge base with crash-courses in business practices, applications, strategy and methodology. The university clinic director now needs to do the same. Want a litmus test? If a clinic director does not know their cost per clinical hour, there is work to be done. Should they go back to get their MBA? No, they do not need to and most do not have the luxury of time. However, there are resources. Books, online seminars and outside consultants provide a wealth of information and assistance. Take advantage of these resources to meet your new responsibilities as a clinic director.

Successful businesses illustrate the vital need for a comprehensive business plan, goal setting, benchmarking, monthly profit, and loss (P&L) reviews and the monitoring of key performance indicators. Most of these have not fallen under the purview of the academic clinic director. Rewrite the job description, so the head of the clinic becomes the party responsible for the financial welfare of the clinic as if they owned it. While we don't intend this handbook to replace the vast business resources readily available, we will address the initial steps you should take.

You must implement best business practices to make the clinic profitable. Continuous improvement, a hallmark of best business practices, is essential. By gathering key performance indicators (KPIs) and methodologies, you can gather the information needed to guide your business planning and apply continuous improvements to your business model to get you through the crisis and into the new post-pandemic world. KPIs will be the new yardstick for the success of your clinic. Continual improvements in your clinic business model will grow profits, and profit will dominate over patient and student successes in the university's evaluation of your clinic and your program.

Academic audiologists must realize that the pain of prioritizing profit pales in comparison to the consequences of failing to change.

Worried about a nonprofit clinic making a profit? Your university is most likely a nonprofit. Nonprofit institutions, like for-profit organizations, can make a profit. Most must do so to survive. But, nonprofits are not taxed on their profit. That should tell you they are expected to make a profit.

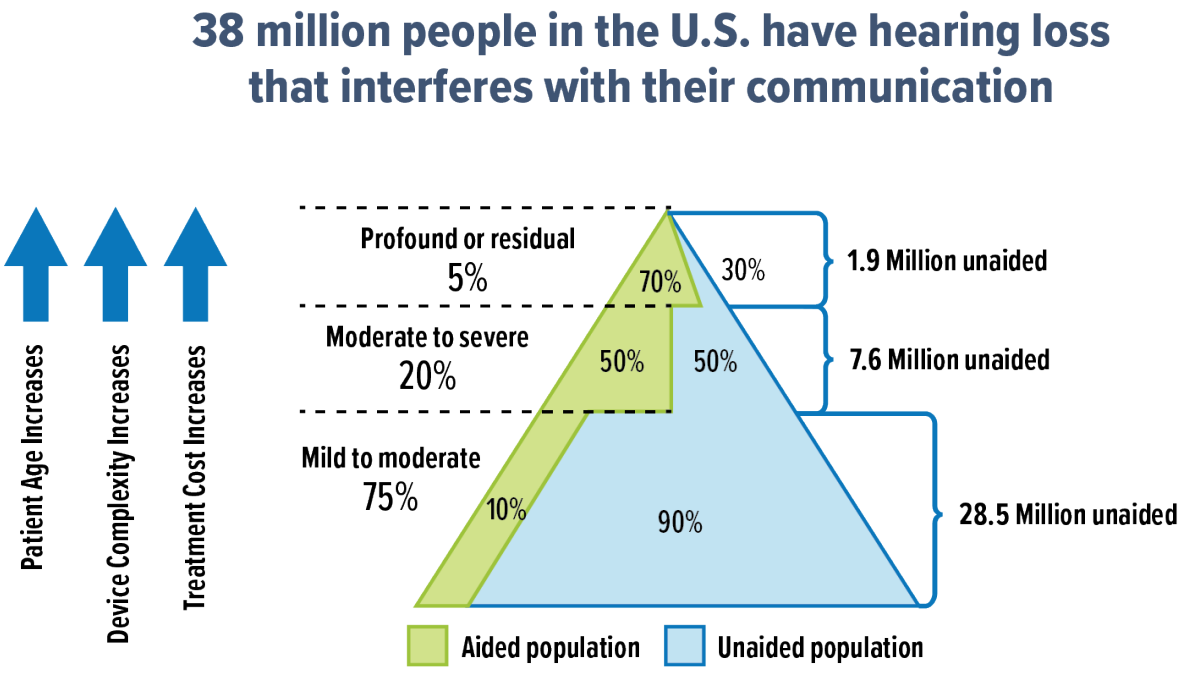
In a for-profit business, the profits accrue to the owners. A nonprofit organization must use its profits to further its missions, not to line an owners' private pockets. The more patients you help with needed treatment, the greater your profits will be. Funding an academic program and clinic through clinic profit is appropriate and necessary. Think of clinic profit as excess revenue to fund those less able to pay and to support your program and improve its status within the university. Market your nonprofit patient-focused status to compete with and differentiate your university clinic from for-profit rivals.

The recent change in our economy over such a short period puts in jeopardy many of our potential patients'

ability to purchase treatment plans. What do you have in your clinic that will help people afford treatment for their hearing loss? We need to make treatment more affordable to our patients but not through sacrificing revenue to the clinic. If you have only bundled pricing for your treatment plans, this is not the time to unbundle. A traditional unbundled strategy will make the treatment look far more affordable to a patient by creating an initial payment solely covering technology and some visits. But it will drastically decrease profit to the clinic.

Now is also not the time to lower the standards of care by providing only entry-level technology. Clinicians need not lower their standards of patient care to make care affordable. Instead, make sure that you have payment plan options and leasing or subscription options available to your patients, which will allow for a low monthly payment for a required high level of treatment. These outside entities like CareCredit will negate the financial liability of the clinic—the clinic will not be financing the patient—and will fund the revenue immediately to the clinic. Options for financing those with poor credit exist. Clinics need not extend themselves financially on a patient's behalf.

Get creative, offer trade-in value for older technology so your patients can upgrade. If your state allows for the sale of refurbished hearing aids, use these as a 'last resort' and the lowest option for treatment of hearing loss. List ancillary revenue-producing products. What can the clinic offer to continue producing revenue during the patient's treatment span? Assistive listening devices, extended warranties, repairs, additional service plans, when priced correctly, provide consistent patient care while creating revenue streams into the clinic.



Hearing aid uptake segmented by degree of hearing loss. Adapted from Nash 2013,8 Lin et al 2011,9 Lin et al 2011,10 and Wallhagen and Pettengill

The above figure presents another timely opportunity to be innovative and expand your patient base and student experiences. Note that 1.9 million unaided people have profound or residual hearing loss requiring powerful hearing aids or cochlear implants. Another 7.6 million unaided individuals have moderate to severe hearing difficulties and are most likely best served with sophisticated moderately priced hearing aids. The remaining 28.5 million unaided folks with hearing difficulties have mild to moderate hearing difficulties.

Previously, this population has not actively sought treatment, and we have not pursued them. But many of those 28.5 million will benefit from treatment, and we need to become their providers. This population may be well served by emerging high-quality, lower-priced PSAPS. Many of these offer sophisticated, active noise reduction, user-friendly phone apps, multiple microphones and directional hearing capabilities, which can focus on direct conversations in a noisy environment.

Even though the data in the figure are from 2011-2013, the shape of the triangle remains the same, and the population of people with mild to moderate hearing difficulties remains large. Entrepreneurial university clinics will seize the opportunity to establish trust with new, potential long-term patients and help low-income patients, by incorporating a PSAP or an OTC strategy in their clinics for the large population of patients with mild to moderate hearing difficulties. This provision of lower-cost services is especially important given the current state of the economy.

Au.D.s need not be involved in the provision of PSAPS. Audiology assistants and students can gain patient contact experience and provide the sales and minimum service at low cost or as part of their training. Incorporating this strategy importantly provides a good model and training opportunity for students. It allows you to establish trust and rapport with patients whose hearing difficulties will most likely grow with aging and require more sophisticated and profitable treatment in the future.

A little psychology goes a long way toward providing needed treatment.

To understand how and why patients accept or choose necessary treatment, we need to understand the psychology underlying the process of acceptance of, or choosing, the intervention. For too long, the mindset of the audiology profession is to wait for treatment until "the patient is ready" without acknowledging that, as audiologists, we can help our patients be ready for treatment. We recognize the audiology profession as the sole healthcare provider to help people come to terms with hearing loss, the choices available to treat it and to understand the ramifications if they choose not to treat.

Being the sole hearing healthcare provider is an overwhelming responsibility that requires consultative skills that go beyond patient education and are often ignored because they are labeled as "sales." We fail to recognize that our goal to only "educate" suggests that the logical thought process of [problem – education – acceptance of intervention] will not change a patients' attitude, mindset and denial. We need to change our way of thinking about using sales skills to influence a patient's choices for their greater good and acquire more than tools to help our patients make the best decisions. We must accept the reality that when we fail to help move our patients out of their emotional paralysis and into treatment for their hearing loss, *we have failed that patient.*

Converting a patient from considering a needed treatment to wanting and purchasing the treatment is more difficult in today's stressful economy. If you have previously not focused on the consumer psychology of the

patient sitting in front of you, now is the time to start. Moving a patient into acceptance is an art and science. It is also a skill set readily available and taught in every other industry that depends on sales for survival. It is blatantly missing from audiology education. Market penetration of treatment for those who need it has remained between 20-30% for decades. It means that as audiologists, we fail to move people into treatment more than twice as often as we *succeed*.

This low market penetration percentage is not a statistic of which to be proud. It is a glaring shortcoming that embarrassingly appears when academic audiologists are held accountable for producing revenue to fund their clinic or department. Diagnostics will not produce the needed revenue stream. Those days are gone if they ever existed. Treatment plans that produce high-quality patient care while generating thousands of dollars in profit are the way audiologists will survive. This missing piece of education that teaches audiologists how to move patients into acceptance needs to start early in a student's experience and should be modeled by the faculty. Until the mid-1970s, because audiologists could not sell hearing aids, they did not need to know how to sell. Selling and business were seen as "dirty."

Times have changed. University clinics and academic programs must embrace the psychology of sales to ensure the financial health of their clinic, the hearing health of their patients, and adequately prepare their students for the sales-dependent real world.

Economic and Demographic Factors: Who Can Afford Your Services

To understand the economic and demographic influences on hearing health care, we must first understand who requires care. According to the National Institute on Deafness and Other Communication Disorders (NIDCD), approximately 25%-33% of those aged 65 to 74, and 50% of those 75 and older have disabling hearing loss. Age is the strongest predictor of hearing loss among adults; 91% of adults with hearing loss are aged 50 and older, so we will focus on the financial situation of seniors and its implication for affording needed hearing treatments.

Which seniors can afford hearing aids? Let's look at their income, savings, and net worth and see. For a plurality, 40.6% of older Americans, Social Security benefits are their only source of income during their retirement (https://www.nirsonline.org/reports/examining-the-nest-egg/). Social Security was never meant to be the sole source of retirement income. Retired workers average a monthly Social Security benefit of $1,503 per month in 2020 or $18,036 per year– roughly the equivalent of a minimum-wage job. Add the debt levels among older

Americans, $96,984 for baby boomers, and $40,925 for the silent generation, and you have a situation that's a far cry from allowing seniors to purchase hearing aids at $5,000 per pair every five years. Savings offer little financial relief. Transamerica reports the estimated median savings for sixtysomethings is $172,000, which yields an estimated lifetime annuity monthly income of $873 or $10,047 per year.

A Slow Economic Recovery with Increased Economic Inequality

Federal Reserve Chairman Jerome Powell said the economy faces potentially significant long-term damage from the coronavirus pandemic despite recent signs of a rebound. He also warned that recent job losses had hit low-income workers hardest. Powell said he expected the economy to move through three phases. The first, a sharp contraction. The second, a bounce-back marked by significant increases in unemployment. The third phase would be a slow recovery keeping employment and economic activity below pre-pandemic levels for a long time.

We need to understand how these changes in the economy affect hearing health care and modify our healthcare services and training to align with these three phases. We must also enthusiastically support required changes and take advantage of new opportunities these economic transformations present. Without universal health care, this new economy will also sharpen health care inequalities and require us to have two clinic service strategies. One strategy is required for wealthy patients who can afford expansive treatments and will produce the necessary profit. A second, for people of less wealth who desperately need treatment, but cannot afford sophisticated expense care. This second strategy will not produce profit and should be designed as a breakeven strategy.

Net worth is the value the assets a person owns, minus the liabilities they owe. For seniors, we can look at net worth in two ways, The average (mean) and the median. The results are shown in the table.

Net Worth by Age

Age	Average Net Worth	Median Net Worth
65-69	$1,056,483.97	$209,575.26
70-74	$1,062,427.63	$233,614.37
75-79	$1,097,415.06	$242,699.75
80+	$1,039,818.04	$270,904.40

The average net worth is four or five times higher than the median. The vast inequality in income and net worth in the U.S. is the reason the average net worth paints a far rosier picture of senior wealth than the median. A few people possess most of the wealth, which skews the average toward a higher value. If net worth were normally distributed (Gaussian distribution), the average and the median would be the same value. For our purposes, the median net worth numbers are more telling. We see that 50% of our senior citizens have a net worth, which includes their houses, savings, and all oth-

er assets minus liabilities, of less than $243,000 or $210,000. Even the wealth in this lower-half net worth group is not distributed evenly; most seniors in this group have a net worth far less than $200,000, some have zero or negative net worth. Viewed another way, this lower 50% group cannot afford a pair of $5,000 hearing aids every five years. When providing seniors with health care, we must consider if they stand above the median of fall below it. We must create different strategies for the two groups.

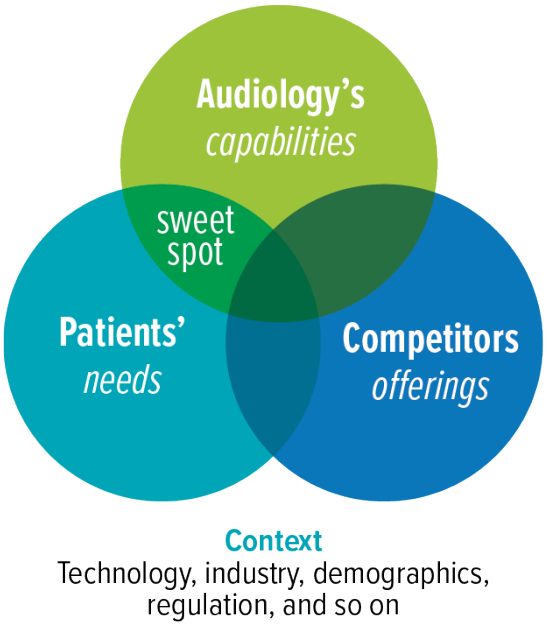
Headlines tell us that government pandemic subsidies and stimulus checks have resulted in increased savings. This savings is only valid for those above the median wealth value, especially those still working. The lower half and those not working have spent their government subsidies.

Educational attainment also has an influential role to play in determining retirement outcomes. Those with a college degree have significantly higher retirement incomes than those with only a high school education. When looking at the results of a demographic analysis of the area surrounding your clinic, focus your marketing on high income, highly educated populations to produce the most revenue and profit. It also is critical to identify primary care groups in those areas for physician group marketing.

Most hearing loss appears and grows in people aged 50 and above, The present-day trend is for able people to work longer and retire later. Employed people have more financial resources than those not working and fewer hours to access health care, so have early, late, and Saturday clinic hours that appeal to these working groups.

While hearing aids are the treatment of choice for many patients, we see many people cannot afford hearing aids at the average selling price (ASP) of $5,000 a pair, and a replacement every five years. The pandemic and associated economic downturn will increase the size of this group. As professional healthcare providers, we must find affordable solutions for this expanding group. We must create a strategy to serve this demographic. Entry-level hearing aids, refurbished hearing aids, PSAPS, OTCs, leasing and credit models previously suggested should be used in treating these patients with hearing difficulties, who cannot afford higher priced hearing aids. Our students must learn to cater to and treat both groups.

Marketing: Revise and increase marketing based on economics and the pandemic



Because of the pandemic shutdown, and in our increasingly competitive hearing healthcare environment, marketing is necessary to bring patients back into the clinic. Marketing will help you reach reluctant patients who need your services but have been putting the appointment off. Increasing the graduate student enrollment in your program is necessary to grow post-pandemic tuition income (Eddins and Nielsen, 2019, Nielsen, 2020), and more patients are necessary to give those additional students patient care experience.

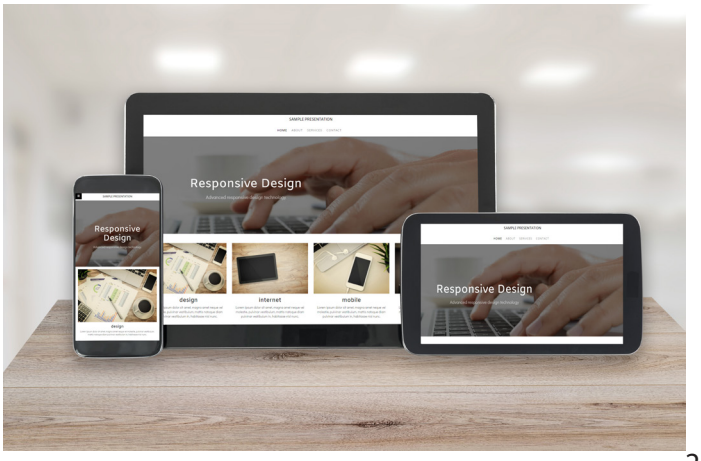
For those essential patients, marketing provides attractive pathways to the clinic. While altruistic and philanthropic care is often the focus of university clinics, funding these services has not been. Marketing should focus on targeting the socio-economic echelon that can afford the care you provide, which will, in turn, fund those who cannot afford care. Businesses cannot exist if the burn rate (i.e., spending) exceeds revenue. This realization is a significant mindset shift for almost everyone associated with community care, but one that must be made for a clinic to become self-sufficient. Boosting revenue and profit is essential to clinic and program sustainability in the new post-COVID-19 world of academia. Clinic profits can only grow by increasing your patient flow with patients acquired because they need and can afford hearing aids. To acquire them, you need a marketing plan and budget.

Marketing efforts for university clinics need to include the messaging of sophisticated care combined with the utmost safety and security for the patient's well-being. Your current and future patients need to know that they are well taken care of when walking through your doors. Make your infection control practices prominent in your marketing. Equally important is that academic clinic marketing strategies must emphasize the patient's experience, service and sophisticated testing, fitting, and rehabilitation, not products or price. We cannot compete with big box stores and manufacturer clinics with product and price strategies. Leave those strategies to them and to your competitors that depend on manufacturer support for marketing. They will not compete with us on the quality of patient care, service and thoroughness, and sophistication of diagnostic testing, so emphasize these, along with safety, in your marketing.

For decades, university audiology clinics have complained that they are the best-kept secret in town. Why? Because they did not plan to make their clinic known, valued and trusted in the community. For the first three or four decades of its existence, audiology depended on friends, family and physician referrals. In the most recent decade, competition has increased, and clinic promotion has become more sophisticated.

Now, in our economically depressed pandemic world, it is imperative universities incorporate a well-reasoned and well-funded professional marketing plan into their business models. Everyone must understand that marketing is not an expense. It is an investment, and the return on that investment (ROI) must be regularly calculated and tracked, and marketing strategies modified to increase the ROI.

Don't delay marketing until after the pandemic. Marketing does not work its magic overnight; it is imperative marketing begins immediately. Nielsen (2015), has described marketing university audiology clinics in detail, so we will limit our suggestions here to pandemic relevant updates.



- **Website marketing**

Excellent patient experience is critical to clinic success, and your website is your patients' first experience. It is the touchstone for every other type of marketing. No matter how people discover your clinic, they will evaluate it on its Internet site. You must have a strong Internet presence that is easily accessible,

painless to navigate, contains useful, uncomplicated information, makes it simple to make an appointment, and is updated continuously. It should be synchronized with your social media and email marketing and compatible with mobile, tablets and other devices. And, don't forget to make it ADA compliant!

Even before the pandemic (2016), Pew research showed 67% of people age 65 and older use the Internet. During the pandemic, Internet use by seniors must undoubtedly have increased. Internet use increases with education: 49% in seniors with a high school education or less, 76% with some college, and 92% with a college degree or higher. Use also increased with household income, with 94% of those with a household income of $75,000 or more using the Internet. Well educated seniors with higher incomes are Internet users. They are also the population that has the most need for hearing aids, 65+, and the ability to purchase them, $75K+. They are the perfect marketing niche for your academic clinic.

Today's patients want to know that your clinic is safe, what you do for infection control and what they must do to participate safely in the clinic. A website banner or information box that assists them in quickly finding this information is now a website necessity and should appear on every page.

People like videos. Include a video strategy for your website that includes:

- *Virtual tours* reduce uncertainty and allow the patient to shed medical visit anxiety and relax. Include tours that show the patient's path from parking to the clinic, the inside of the clinic, including waiting and exam rooms. Create a virtual open house video. To further reduce uncertainty, use videos to introduce faculty and staff to the patient, and explain your infection control procedures.
- *How-to instructional videos* can reinforce or remind patients what they were taught in the clinic. For instance, include how to change batteries, how to wear hearing aids and a face mask, how to connect to Bluetooth. Manufacturers may provide you with how-to videos for their products.
- *Educational videos* can appeal to medical providers and patients. Short videos explaining a disease, impairment, or treatment will find an audience as will diagnostic, treatment, and technology updates.
- *Topical commentary videos* take advantage of your university status and authority to inform family, patients, and physicians about contemporary hearing health issues.
- *Testimonial videos* are more effective than written testimonials because the patient can evaluate the person giving the testimonial; collect, and use them regularly.

Your clinic videos must be of high quality to reflect the quality of your clinical services. Be aware of who your audience is and add captions to videos. Most universities' have departments that train students in videography and marketing. Contact them and arrange for them to create your videos while training their students; they will appreciate the opportunity, and you can take the occasion to involve audiology students in the projects.

Don't forget to include a section of the website dedicated to physicians' use and building physician referrals. They want to know your clinic is safe and that you have remote services. They are also interested in knowing you will submit patient reports to them within 24 to 48 hours and that they will not lose patients outside of their group. Patient satisfaction testimonials will impress them. Show them a list of reasons they should send their patients to you. Some points that may differentiate you from non-academic clinics are:

- You take the time needed for your patients
- You provide fast, reliable scheduling
- You train professionals
- You have an active research program
- You specialize in tough cases
- You have a patient-focused, nonprofit orientation

People referred to your clinic by family and friends compose an essential group of potential patients that use your website as a touchstone to evaluate your clinic.

- **Reorganize and systematize your referral programs**

Because trust in institutions was eroding before the pandemic and has gotten worse, having a referral system based on trust, won through experience, is optimal for attracting patients during the pandemic and into the future. Patient referrals demonstrate trust in your clinical services and infection control procedures. Controlling expenses is critical in moving the clinic to profitability, and growing patient referrals is less expensive, then expanding retail or other forms of marketing.

- Everyone in the clinic, faculty, staff, and students must understand and continuously practice their role in the referral system. The referral scheme must be well organized and can no longer be optional or something that is done casually when remembered.
- Make collecting and publishing testimonials to infection control and safety, as well as patient care service, a routine part of your patient referral process.
- Use positive Internet reviews on sites such as Yelp as a form of patient referral.

- **Database marketing an inexpensive restart tactic**

During a shutdown, maintain contact with your patients for equipment repairs and other patient designated emergencies. Patients that are well-cultivated remotely during a shutdown will be quick to respond to office visits and hearing aid purchases when the lockdown is lifted. Holding your costs to a minimum is essential. Reactivating patients from the database is five to 25 times less expensive than recruiting new patients.

Preliminary data indicate there is pent-up demand for hearing aids due to the shutdown. Some of that demand is lingering in your patient database. The most promising database opportunities are patients in the tested not treated (TNT) category (those who needed hearing aids but did not purchase them) and those having their hearing aids for four or more years (4+). Pull these adult patients from your files and solicit their interests in learning about adjustments, upgrades, available new technologies, and new opportunities to lease expensive hearing aids or purchase less expensive options now available from you, their trusted expert.

Explain your new infection control procedures and include testimonials and solicit their endorsement when possible. Appoint one person responsible for winning back patients from these groups and have them report progress at staff meetings. Use email, letters, and phone calls to reawaken these groups. Be sure the front-desk staff knows and participates in this effort and can adroitly handle these patients by returning phone calls and converting them to appointments.

While you are making use of your database, also pull a list of referring physicians and cultivate their interests in maintaining or increasing referrals to your clinic. Reactivating these referral sources is less expensive than creating new ones. But, you will also need to build your physician referral system.

- **Cultivating Customer 4: A physician referral plan is mandatory in a post-pandemic world**

Because physicians routinely trust universities, university audiology clinics that establish rapport with medical practices will have an advantage over competitors in winning physician referrals. They will also capture a patient population that is preliminarily screened for hearing loss, and more likely at an actionable stage. The need to acquire actionable patients is more significant than ever in a pandemic-riddled down-economy.

What are the jobs physicians want you to do?

Medical practices want to understand which of their patients are at highest risk for hearing difficulties, how to identify them quickly and inexpensively, and to send those patients seamlessly on to where they will get safe, excellent care, and be pleased with the service. Many physicians now also want you to help them communicate better with patients with hearing difficulties.

MarkeTrak IX found: "The primary care physician (PCP) influences a sizable proportion of the market. The vast majority of consumers think of hearing aids as medical devices, and many consider a positive recommendation from their physician to be a key motivator…The PCP has an influence on a sizable portion of the market." (Abrams & Kihm, 2015).

Primary care physicians, and other medical practices, will continue to see patients remotely after the pandemic, so the medical community needs to be educated about detecting hearing difficulties when doing video or audio examinations and interviews.

- Does the patient demonstrate hearing difficulties in telehealth sessions?
- Does the patient turn the volume unreasonably high when participating in telehealth?
- Does the patient have trouble understanding someone wearing a mask or who is practicing social distancing?
- Does someone close to the patient think the patient is experiencing increased hearing difficulties with social distancing and face masking?
- Has the patient asked a speaker to remove her mask or move closer when speaking?

Audiology practices merged or affiliated with physician groups have consistently demonstrated that having a robust, reliable physician referral system can put your clinic on a firm financial footing. PCP groups have, on average, six physicians, each with 2500 patients. That is 15,000 patients, often heavily weighted toward seniors. Become the preferred hearing health care referral source for a few of these groups with a high senior demographic, and you can expand your clinic or open satellite audiology clinics! In our new pandemic reality, orderly, efficient, physician referral schemes are mandatory for establishing a steady stream of patients ready to have you treat their hearing difficulties. Building a physician referral program with the physician groups in your community requires an investment in resources. Still, it is the surest way to establish a sustainable source of patients and revenue. It also offers a needed training opportunity for students who should participate in the referral program as part of their outreach training and learning to work well with physicians.

EPILOGUE

As of this writing (early July 2020), the pandemic is resurging, and shelter-at-home mandates are being re-enacted. The world is not experiencing a second wave, it never got over the first. Some college campuses that were to reopen face-to-face are now changing their plans. Many faculty and students fear classes on college campuses.

We will be experiencing this harsh, persistent pandemic combined with an equally relentless and severe economic recession for a long time. The economy faces potentially long-term damage from the coronavirus pandemic, according to Federal Reserve Chairman, Jerome Powell. The Organization for Economic Cooperation and Development said, "Unemployment rates in the world's advanced economies will end the year higher than at any time since the Great Depression and not return to their pre-pandemic levels until 2022 at the earliest."

Meanwhile, state finances are a disaster and will set a new record low in 2021. The Congressional Budget Office has downgraded the economic outlook for 2020 to 2030. Vaccines typically take five years to develop, and 18 months is the fastest experts imagine. Until we have accurate testing, a proven vaccine and efficient tracking and isolation, the pandemic will be with us. But this dismal situation also presents opportunities and has clarified the problems that academic programs and their clinics have in common with their university. To remain relevant to their university and earn university support, academic audiology programs and their clinics must join with the university and focus on developing and executing solutions to these common problems. Blaming is not a solution.

Because of reduced state support, university programs must fund their existence with revenue from tuition, donations, and other sources, and tuition income and donations are decreasing. In sharp contrast to its history and tradition, academic audiology clinics must convert from centers of financial loss, or break-even, to growing profit centers to help provide financial justification and revenue for their existence. This conversion requires business planning that adapts to each of the three phases of the pandemic.

To successfully reopen the academic audiology clinic can no longer be the best-kept secret in town or on campus. The reimagined clinic must consider four customers; patients, students, the university and local physicians, whom they must win using professional marketing plans, adequate marketing budget and effective marketing strategies. They must also streamline procedures, incorporate infection controls, use telehealth to reduce the number of face-to-face visits and employ audiology assistants and hearing instrument specialists to provide high-quality lower-costs care whenever appropriate. They must focus on wealthy, well-educated patients to increase profits. Also, they must develop a break-even strategy to serve the lower half of the wealth pyramid, offer more accessible treatments for those at the lower section of the hearing loss triangle and become the preferred referral for local physicians.

Today's pandemic and economic crises demand tremendous change in higher education, a haven of tradition. These crises are less root-causes of change than change catalysts that have exacerbated existing long-term shortcomings we must now resolve. With the current tsunami wave of health care and higher education transformation comes a growing opportunity to surf that forceful wave and bring academic audiology and its clinics into the 21st century. This transformation tsunami is a wave we must ride skillfully if academic audiology and its clinics are to thrive and flourish. We hope this handbook is of assistance.

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Rose DuLude is dedicated to helping modern audiologists succeed.

Dr. DuLude's clinical experience includes the New York City institutions of Mt. Sinai, St. Vincent's and Manhattan VA. She has worked in the audiological department of large and small physician groups. Her management experience includes teaming with otolaryngologists and neuro-otologists as the director of Advanced Hearing Consultants and Noise and Hearing Consultants of America. She has owned many successful, private audiology practices and an audiology staffing company. She also founded an audiology-specific training company that has helped hearing healthcare professionals across the country create thriving practices.

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Dr. Nielsen's professional career has focused on hearing science, hearing health care, transforming organizations, and leading them through crises. He has held positions in academia as Director, Audiology Clinic, and Translational Research at Northwestern University, Professor and Chair of Speech and Hearing Department Washington University, Saint Louis and as an Assistant Professor at the University of Florida. Don has also served as Director of Otological Research at Henry Ford Hospital in Detroit, Executive Vice President, Research at the House Ear Institute in Los Angeles and Executive Director, Central Institute for the Deaf in St. Louis. He is a former President of the Association for Research in Otolaryngology. Don currently consults with Fuel Medical Group as the group's University Audiology Advisor and is the Founder of Don Nielsen Consulting, LLC.

APPENDICES

EXISTING BUSINESS MODEL FORM

Academic Clinic Traditional Two-Part Pre-Pandemic Business Model	Customer Priority One Students	Customer Priority Two Patients
Why are you in business?		
Who are your customers?		
What are you selling?		
How do you sell to your customers?		
Which abilities do you need to run the business?		

FUTURE BUSINESS MODEL FORM

Academic Clinic Quadripartite Business Model	Customer One Patients	Customer Two Students	Customer Three University	Customer Four Physician Groups
Why will you be in business in the future?				
Who are your future customers? Can you create new customers?				
What are you selling? List important unsatisfied customer jobs to be done. What jobs will the customer want to be done in the future?				
How do you sell to your customers?				
Which abilities do you need to run the business? List potential technologies and solutions leveraging your key capabilities and critical capabilities you must acquire				

RESOURCES

BUSINESS SUPPORT

Centers for Medicare & Medicaid Services (CMS): Guidance for Reopening Healthcare Facilities

https://www.cms.gov/files/document/covid-flexibility-reopen-essential-non-covid-services.pdf

WhiteHouse.gov: Guidelines for Opening Up America Again

https://www.whitehouse.gov/openingamerica/#criteria

America's SBCD: Small Business Resiliency Guide

https://docs.google.com/document/d/1Nd_J7tYCR_yEV7eMHK_XK9isFlwG9CUNL32H7ResRRA/edit

America's SBCD: Business Resiliency Webinar: Keeping the Lights On

https://www.youtube.com/watch?v=aoLS9lJn3Hk

The New York Times: State by State Reopening Map

https://www.nytimes.com/interactive/2020/us/states-reopen-map-coronavirus.html

Harvard Business Review: Leading Through Change

https://hbr.org/amp/2020/03/are-you-leading-through-the-crisis-or-managing-the-response

Centers for Medicare & Medicaid Services (CMS): Medicare Flexibilities to Fight COVID-19. (Related to charging for COVID testing prior to surgery, etc.)

https://www.cms.gov/files/document/covid-19-laboratories.pdf

Webinar: Giving Patients Choices: The Psychology of Pricing

https://covid-19.fuelmedical.com/webinar/session-2-giving-patients-choices-the-psychology-of-pricing/

TELEHEALTH

National Consortium of Telehealth Resource Centers (TRC): COVID-19 Telehealth Toolkit

https://www.telehealthresourcecenter.org/resource-documents/

Center for Connected Health Policy (CCHP): COVID-19 State-Related Actions

https://www.cchpca.org/resources/covid-19-related-state-actions

Webinar: Tele-Audiology Options for Audiology

https://covid-19.fuelmedical.com/webinar/tele-audiology-options-for-audiologists/

Telehealth Services for your Medical Practice FAQ:

https://covid-19.fuelmedical.com/crisis-response/telehealth/telehealth-services-for-your-medical-practice-faq/

Center for Connected Health Policy (CCHP): COVID-19 Quick-Glance Spreadsheet

https://www.cchpca.org/sites/default/files/2020-04/CHART%20STATE%20TELEHEALTH%20ACTIONS%20IN%20RESPONSE%20TO%20COVID%20OVERVIEW%204.1.2020.pdf

Academy of Doctors of Audiology (ADA): Telehealth Resource with International Classification of Disease (ICD) Codes

https://www.audiologist.org/_resources/documents/webinars/2020-03-23-Town-Hall-COVID-19.pdf

American Telehealth Association (ATA): Telehealth Quick Start Guide

https://cdn2.hubspot.net/hubfs/5096139/Files/Resources/ATA_QuickStart_Guide_to_Telehealth_4-10-20.pdf

Tele-Audiology in a Pandemic and Beyond: Flexibility and Suitability in Audiology Practice

By Bopanna Ballachanda, Harvey Abrams, James W. Hall III, Vinaya Manchaiah, Derek Minihane, Samantha Kleindienst Robler, De Wet Swanepoel, Audiology Today July/August 2020

https://www.audiology.org/audiology-today-julyaugust-2020/tele-audiology-pandemic-and-beyond-flexibility-and-suitability

Baily, A., 2020 Remote care apps: comparing the options ENT & Audiology News I july/august 2020 I VOL 29 NO 3 pages 40 – 43 I www.entandaudiologynews.com

Remote Testing: https://www.shoebox.md/

WORKPLACE SAFETY

Centers for Disease Control (CDC): COVID-19 and the global outbreak

https://www.cdc.gov/coronavirus/2019-ncov/

Occupational Safety and Health Administration (OSHA): Guidance on Preparing the Workplace

https://www.osha.gov/Publications/OSHA3990.pdf

Administrator Support Community for ENT (ASCENT): Practical Resources to Credible Sites

https://www.askascent.org/page/COVID19

Centers for Disease Control (CDC): Top 10 Clinical Tips on COVID-19 for Healthcare Providers Involved in Patient Care

https://www.cdc.gov/coronavirus/2019-ncov/downloads/hcp/fs-ten-clinical-tips.pdf

The American Academy of Otolaryngology-Head and Neck Surgery: Guidance for Return to Practice for Otolaryngology-Head and Neck Surgery

https://www.entnet.org/sites/default/files/guidance_for_return_to_practice_part_1_final_050520.pdf

Centers for Disease Control (CDC): Get Your Clinic Ready for Coronavirus Disease 2019 (COVID-19)

https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinic-preparedness.html

Safety Considerations and Checklist:

https://covid-19.fuelmedical.com/wp-content/uploads/2020/04/fm_safety-considerations-opening-practice-during-covid19.pdf

https://covid-19.fuelmedical.com/wp-content/uploads/2020/04/fm_safety-checklist-to-open-during-covid19.pdf

Daily Sanitary Schedule:

https://covid-19.fuelmedical.com/wp-content/uploads/2020/05/fm_daily_sanitizing_schedule_checklist.pdf

Centers for Disease Control (CDC): CDC Activities and Initiatives Supporting the COVID-19 Response and the President's Plan for Opening America Up Again May 2020

NOTE: This 60-page document was released the week of 5/18/20 and is a compilation of information and relevant links regarding a wide range of programs in response to COVID-19. If a person has a question about the government's expectations and guidance, it is in here.

https://www.cdc.gov/coronavirus/2019-ncov/downloads/php/CDC-Activities-Initiatives-for-COVID-19-Response.pdf

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Re-opening Plan Example

Kindly provided by the University of The Pacific

Contingency Plans for Re-opening Audiology Clinic and Resuming In-Person Care

University of the Pacific Hearing and Balance Center (San Francisco)

June 8, 2020

Revised July 2, 2020

The preliminary plan to reopen the audiology clinic in the wake of the COVID-19 crisis follows the most updated state and local public health guidance. The plan describes steps to ensure strict social distancing, minimize chances for exposure, personal protective equipment requirements, and proper cleaning and disinfecting protocols. All aspects of care have been considered to protect the welfare of clinicians, staff, patients, and students. The plan outlines the four main areas, based on the OSHA guidelines: https://www.osha.gov/Publications/OSHA3990.pdf and CDC recommendations for healthcare settings: https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html

1. Addressing risks associated with providing care, and establishing protocols to protect health care personnel (HCP) and patients from exposure to infection.
2. Determining appropriate levels of necessary medical care.
3. Enhanced infection control and physical distancing.
4. Availability of personal protective equipment (PPE).

The clinic director will check State and local health department notices about transmission in the area, continually evaluate the risk, and modify the plan as situations arise and change.

- Addressing risks associated with providing care and establishing protocols to protect HCP and patients from exposure to infection.

San Francisco Campus Protocols:

- Please see the current indicators that will guide the San Francisco Department of Public Health in determining the phase that the city will enter:

SFDPH Key Indicators

1. The trend of the number of new COVID-19 cases and hospitalizations per day.
2. The capacity of hospitals and the health system in the County and region, including acute care beds and Intensive Care Unit beds, to provide care for COVID-19 patients and other patients, including during a surge in COVID-19 cases.
3. The supply of personal protective equipment (PPE) available for hospital staff and other healthcare providers and personnel who need PPE to safely respond to and treat COVID-19 patients.
4. The ability and capacity to quickly and accurately test persons to determine whether they are COVID-19 positive, especially those in vulnerable populations or high-risk settings or occupations.
5. The ability to conduct case investigation and contact tracing for the volume of cases and associated

contacts that will continue to occur, isolating confirmed cases and quarantining persons who have had contact with confirmed cases.

From: ORDER OF THE HEALTH OFFICER No. C19-07c. San Francisco Department of Public Health. April 29, 2020

RESUMPTION PHASES (dates subject to change based on public health orders)

Phase 1—pre-return Shelter-in-place: Up until June 15, 2020

Phase 2— Modified Clinic Return: June 15 – July 29, 2020

Phase 3—New academic year August 31 - October 16, 2020

(Phase 4—Return to normal operations)

ASSUMPTIONS

For the purposes of planning, certain assumptions are made until further information is available. These assumptions will change over time, resulting in modifications to some of the plan.

Phase One (March 13–June 15, 2020)

1. Students and faculty will continue to shelter-in-place. All instruction will be remote, all clinic instruction will be remote.

Phase Two (June 15–July 24, 2020)

1. Building will be at 25% capacity
2. Patient load will be at 25% and increase incrementally, aiming to increase to 50-75% by September
3. Social distancing rules will be in place – 6 feet of personal distance
4. Screening of all entrants
5. Wearing face coverings
6. Online educational content continues through this period
7. Emergency-only patient care continues through May
8. Limited use of aerosol-generating devices (handpieces, ultrasonic scalers, air/water syringes)
9. Enhanced use of PPE (face shield, respirators, gowns, gloves and masks)
10. Patient care with students resumes on Week 1, with patients prioritized by needs
11. People returning from international travel will need to quarantine for 14 days
12. Personnel at risk for complications or high susceptibility to infection will be prioritized to work from home.
13. Scheduled Student hours may be necessary for clinics and simulation lab, including some Saturdays
14. Students and employees working in shifts to minimize number of people in the building
15. Increased communication with patients, students, employees.
16. Suspension of all extracurricular events on campus.

Phase Two and Three (July 3–September 25, 2020 or until social distancing and other public health orders are lifted)

1. Building capacity will begin to increase incrementally
2. Social distancing will continue
3. Face coverings potentially required
4. Continue screening of all entrants to the building
5. Increased use of aerosol-generating devices
6. Increases in number of patient visits
7. Preparation to pull back if required by health department (in case of a surge in new cases of COVID-19)
8. Extended hours may be necessary for clinics and simulation lab.
9. Increased communication with patients, students and employees continues
10. Suspension of all extracurricular events on campus

Phase 4 (date determined by public health department)

1. Resumption of normal activities
2. Continued additional sessions as needed to compensate for earlier closure and reduced clinic and simulation clinic experiences
3. All individuals return to campus
4. Resumption of extramural events

ENTRY TO THE BUILDING AND HEALTH SCREENINGS

During Phase Two, allow only employees identified as essential workers to enter the building. Emergency patients are seen by appointment only. Screening of patients and employees takes place as they enter the building. Patients are also screened by telephone the day before their appointment. Anyone who has symptoms of COVID-19 or has had an exposure within the past 14 days may not stay in the building. If they do not have a face covering, they will be given a mask and told to go home. If they are acutely ill, they are referred to their primary healthcare provider. All others must request access using the online visitor form. The crisis team reviews the request and the individual receives a response regarding their request the next business day if submitted before 3 p.m. Response on requests submitted after 3 p.m. will be within two business days. The crisis team informs Public Safety of the approved visit and the assigned time of the visit. Employees and students may not remain in the building to perform work that could be done remotely.

During Phase Two and Three, employee and student entry to the building is restricted and by assignment only. Visitors who are essential to operations or educational program will be allowed by prior appointment. During phase Two, employees and students complete the screening form in the COVID-19 dashboard just prior to leaving home for work. Any person who has positive symptoms will notify their Group Practice Leader, manager, or department chair. Approved visitors are screened upon entry to the building. Patients will continue as emergency-only for the first two weeks of Phase Two. Patients will be screened by telephone the day before their appointment, and then again when they present for care. After two weeks, a limited number

of patients will be given appointments and will be screened by phone the day before their appointment and again when reporting for treatment. When entering the building, and when moving around any areas of the building (except for a single person in a private office space) all occupants must wear face coverings. Surgical masks or other respiratory protection (e.g.; respirator) must be worn in accordance with the infection control policy when providing patient care. Masks and respirators are for patient care only.

During Phase Three, screening of patients, visitors and employees will be performed as recommended or required by public health agencies. Modification of schedules and assignment of students and employees in shifts will continue based on current public health orders.

During Phase Four screening of patients for respiratory illness will continue. Students and employees will no longer be screened, but will be instructed to report any illness and stay home for the duration of their illness.

General Infection Prevention Guidelines For All People

There are general hygiene practices that all people should take to protect themselves and other during the COVID-19 outbreak. Transmission of the virus that causes COVID-19 is possible through contact with respiratory droplets when an infected person coughs, sneezes or breathes. There is also a risk of transmission when a person touches contaminated surfaces and then touches the mucous membranes of their eyes, nose or mouth.

Environmental infection control

Individuals should take responsibility for their immediate work area by cleaning high touch surfaces (keyboards, telephones, lockers, etc.), and disinfecting as necessary. The members of the janitorial services will continue to clean and disinfect high-touch surfaces throughout the building, such as door handles and surfaces in the classrooms. When traveling between spaces in the building, occupants should avoid touching their faces, adjusting their face coverings, and should frequently perform hand hygiene.

Stay home when ill

Individuals must stay home when ill, particularly in the presence of respiratory symptoms and a fever. If diagnosed with, or under investigation for COVID-19, students should notify the Senior Advisor of Student Life, and contact the nurse practitioner in Student Health Services. Employees who are diagnosed with COVID-19 should notify the Assistant Dean for Human Resources and Support Operations, who will facilitate contact with the public health department in their contact tracing efforts.

Hand hygiene and cough etiquette

Everyone should observe good hand hygiene and cough etiquette practices. These practices include frequent hand hygiene using an alcohol based hand rub (ABHR) with 60%–95% alcohol, or handwashing with soap and water. Avoid touching the mucous membranes of your eyes, nose and mouth, and cover your cough or sneeze with a paper tissue which is then immediately discarded into a waste bin.

Face coverings, facemasks, and respirators

During the COVID-19 outbreak, San Francisco Department of Public Health (SFDPH) requires the wearing of face coverings for the general public at all times when away from home. The Centers for Disease Control and Prevention (CDC) has interim guidelines for the wearing of surgical facemasks and respirators for healthcare

workers who provide care to patients, and for face coverings for patients and others in the healthcare facility when they are not providing patient care.

While there is ongoing community transmission of COVID-19, everyone entering the building must wear face coverings. Face coverings are generally made of cloth, are reusable and are not a part of health care personal protective equipment (PPE). They are worn to reduce the risk of the wearer exposing others to potentially infectious respiratory droplet. People should avoid touching the face coverings, and if they touch them to adjust, should wash their hands both before and after touching the face shield. Face shield should be changed if they become soiled or moist, and should be laundered daily.

The use of surgical facemask in combination with other PPE is reserved for the delivery of patient care. Respirators are also reserved for patient care deliver, and are prioritized for procedures that involve aerosol generating devices such as dental handpieces. More specific information on the use of PPE for delivery of health care is in the Infection Control Protocol.

Source: Interim Infection Prevention and Control Guidance for Dental Settings during the COVID-19 Response https://www.cdc.gov/coronavirus/2019-ncov/hcp/dental-settings.html

The clinic director will check updates from the state (https://www.cdph.ca.gov/) and local health department (http://www.sfdph.org/) about transmission in the area, continually evaluate the risk, and modify the plan as situations arise and change.

Considerations when the state or local health department re-impose restrictions due to surges in new COVID-19 infection cases

1. Revert to phase one or phase two, based on the recommendation from the state and local health departments.
2. Decrease patient load.
3. Allow essential services only.
4. Recommend curbside service and telehealth appointments.
5. No students allowed in the clinic.
6. Suspension of all extracurricular events (i.e., seminar, training) on campus.

1.1 Workforce Considerations

Audiology personnel work in a setting that requires close contact with (i.e., within six feet of) patients who are at a high risk for contracting COVID-19 (i.e., elderly patients, patients with chronic disease). The following considerations are addressed to reduce the risk of exposure.

Classification of Essential/Non-Essential Worker

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In response to COVID-19, the US Department of Homeland Security has issued a list of "Essential Critical Infrastructure Workers." This list provides examples of "caregivers" who play a critical role in providing necessary services to patients, and who are involved in the continuity of care (https://www.cisa.gov/sites/default/files/publications/CISA-Guidance-on-Essential-Critical-Infrastructure-Workers-1-20-508c.pdf). Audiology services are critical for individuals with communication disorders, which include hearing loss, vestibular disorders, and other auditory disorders and should be deemed essential (https://www.asha.org/aud/Audiology-Service-Delivery-Considerations-in-Health-Care-During-Coronavirus-COVID-19/).

Staff working in the audiology clinic should also be deemed essential to support the functions of the clinic. However, staff should physically isolate and minimize patient contact as much as possible to reduce the risk of infection.

Non-essential personnel such as faculty, staff and students who are not involved in the audiology clinic should not enter the area of care nor communicate with the patients without consent.

Audiology clinic consists of four healthcare personnel, all of who should be deemed essential:

- One full-time audiologist, working five days a week; one day of administrative work from home
- One full-time Director of Clinical Education, working one day a week
- One full-time administrative staff, working five days a week
- One adjunct clinical faculty, working one day a week

High-Risk Personnel

According to the CDC guidance, the higher risk group include:

- People 65 years or older
- People with underlying chronic medical conditions, including chronic lung disease or moderate to severe asthma, serious heart conditions, immunocompromising conditions, diabetes, severe obesity, chronic kidney disease undergoing dialysis, and liver disease
- Pregnant and breastfeeding women

HCP who are at higher health risk for severe illness are encouraged to self-identify. The department will not make medical inquiries. Necessary steps will be taken to reduce the worker's risk of exposure (see: https://www.cdc.gov/coronavirus/2019-ncov/community/high-risk-workers.html

- HCP with higher risk will be assigned job tasks with minimized or no patient contact while exercising all precautions.
- An option to telework will also be encouraged when appropriate.
- Ensure social distancing, proper cleaning and disinfecting requirements, and healthy hygiene practices among HCP, staff and patients.

Steps for Provider, Staff, and Students to Reduce the Risk of Exposure

- Routinely self-monitor for fever and symptoms of COVID-19.
  - All personnel should be reminded to stay home when they are ill.
- All personnel will self-screen and self-report symptoms of COVID-19 at home before coming to cam-

pus. The San Francisco Campus has developed a smartphone app (also available as a website) where all faculty, staff, and students will have to self-report their temperature and symptoms. The app/website will then generate a QR code that will show on the app, or be emailed to the individual, which will be scanned upon entry to the building.

  - If individuals develop fever (≥100.0oF) or symptoms consistent with COVID-19 while at work, they should keep their facemask on, inform their supervisor, and leave the workplace.
  - Individuals who were symptomatic may return to work only when they receive medical clearance from their doctors.

- Avoid using other workers' phones, desks, offices or other work tools and equipment, when possible.
- Avoid crowding in a room and maintain at least six feet distance between each other.
- Encourage respiratory etiquette, including covering coughs and sneezes.
- Maintain regular housekeeping practices, including routine cleaning and disinfecting of surfaces, equipment, and other elements of the work environment.
- Follow the infection control protocols and use of Personal Protective Equipment (PPE) (described in a section below).

1.2 Facility Considerations/ Engineering Control

- A sliding glass barrier currently exists between the front office desk and the waiting area. This will be closed to facilitate physical distancing. The front office staff will use a lapel mic, with wireless speaker will be placed on the other side of the glass barrier to aid in communication.
- Supplies for respiratory hygiene and cough etiquette will be provided. These include alcohol-based hand sanitizer, tissues, and no-touch receptacles for disposal at the entrance, in the waiting room and in the exam room. This is also present and necessary for patient use upon entering the building.
- Waiting area: Patients will be instructed to wait just outside the Audiology Clinic.
- Chairs that have fabric (porous) material will be covered with a plastic chair cover.
- Items that cannot be disinfected, such as magazines, brochures, and other paper materials, will be removed from the waiting areas.
- Friends or family members of the patients are prohibited to enter the building unless absolutely necessary for caregiving or language interpretation. Otherwise, they will be instructed to wait in their cars. Visitors accompanying the patients will be pre-screened in the same way as patients. Patients are notified of this when they are scheduling their appointments

1.3 Patient Considerations

Before Arrival

- All patients must be screened for potential symptoms of COVID-19 prior to their appointment. Screening will occur when the phone appointment is being scheduled as well as 24 hours before the appointment. Patients who cannot be reached 24 hours before their appointment will not be allowed into the building for their appointment (this information will also be provided during appointment scheduling).

See attached order from SFDPH re: health screening questions.

- Following orders from the SFDPH, all patients and the accompanying person will be instructed to bring a facemask or a face covering from home. Mask/face covering is required when entering the building and during the appointment. A sign will be placed by the entrance door stating that "A Face Covering is Required Upon Entry."
    - If patients indicate that they do not have a mask or a cloth face covering, the clinic will provide them a facemask.

Upon Arrival and During the Visit

- During appointment scheduling, patients will be reminded that they must arrive promptly (neither early nor late) as this will impact the social distancing protocols outside the building, as well as the patient check-in procedures upon entering the building (temperature checks).
- Patients will be required to use hand sanitizer when they enter the building.
- Screening protocol: Ask all patients upon entry to the facility if they have a fever or symptoms of COVID-19 described above. Check temperatures using an infrared thermometer.
    - Patients whom we suspect to be symptomatic or have fever higher than 100.0 F will be sent home and referred to their primary care physician for follow up care.
    - Immediately disinfect surfaces that were within six feet of the symptomatic patient in the waiting area.
    - Patients who pass the screening will be sent to the appropriate waiting areas.
- The reception counter, chairs, and the common spaces in the waiting room areas will be disinfected by the administrative staff as soon as the patient is called into the exam room.

After the Visit

- Patient and visitor (if any) will leave the building (assigned SF campus staff will be monitoring patient flow both in and out of the building).
- The reception counter, chairs, and the common spaces in the waiting room areas will be disinfected by the administrative staff as soon as the patient leaves the building.
- Any room used by the patient will be given 15 minutes before staff disinfect it to let the air in the room settle down.

2. Determining appropriate level of necessary medical care

Prioritizing essential services

The clinic will evaluate the necessity of the care based on clinical needs. The following appointments are deemed prioritized:

- Suspected sudden sensorineural hearing loss
- Monitoring for ototoxicity
- Acute vestibular issue
- Hearing aid fitting

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- Follow-up on hearing aid trials
- Lyric fitting/replacement and follow-up
- Hearing aid adjustment/troubleshooting that cannot be resolved via phone call, telehealth, or a drop box service
- Hearing evaluation for decreased hearing sensitivity or concerns over reported otologic-related symptoms
- Tinnitus evaluation and management

Essential services will be seen first once the clinic resumes operations. Non-urgent appointments, such as routine hearing evaluation and follow ups, will be rescheduled to the later date or when the schedules are freed up from the essential appointment backlog.

Schedule Adjustment

- In the early phase of clinic reopening, Patient load will be around 35-45%. The number of patients seen by each HCP will reduce from eight to ten patients per day to four to five patients per day.
- 30-minute buffers will be scheduled between patient appointments to allow extra time for proper infection control procedure.
- Staggered schedule has been created to mitigate the numbers of patients in the waiting area. No more than two patients are scheduled to arrive at the same time.

	Shu-En	Cherysse	Mateel	Heidi	Alyssa
7:30 - 7:45	M, Tu, W, F	Mondays only	M, Tu, W, Th	Tu, W, Th	W, Th
7:45 - 8:00	No clinic				
8:00 - 8:15			Patient 1	Patient 1b	
8:15 - 8:30					
8:30 - 8:45					
8:45 - 9:00					

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9:00 - 9:15	Admin				
9:15 - 9:30			Patient 3		
9:30 - 9:45				Patient 4	
9:45 - 10:00					
10:00 - 10:15		Patient 5			Patient 5a
10:15 - 10:30					
10:30 - 10:45			Patient 7		
10:45 - 11:00					
11:00 - 11:15				Patient 8	
11:15 - 11:30		Patient 9			
11:30 - 11:45					
11:45 - 12:00					Patient 11
12:00 - 12:15			No patients	No patients	
12:15 - 12:30	No patients				
12:30 - 12:45		No patients			No patients
12:45 - 1:00					
1:00 - 1:15			Patient 12	Patient 12a	
1:15 - 1:30	Patient 13				
1:30 - 1:45		Patient 14			Patient 14a
1:45 - 2:00					
2:00 - 2:15					
2:15 - 2:30					
2:30 - 2:45	Patient 15				
2:45 - 3:00				Patient 16	
3:00 - 3:15			Patient 17		
3:15 - 3:30		Patient 18			
3:30 - 3:45	Patient 19				Patient 20
3:45 - 4:00					
4:00 - 4:15					
4:15 - 4:30					
4:30 - 4:45					
4:45 - 5:00					
5:00 - 5:15					Patient 21
5:15 - 5:30		Patient 22			
5:30 - 5:45					
5:45 - 6:00					

- Patient load may increase incrementally, per approval of the University Emergency Response Task Force.

Promote Telehealth Appointments

The use the telehealth will be utilized for nonessential appointments or parts of essential appointments (e.g., case history, hearing aid orientation) to minimize face-to-face appointments and limit human contact.

Adding a Hearing Aid Curbside Service

The hearing aid curbside service will be offered for existing patients who need troubleshooting with their hearing aids. This service will only be available on limited days and times (to be determined pending scheduling). The goal is to minimize crowding of the waiting area. Patients who decide to drop their hearing aids for service will follow the protocol below:

1. The patient is verbally screened for either cough or fever prior to scheduling the hearing aid/device drop-off.
2. The patient schedules a time to arrive at the clinic parking lot.
3. The patient will be instructed place their hearing aid(s)/devices(s) on the disinfected tray left outside of the building door.
4. The patient will return to their car and wait in their car for the assessment of the device.
5. HCP, with gloves on, will retrieve the tray and bring them to a hearing aid workroom. The tray and hearing aid(s) will be disinfected.
6. HCP will then troubleshoot the device(s).
7. Upon completion of the assessment, the staff/audiologist will call the patient who is waiting in their car to deliver the appropriate recommendations and diagnosis.
8. Device(s) will be placed back on the tray for the patient to retrieve. Devices that cannot be repaired in the office will be sent to the manufacturer for repair.
9. The tray will be disinfected before being used for the next patient.

3. Updated Standard Precautions and Infection Control

Due to COVID-19 situation, droplet precautions will be practiced to prevent and reduce the risk of exposure to pathogens transmitted by respiratory droplets. Anyone working in the Hearing and Balance Center must adhere to the policies and procedures set forth regarding precautionary measures to be taken to minimize the risk of infectious transmissions (see: https://www.osha.gov/Publications/OSHA3990.pdf).

Availability of Disinfectant and PPE in the clinic

Items	Manufacturers	Purpose	Location(s)
Sink + Soap	Health Guard Advanced Antibacterial Hand Soap	Handwashing	- Outside the Preceptor office - Hearing aid repair lab

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Alcohol-based hand rub (ABHR) dispensers*	SJC Family Company	Hand hygiene	- Building entrances - Waiting room area - Outside of the booth area - Hearing aid repair lab
Alcohol-based hand rub (ABHR)	Purell Hand Sanitizer Gel	Hand hygiene	- All exam rooms - Admin room - Hearing aid repair lab - Waiting room area
Disinfectant wipes**	Sani-Cloth Plus Germicidal Disposable Cloth, CaviWipes	Surface disinfection	- All exam rooms - Hearing aid repair lab - Front office desk area
Sterilizing solution	Sporox-II Solution	Instrument sterilization and disinfection	- Hearing aid repair lab
Ultrasonic machine (machine will not be used so as to not aerosolize any germs)	Ultrasonic Machine	Instrument sterilization and disinfection	- Hearing aid repair lab
Blood borne pathogen container***		Disposable bin for items contaminated with blood or bodily fluid	- Hearing aid repair lab
Gloves	Vinyl Gloves	PPE	- Hearing aid repair lab - Front office desk
Gowns	Nonsterile, disposable patient isolation gowns	PPE	- Hearing aid repair lab
Surgical Masks	Procedure Face Masks with Ear Loop	PPE	- Hearing aid repair lab - Front office desk area
Respirator Masks	N-95	PPE	- Hearing aid repair lab
Cloth masks with clear panel	Cloth masks with clear panel	PPE	- Hearing aid repair lab
Face Shield	Face Shield	PPE	- Hearing aid repair lab
Thermometer	No-touch Forehead Thermometer	Infection control measure	- Hearing aid repair lab

* Installed by University Physical Plant

** EPA-registered, List N for use against SARS-CoV-2

*** The waste in this container is not to be touched and will be disposed of through the University Safety office.

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Hand Hygiene

Hand Hygiene should be completed upon arrival at work, before and after contact with patients, contact with potentially infectious material, before putting on and after removing PPE, including gloves, and before going home. If hands come in contact with blood or body fluids, they should be immediately washed with soap and water. Hands should also be washed after sneezing, coughing, or wiping a nose.

Providers, staff, students and patients should perform hand hygiene by using ABHR with 60-95% alcohol or washing hands with soap and water for at least 20 seconds. If hands are visibly soiled, use soap and water before returning to ABHR.

Personal Protective Equipment (PPE)

All HCP in close contact with patients is required to wear the following PPE: **gloves, NIOSH-approved N95 filtering facepiece respirator or a facemask, a face shield, and a disposable gown.**

HCP who are separated from patients by a physical barrier such as a glass or plastic window is not required to wear PPE but should continue to wear facemask or cloth mask inside the facility.

Follow the sequence for putting on PPE, based on the CDC guidance:

1. **Perform hand hygiene using hand sanitizer.**
2. **Put on isolation gown.** Tie all of the ties on the gown. Assistance may be needed by another HCP.
3. **Put on a facemask.** Do not wear facemask under your chin or store in scrubs pocket between patients.
    - **Respirator**: Respirator straps should be placed on crown of head (top strap) and base of neck (bottom strap). Perform a user seal check each time you put on the respirator.
    - **Facemask:** Mask ties should be secured on crown of head (top tie) and base of neck (bottom tie). If mask has loops, hook them appropriately around your ears.
4. **Put on face shield.**
5. **Perform hand hygiene before putting on gloves.** Gloves should cover the cuff (wrist) of gown.
6. **HCP may now enter patient room.**

Follow the steps to safely remove the PPE

1. **Remove gloves.** Care should be taken so that the clinician does not touch the contaminated portion of the glove. To remove gloves safely use the following procedure:
    - Peel off one glove from the wrist to the fingertip;
    - Grasp it in the gloved handed;
    - Using the bare hand, peel off the second glove from the inside, tucking the first glove inside the second glove as it is removed.
    - Wash hands after gloves are removed.
    - Contaminated gloves are usually thrown away in a regular waste container.
2. **Remove gown.** Untie all ties (or unsnap all buttons). Some gown ties can be broken rather than untied. Do so in gentle manner, avoiding a forceful movement. Reach up to the shoulders and carefully pull

gown down and away from the body. Rolling the gown down is an acceptable approach. Dispose in trash receptacle.

3. **HCP may now exit patient room.**
4. **Perform hand hygiene.**
5. **Remove face shield.** Carefully remove face shield or goggles by grabbing the strap and pulling upwards and away from head. Do not touch the front of face shield or goggles.
6. **Remove and discard respirator (or facemask if used instead of respirator).** Do not touch the front of the respirator or facemask.
   - **Respirator:** Remove the bottom strap by touching only the strap and bring it carefully over the head. Grasp the top strap and bring it carefully over the head, and then pull the respirator away from the face without touching the front of the respirator.
   - **Facemask:** Carefully untie (or unhook from the ears) and pull away from face without touching the front.
7. **Perform hand hygiene after removing the respirator/facemask and before putting it on again if your workplace is practicing reuse.**

Protocol for Use of PPE

Gloves

- Always change gloves after use on each patient
- Change gloves as needed. If gloves become torn or heavily soiled and additional patient care tasks must be performed, then change the gloves before starting the next task.
- Discard them in the appropriate receptacle. Gloves should never be washed and used again.

Facemasks

- The facemask should be removed and discarded after each patient encounter, or if soiled, damaged, or hard to breathe through.
- HCP must take care not to touch their facemask. If they touch or adjust their facemask, they must immediately perform hand hygiene.
- HCP should leave the patient care area if they need to remove the facemask.
- For cases where patients have significant hearing disability or speech discrimination difficulties, the provider will use a cotton clear mask, or face shield only for the duration of the appointment (https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/COVID-19/Guidance-for-Face-Coverings_06-18-2020.pdf (See page two, bullet points three through five under the section of "The following individuals are exempt from wearing a face covering.")

Face shield

HCP may wear the same face shield for encounters with different patients throughout the day. A face shield can then be cleaned and disinfected at the end of the day. Other considerations include:

- A face shield should be dedicated to one HCP and cleaned whenever it is visibly soiled. See protocol for removing and cleaning the face shield below:
    1. While wearing gloves, carefully wipe the inside, followed by the outside of the face shield using a Sani wipe.
    2. Carefully wipe the outside of the face shield using a disinfectant wipe (Sani-Cloth or CaviWipes).
    3. Wipe the outside of face shield or goggles with clean water or alcohol to remove residue.
    4. Fully dry (air dry or use clean absorbent towels).
    5. Remove gloves and perform hand hygiene.
- A face shield should be discarded if damaged (e.g., face shield can no longer fasten securely to the provider, if visibility is obscured and reprocessing does not restore visibility).
- HCP should take care not to touch the face shield. If they touch or adjust the face shield they must immediately perform hand hygiene.
- Face shields may be removed during procedures that require use of a loupe system, and or, any procedure in which the face shield obstructs visual field or contact to the patient.
- If face shields are causing too much difficulty for a specific provider due to their anatomy and face shield fit, safety goggles will be used as a substitute pending approval by the clinic director.

Gowns/Cuffed lab coats

HCP and students may wear the same gown/cuffed lab coat for encounters with different patients throughout the day. Considerations regarding reuse of the disposable gown/cuffed lab coat include:

- The gown/cuffed lab coat should be removed and discarded after the last patient encounter, or if soiled, or damaged.
- HCP must take care not to touch the outer surface of the gown during care.
- HCP should leave the patient care area if they need to remove the gown/cuffed lab coat.

Surface Disinfection

Each clinician is responsible for cleaning test equipment and materials at the end of an appointment. If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection. An EPA-registered, hospital-grade disinfectant (i.e., Sani-Cloth Germicidal wipe or CaviWipes) should be used for disinfection. **Disposable gloves should be worn for all tasks in the cleaning process, including handling trash.** This protocol will be used on:

1. Tabletops and chairs between clients
2. Any equipment or materials handled or worn by patients
3. The reception counter, seating and the common spaces in the waiting room area
4. Hard surfaces in the exam room (table, chairs, counters, door handles, etc.)
5. Telephones

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The reception counter and the waiting room areas:

The reception counter, chairs, and the common spaces in the waiting room areas will be disinfected by the administrative staff as soon as the patient is called into the exam room.

Exam room:

Earphones and bone oscillators of the audiologic equipment should be disinfected between patients by the clinician. Chairs, table, counters, keyboard, phone, and door handles will also be disinfected between patients. Specula, probe tips, and any other equipment that are single-use are to be thrown away in a waste container. Instruments that can be sterilized following a chemical sterilization procedure will be placed in a plastic bin which will be taken to the hearing aid lab as needed.

Handling Hearing Aids and Earmolds:

Hearing aids and earmolds are assumed to be contaminated and therefore should always be handled with gloved hands or with a disinfectant wipe. The following steps will be followed when receiving these items:

1. Receive the instrument/earmold in a disinfectant wipe or gloved hand.
2. Use a disinfectant wipe to clean the surface of the instrument.
3. A hearing aid stethoscope may be used on an instrument/earmold that has been disinfected properly. Disinfect the stethoscope prior to attaching it to another instrument. The person using the stethoscope should disinfect it after use. Stethoscopes in the hearing aid lab should be placed in separated Ziplock bags for each HCP.

Earmold Disinfection

Patient earmolds that need to be disinfected will first be washed with soap and water. The earmold will be placed in the ultrasonic machine in an individual container containing a solution of Audiologists Choice Ultrasonic Disinfectant and water (diluted at a rate of three to four ounces per gallon of water) for three minutes. Once complete, remove earmolds from the liquid, rinse thoroughly with water for two minutes, and wipe dry.

Tool and Instrument Sterilization (Cold Sterilization)

- Place the dirty tools and instruments that are not contaminated with blood in a plastic emesis bin for later cleaning and sterilization
- Immediately after the last appointment of the day, the bins are to be brought to the hearing aid lab by designated personnel. Designated personnel must wear gloves while transporting the container.
- While wearing gloves, clean the soiled tool with disinfectant wipes. Carefully place all the instruments in the appropriate plastic tray containing cold sterilant, making sure that all instruments are completely submerged in the solution
- Cover the tray and allow the instruments to soak overnight (or at least six hours)
- Remove gloves and wash hands.

Retrieval of sterilized instruments

- After cold sterilization is complete, put on a fresh pair of gloves.
- Remove all instruments from the solution, placing each instrument on a designated tray.

- Rinse instruments in a sink designated as a cleaning sink.
- Allow instruments to air dry.
- Return instruments to their appropriate location(s) for reuse. Cold sterilant should be changed according to manufacturer's instructions or sooner if the solution becomes visibly soiled

Instrument that needs to be sterilized include:

- Curettes
- Alligator forceps
- Cerumen removal stainless steel tools (Billeau Loop, Lucea ear hook)
- Suctioning tubes
- Lyric removal/insertion tools
- Specula tips

Additional Considerations to Minimize Chances for Exposure

- Leaving the door to the exam room open, so the doorknob is one less surface to touch.
- Encourage patients to use hand sanitizer when they enter the clinic space.
- Do not shake hands in greeting and minimize physical contact in general.
- Follow normal preventive actions while at work and home, including cleaning hands and avoiding touching eyes, nose, or mouth with unwashed hands. Additional key times to clean hands include:
  - After blowing one's nose, coughing, or sneezing.
  - After using the restroom.
  - Before eating or preparing food.
  - After contact with animals or pets.
  - Before and after providing routine care for another person who needs assistance such as a child.

Sanitizing Schedule and Checklist

The checklist below will be given to each HCP to provide guidance on what should be sanitized throughout the day and to track if the sanitization is complete.

ITEMS TO SANITIZE AFTER EACH USE	EACH USE	AT OPEN	10.30 A.M.	2 P.M.	AT CLOSE
FRONT DESK/WAITING ROOM					
Doorknobs					
Credit card machine					
Electronic signature pad					
Pens					
Countertop of the front office desk (patient facing)					

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Curbside Basket					
PATIENT ROOMS					
Doorknobs – in and out					
Sound booth door handle – in and out					
Hearing/medical devices – prior to patient contact					
Hard surfaces (tables, countertops, supply cabinets)					
Chairs					
Keyboards					
Computer mouse					
Testing equipment (audiology):					
Patient response button					
Transducers used during the testing					
Audiometer					
Impedance bridge					
OAE machine					
Otoscope					
Verifit machine					
Hearing aid programming device					
ITEMS TO SANITIZE AT SCHEDULED TIME					
FRONT DESK/WAITING ROOM					
Barriers at reception					
Doorknobs (don't forget to wipe the door too)					
Pens & receptacles					
Telephones – earpiece and keypad					
Chairs - arms & backs - waiting room & office					
Light switches					
Keyboards					
Computer mouse					

All hard surfaces – counter/table-tops, end tables,					
File cabinets					
All shared work tools – calculator, scissors, clipboards, etc.					
Wireless speaker to aid in communicating with individuals who are deaf or hard of hearing					
PATIENT ROOMS					
Light switches					
Tabletop items					
Tools and instruments					

4. Availability of Disinfectant and Personal Protective Equipment (PPE)

Disinfectant Inventory

Items	Available Quantity
Alcohol-based hand rub (ABHR)	15 bottles (500 mL), four bottles (350 mL)
Sani-Cloth disinfectant wipes	To be provided by Dental (65/canister)
Sporox-II Sterilizing solution	One-gallon bottles
Antibacterial hand soap	Provided by facilities

PPE Inventory (updated 5/4/20)

Items	Available Quantity	PPE Utilization Rate per Month*	How many months will the supply last?
Gloves	Size XS = 4 boxes(100/box) Size S = 4 boxes (100/box) Size M = 4 boxes (100/box) Size L= 4 boxes(100/box)	Two gloves per patient Total Consumption ~ 72gloves/week**	Dental has assured continuous supply for at least 6 months on top of reported inventory here.
Surgical face masks	Four boxes (50/box) Total = 200 masks	one mask per day Total Consumption ~ Nine masks/week	Dental has assured continuous supply for at least six months on top of reported inventory here.
Reusable cloth face masks with clear panel	To be Ordered	Reusable	N/A

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N95/KN95 respirator masks	10 masks	Reusable	Dental has assured continuous supply for at least 6 months on top of reported inventory here.
Face shield	14 shields	Reusable	N/A
Disposable gowns	144 gowns	One gown per day Total Consumption ~ six gowns/week	Dental has assured continuous supply for at least six months on top of reported inventory here.

**Average of four patients seen per day.

* Please note, for full PPE estimates, see: https://docs.google.com/spreadsheets/d/1FznfZhl4PSZP7I9mbOc_R2D2EuUDcl3JUkOq8RMgW1Q/edit#gid=0