CONFRONTING BIAS IN DENTISTRY: CLINICAL CARE AND CHRONIC HEALTH CHALLENGES

By: Matthew A. Weed, Ph.D.

Sponsored by The University of Minnesota School of Dentistry's Office of Faculty Development and the Diversity, Equity and Inclusion Committee

GENERAL MEDICAL HISTORY:

- At least some **loss of sight** diagnosed at six weeks
- Total **blindness** by age eight
- **Type I Diabetes** diagnosed at age one
- **Massive seizures** caused by out-of-control blood sugar due to diabetes
- Family was informed that I had a **50% chance** of surviving to five years of age
- Had **three comas** before my fifth birthday
- Physicians did not expect me to live past 21 years old

WHEN SOMETHING WORKS, BE OPEN TO KEEPING IT GOING NO MATTER HOW OLD OR STRANGE

- Harvard doctor looked at my med routine (two shots a day of mixed regular and NPH insulin)
- Although 20 years "out of date" he kept with it.
- This was done because it was empirically working, and other options would have been hard to manage.
- He had led and published newer four-shot-a-day routines that were consider the standard in the mid-1990s.

CONTINUED…

- They would have offered greater theoretical control.
- However, they would have been impossible to carry out given the resources I had available.
- Making changes just to do the newest thing is not always best
- For example: If a filling looks a bit worn and could be replaced, but no actual pathology is present, the patient may prefer just to “watch”.

David M. Nathan, MD

WHEN SOMETHING WORKS FOR A PATIENT, DON’T BE OVERT IN CRITICIZING IT IF YOU THINK SOMETHING IS ‘BETTER’ OUT THERE

- Not long ago, an endocrinology fellow wondered why I still used NPH (medium duration).
- NPH is now considered very old technology.
- Its particular action curve let me avoid worrying about a noontime blood sugar check and insulin draw.
- This was important because there were times when such could not happen due to lack of volunteer assistance.

CONTINUED

- At times, data may say newer or different protocols are ‘better’.
- For some patients, these may not be possible to implement for practical or other reasons.
- So please be careful about criticizing even if you think their routine is old or odd in some other way.
- If a patient is empirically doing well, be careful about judging their protocol as this makes the patient—and the hard work they put in to stay healthy—feel disrespected.

DON'T GET CAUGHT BY SHINY NEW MEDS AND TOOLS

- Health professionals sometimes forget each patient's situation is unique.
- This can be particularly impactful for those with unusual or challenging situations and trusted regimens.
- Do your best not to be subject to marketing of "miracle cures/devices".
- As change for change's sake does not always serve patients or the healthcare system well.

https://www.latimes.com/opinion/story/2021-05-16/healthcare-harm-doctors-culture-prevention-unnecessary-procedures

https://khn.org/news/article/why-your-dentist-might-seem-pushy/?utm_campaign=KHN%3A%20First%20Edition&utm_medium=email&_hsmi=128154932&_hsenc=p2ANqtz--ECGRj-GnLp692jiuQoAYvHO3100aifS5Rfaxn4XBbk3W7tQ8AbB2Phzki-fPRiR_P3Xu5eGYaI3K-cNY9ti-s_hSxjVVw591awqv2ywyzFbtSxbQ&utm_content=128154932&utm_source=hs_email

ATTENTION TO INTERACTION OF MEDS IN PEOPLE WITH DISABILITIES NEEDS PARTICULAR CARE

- After my first China trip in 2008, my pulse rate was too high.
- Whether pollution caused the problem or not we cannot say.
- Internist prescribed beta blockers to slow pulse.
- Problem?
- Beta blockers also keep diabetics from recognizing their blood sugars have gone low by suppressing awareness of lows.

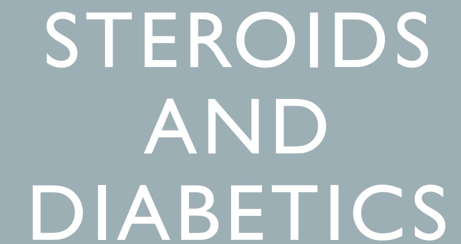
HOW DID WE CATCH THE PROBLEM?

- My mother found some concerning things on the internet about beta blockers and diabetics.
- Going to birthday dinner with my med volunteers.
- Others who were third year med students saw I was terrifyingly pale.
- We got juice into me, but I had no idea my sugars were in the low thirties or maybe even upper twenties.
- At these levels, many diabetics are in a coma or dangerously near it.
- We changed the med we were giving me to something that would not suppress my autonomic reactions to low blood sugars.
- The internist in question admitted he forgot to check the PDR for potential complications. I never saw him again.

- Many patients with chronic health challenges will depend on you to be extra careful in prescribing meds.
- Please be sure to discuss meds and their potential impact on your patients with them.
- Their current meds may or may not represent their entire history and the history you have may not be complete in important details.
- On hearing the story of the beta blockers in an earlier talk, one of your recent dental grads told me they immediately put the PDR on their phone.
- Please do this yourselves.

TAKING TIME TO TALK THROUGH CHANGE IS GOOD

- I'm told that a potentially dentally relevant interaction would be steroids and diabetics.
- As you doubtless remember/know, steroids can be hard on a diabetic's blood sugar management.
- Most diabetics may handle a few bad days well enough.
- But some, like me, will find steroids hard to manage.
- So please talk these things through with your patients before prescribing something even if your knowledge and the PDR says it should be okay.



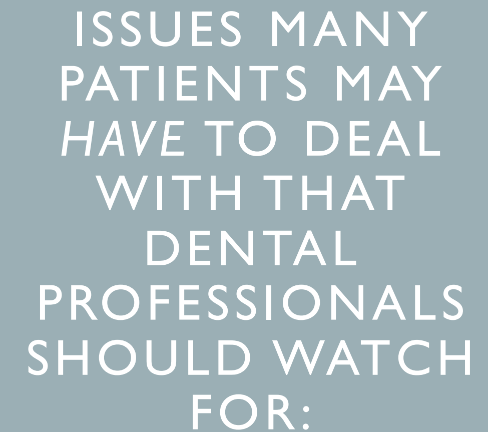
STEROIDS AND DIABETICS

- The choices health professionals make and attitudes they carry can have a **huge impact** on patient's compliance and outcomes
- According to a recent study by Iezzoni Et Al from Harvard published in February of 2021 in the Journal "Health Affairs":
- 82 percent of U.S. physicians said they believe people with significant disabilities have a **worse quality of life** than those who are not disabled.
- Sometimes that's true, sometimes it isn't.
- **Our quality of life will be worse if you decide it for us**
- Please do not add to our challenges by asking patients to overcome your negative attitudes as well as their health concerns.
- **Help reduce the barriers** we face by keeping an open mind and seeing your patients as people not health conditions.

- Three days before I was to make my first trip to China
- My then-dentist found and was working on a cavity on a tooth where one already had been filled.
- It turns out the cavity was bigger than they expected and from my perspective the tooth literally exploded.
- His first thought was: "We'll need to put a crown in".
- On being told I would need to come in in ten days to get the crown put in
- My first thought was…

- I'll be in Beijing that day.
- On hearing this, Dr. Tom pulled together some materials he had in the office and made a temporary crown.
- Yes, temporaries go in all the time
- But not ones meant to survive a trip to Asia and the likely need to make it to mid-March when I would next be home.
- The temporary went in, I went to China, and it survived from early January to Mid-March when the permanent one went in.
- This is the perfect example of how a dentist can significantly improve outcomes for any patient and particularly for a patient with special needs and special plans that had taken a great deal of effort to put together.

- If a patient has trouble with the movements needed for brushing, flossing will very likely also be a problem.
- If a diet needs to be modified to account for dental work,
- Does the patient have both the biochemical and practical resources needed to manage the change (even if its temporary)
- If they have caregivers, are those people aware of what needs to be done to manage through the impact of dental procedures?



TRAINING ON PROTOCOLS MATTERS

- Dental professionals have long been key teachers of complex post-op protocols
- If you must teach patients or caregivers complex protocols:
- Be sure the patient and/or their current caregiver understands and can repeat the needed steps.
- Some will be able to manage a dental professional's preferred regimens
- Some wont due to biochemical, practical, and cultural reasons.
- All of these reasons matter, and all need to be heard and accommodated where possible.
- For example: putting in and taking out partials

ISSUES MANY PATIENTS MAY *HAVE* TO DEAL WITH THAT DENTISTS SHOULD MAKE SURE PHARMACISTS AND/OR CAREGIVERS ARE WATCHING FOR:

- Can meds you prescribe be labeled in ways that work for people with reading challenges?
- Are there tools to help patients know what meds they are dealing with aka braille labels, different container shapes etc. if regular labels won't work.?
- Do patients understand, and can they use, delivery devices for prescribed meds (or prepared food)?
- Does the prescribed regimen work with the patient's lifestyle?
- Is the regimen, and any teaching materials to be taken home, provided in the patient/caregiver's native language?

PATIENTS SUFFER WHEN THEIR HEALTH CONSULTANTS DISMISS THEIR PROBLEMS

- For example, this is a frequent challenge for injured high-school and college athletes who may be pushed to return to play too early.
- Disabled patients can have problems getting into the clinic or around it.
- They may also have problems navigating the exam room
- Some will have issues managing their home environments

FULL MED PROTOCOL

Insulin Protocol for Dr. Matthew Weed - Davis, CA

I. PREPARATION

- **A.** Turn on lights, wash hands, put on gloves. *Say out loud what you're doing from here on.*
- **B.** Remove insulin vials from small fridge: **Humalog** (clear) and **NPH** (cloudy) in AM, (see below for PM).
  - NPH is also called Humulin (brand name) – make sure you have the correct insulin types!
- **C.** Put alcohol on cotton ball and wipe off tops of insulin vials.
  - Keep cotton ball to use on Matt's finger after blood sample is collected.
- **D.** Unzip glucometer kit and take out penlet. Take a lancet from the box in or near the organizer.
- **E.** Hand penlet and lancet to Matt – he will load the lancet while you load the glucometer.
- **F.** Take out a glucometer strip and insert it into the glucometer – this will turn it on.
  - Black and white striped end goes into top of glucometer, the yellow striped end collects the blood.
- **G.** When #25 appears followed by "Apply Sample" and an image of a strip, the glucometer is ready.

II. GETTING BLOOD SAMPLE

- **A.** Matt pricks his finger with lancet loaded into penlet, given above.
- **B.** Squeeze finger to obtain a sizeable blood drop. You may need to "milk" finger to increase blood flow.
- **C.** Place tip of glucometer strip directly into blood drop. Yellow strip acts as straw, fill completely.
- **D.** When strip detects blood, 5-second countdown begins then glucose reading appears.
  - If yellow strip is incompletely filled, error will appear. Start again with new strip.
- **E.** Hand Matt saved cotton ball (from Step C in section I). Tell Matt the glucose reading.
- **F.** Record in the book:
  (1) Initials **(2)** Time **(3)** Glucose Reading (with a dot) **(4)** Insulin Dosages **(5)** Insulin Total (AM only)

III. DRAWING INSULIN

- **A.** Roll **NPH (cloudy)** slowly x 15 seconds, about the time it takes to say the alphabet to yourself.
- **B.** Take syringe out of box in or near the organizer. Remove only cap over plunger end (if 2 caps present).
- **C.** Proceed in the following order (cloudy, clear-clear, cloudy) – like the seasons (winter, spring, etc.).
  1. **Inject AIR into NPH (cloudy)**
     (For needle safety and stability, always insert/remove needle holding vial on counter.)
     - **a.** Leaving needle cap on, draw air into syringe equal to the NPH (cloudy) dose.
     - **b.** Remove needle cap and insert needle through rubber gasket into vial.
     - **c.** Inject air dose into vial and remove needle from vial.
  2. **Inject AIR into Humalog (clear)**
     - **a.** Draw air into syringe equal to the Humalog (clear) dose. Inject air dose into vial.
     - **b.** Leaving the needle in the vial, lift and invert syringe and vial for the next step.
  3. **Draw Humalog (clear) insulin dosage**
     - **a.** Draw slowly, checking for bubbles. If bubbles present, depress plunger quickly, back into vial.
     - **b.** Redraw until no bubbles, correct dose (plunger top lined up with line). Remove needle from vial.
  4. **Draw NPH (cloudy) insulin dosage**
     - **a.** Using the same syringe, insert needle into NPH (cloudy) vial.
     - **b.** Invert syringe and vial and draw slowly to the total insulin amount recorded in the book.
     - **c.** *Recheck total and look for bubbles.*
       If bubbles, STOP! DO NOT REDRAW! Start over with new syringe. If total incorrect, tell Matt.
     - **d.** Remove needle from vial.
- **D.** Say aloud the dosage of each insulin drawn and hand barrel of syringe to Matt with **NEEDLE DOWN**.
  - Matt will inject himself and dispose of the syringe.

IV. CLEANING UP

- **A.** Put used glucometer strip in soda can (sharps container).
- **B.** Put away glucometer kit. Return insulin vials to refrigerator.
- **C.** Throw away paper towels, gloves, and syringe caps in the trash to the right of the sink.
- **D.** Enter information from book into the Google Form. Turn off lights when finished.

PM Routine Same As Above, Except:

- **Humalog** and **Levemir** are used at night and both are clear – check the labels. And you will use 2 syringes.
- Each insulin is drawn in its own syringe. Follow steps for injecting air, drawing insulin, redrawing if bubbles.
- Complete one syringe and give to Matt, then the other. Either insulin can be drawn first. No rolling required.

If running low on any supplies (alcohol, cotton, test strips, insulin, syringes, etc.), notify Matt!

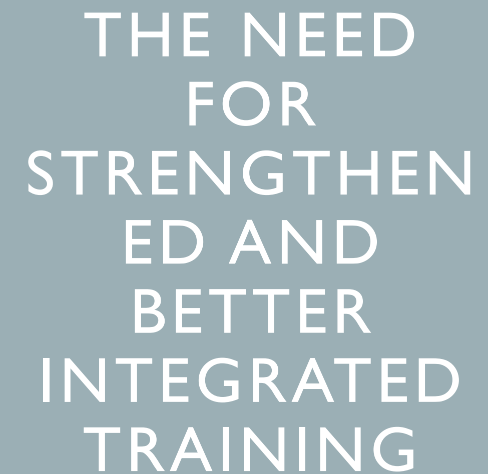
DESCRIPTION OF VIDEO FROM POWERPOINT SLIDE 20

Dr. Boris Veysman hands Dr. Weed the lancet and wakes up the glucometer by inserting the test strip. Dr. Boris touches the end of the test strip to Dr. Weed's thumb, which allows blood into the strip for a reading. Then Dr. B gives Dr. Weed an alcohol pad to sanitize thumb and stop bleeding.

DESCRIPTION OF VIDEO FROM POWERPOINT SLIDE 21

Read the transcript below for how volunteer Liz Min describes the process she is following to draw one dosage from one vial of Dr. Weed's insulin.

[Liz] – Okay, so now we don't have the air bubble anymore. So I'm going to draw down to seven. There. And then slowly pull out the needle.



- Training of health professions students about how long-term health challenges are managed at home and work must be strengthened
- Some health professions schools now require students to do home visits with patients.

In my view all should do this because:

- The literature shows home visits save money, strengthen training and empathy, improve outcomes, and reduce visits to clinic and the Emergency Department

Letter in Article in Archives of Ophthalmology:

- Showed students spending an hour a week with me had significant impact on their later clinical practice

Unpublished research presented at American Public Health Association (APHA)- Chicago2015

- Shows most health profession schools don't require exposure to patients' home and work environments. Presented at APHA-Chicago2015

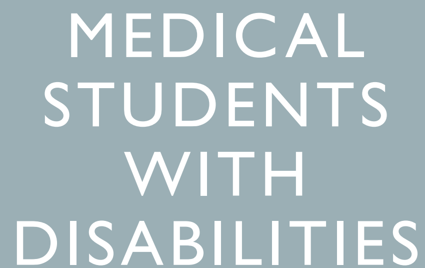
DESCRIPTION OF VIDEO FROM POWERPOINT SLIDE 24

Read the transcripts below to learn about three of Dr. Weed's former volunteers

[Melissa Vollbracht, MSW/LCSW] – Real life symptom management at home is an important experience for any healthcare consultant working with real life patients. Knowing how that person manages their medications, manages their diet, and interacts with other people in their home and their physical environment is really important to understanding practical and efficient and effective patient care. I think finding opportunities to be in the homes of patients that you maybe interact with primarily in offices informs your treatment, empathy, and advocacy for patients when they are in your office because you understand the context of what someone might be coping with in their home.

[Dr. Ben Trapp, DDS] – Working with Dr. Weed gave me increased insight into the human condition and some of the challenges that people go through every day especially as it relates to, not only their physical health but especially their mental health. And I think taking those factors into account when treating patients in a holistic way is the most effective and important.

[Dr. Boris Veysman, MD] – You got to work one-on-one with a person with an actual, clinical, medical problem, and you also got to know them, something a human being would do. This is one of the best decisions I've ever made. I learned more than I ever realized I would. And I will always be grateful to him for that.



- 18.7% of the US population and up to 8.9 percent of US residents aged 18 to 24 have at least one disability (Waliany)
- Less than 1% of medical students have disabilities known to school administrators. (Waliany)
- A study published in 2012 found that since 2001, only 0.56% of matriculating and 0.42% of graduating medical students have physical or sensory disabilities (Eickmeyer)
- 95.9% of medical students graduated after six years (AUSOMA)
- I could find no similar statistics on students working toward dental professions.
- When you're next together in the same space with them, look around and see if 8% of your students have noticeable disabilities.
- I'll bet you may see a few but certainly not 8% worth.

- While walking to an appointment on the main campus at Yale, I ran into a partially erected flower cart that was hanging over the sidewalk.
- I bashed my upper front teeth very hard.
- I did not have overt tooth damage
- But when my dentist looked at my teeth, there were new microfractures in the enamel.

"THE STATE OF THE PHYSICAL PLANT CAN HAVE A HUGE IMPACT"

- Anyone disabled or not can slip or take a fall especially considering Minnesota winters.
- When you have a disability and need help accessing healthcare, the risk attached to unsafe environments can be greater.
- If you see things or places that look dangerous to you, please say something if you can.

UNDERSTANDING PATIENTS' HOME AND WORK LIVES IS KEY: SO IS ACCOMMODATION IN THE CLINICAL SETTING

"EXTRA ATTENTION IS NEEDED TO SCHEDULE CHANGES FOR PATIENTS WITH DISABILITIES."

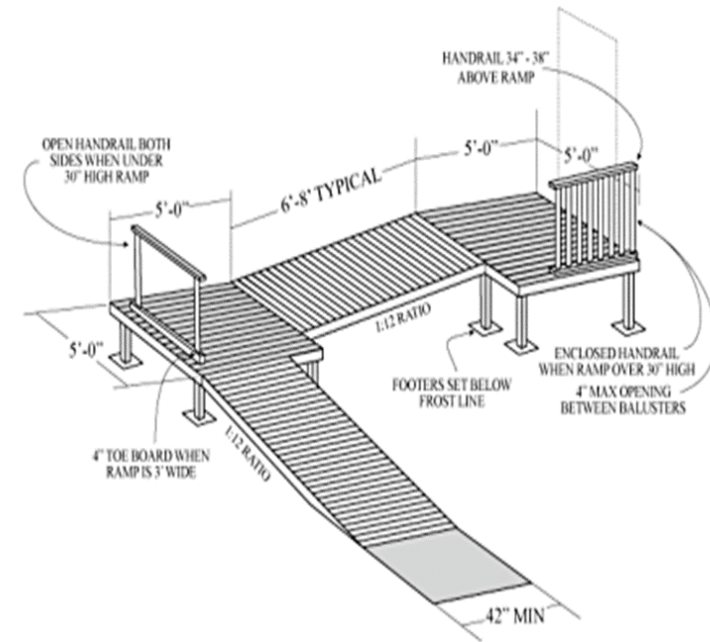
- One of the key issues in thinking about patients with disabilities is transportation from home to the clinic.
- Many, like me, won't be able to self-transport and will need to organize help to get there.
- As a result, pre-emptive moves to warn fragile patients of schedule changes can make their lives easier, far more so than for many others.
- I had a long-standing endocrinologist appointment.
- They did not tell me they would be out of town.
- I missed seminar for appointments.
- Only a resident and fellow were there so I had them take me to the waiting room.
- I was able to get to half of seminar, but I still had to miss class.

https://www.washingtonpost.com/news/wonk/wp/2018/03/26/cvs-aetna-wants-be-in-your-neighborhood-because-zip-codes-powerfully-shape-peoples-health/?noredirect=on&utm_term=.e6bd36f2c595

A FEW THOUGHTS ON HOW TO MAKE THE CLINIC ACCESSIBLE

Ramps:

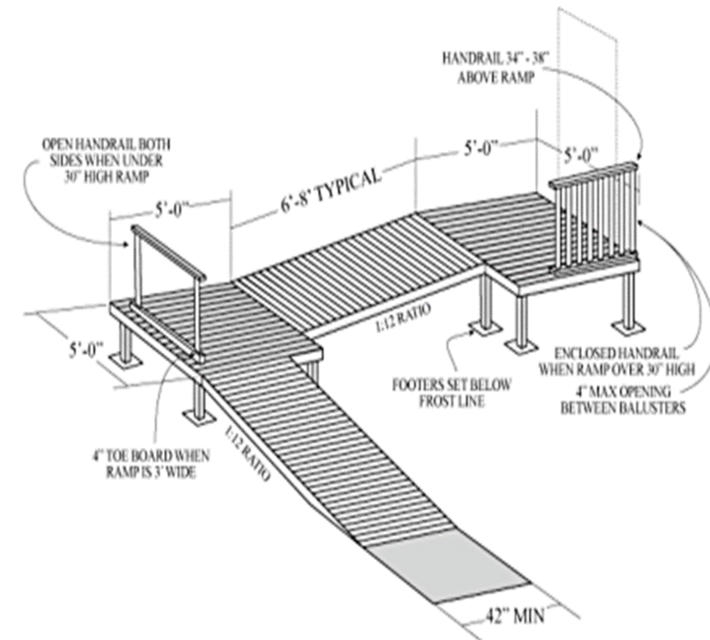
- Must be at least 36” wide after handrails (42” before)
- Ramps longer than 6’ need railings on both sides
- Railings must be sturdy and between 34” and 38” high
- Slope must be less than 1’ of increased height for every 12’ distance



A FEW THOUGHTS ON HOW TO MAKE THE CLINIC ACCESSIBLE

Ramps Continued:

- For every 30’ horizontal length of ramp, need a 5’ landing
- 5’ landings need to allow wheelchairs to turn at top, bottom, and at switchbacks
- Between landings, there should not be a rise of more than 30”
- Must be firm, stable and non-slip



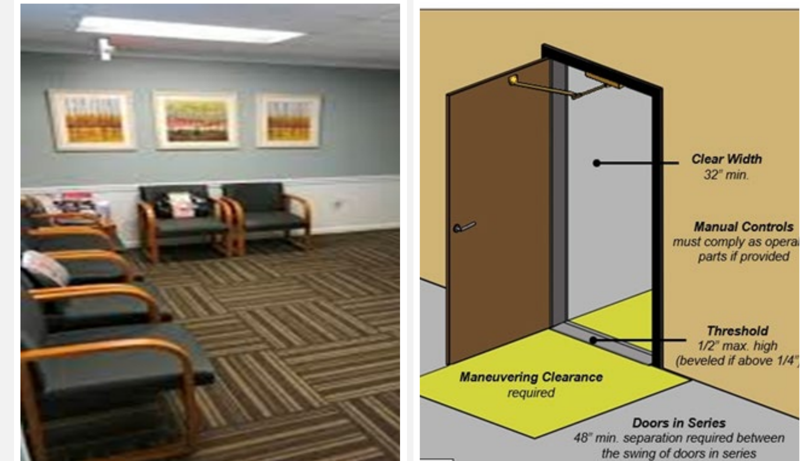
A FEW THOUGHTS ON HOW TO MAKE THE CLINIC ACCESSIBLE

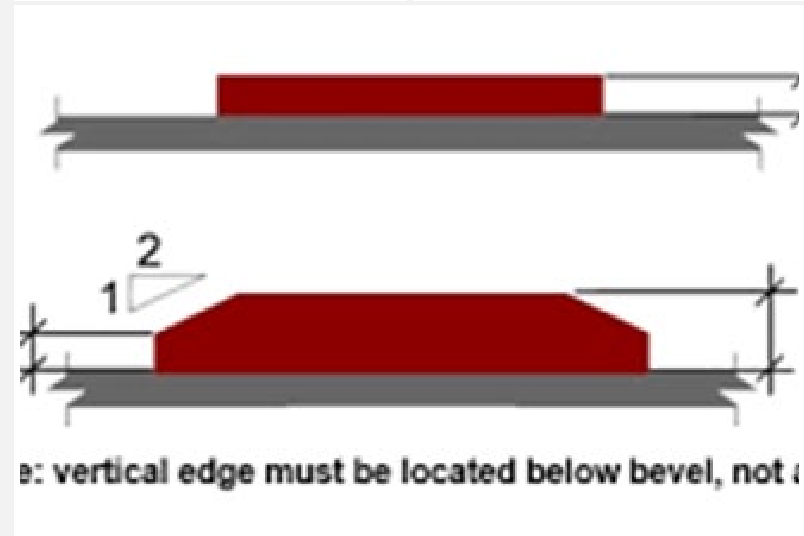
Doors:

- No more than a 1/4th threshold high
- 32" wide doors (as measured when the door is open to a 90° angle relative to direction of travel)
- If there is one, the button to open doors must be accessible, IE not behind furniture as I recently encountered in the lobby of a building where my orthopedics clinic is housed

Carpets:

- NO wrinkled rugs or carpets
- A maximum pile thickness no more than 1/2 in (13 mm) high.
- Exposed edges of carpet need to be fastened to floor surfaces and have trim along the entire length of the exposed edge.

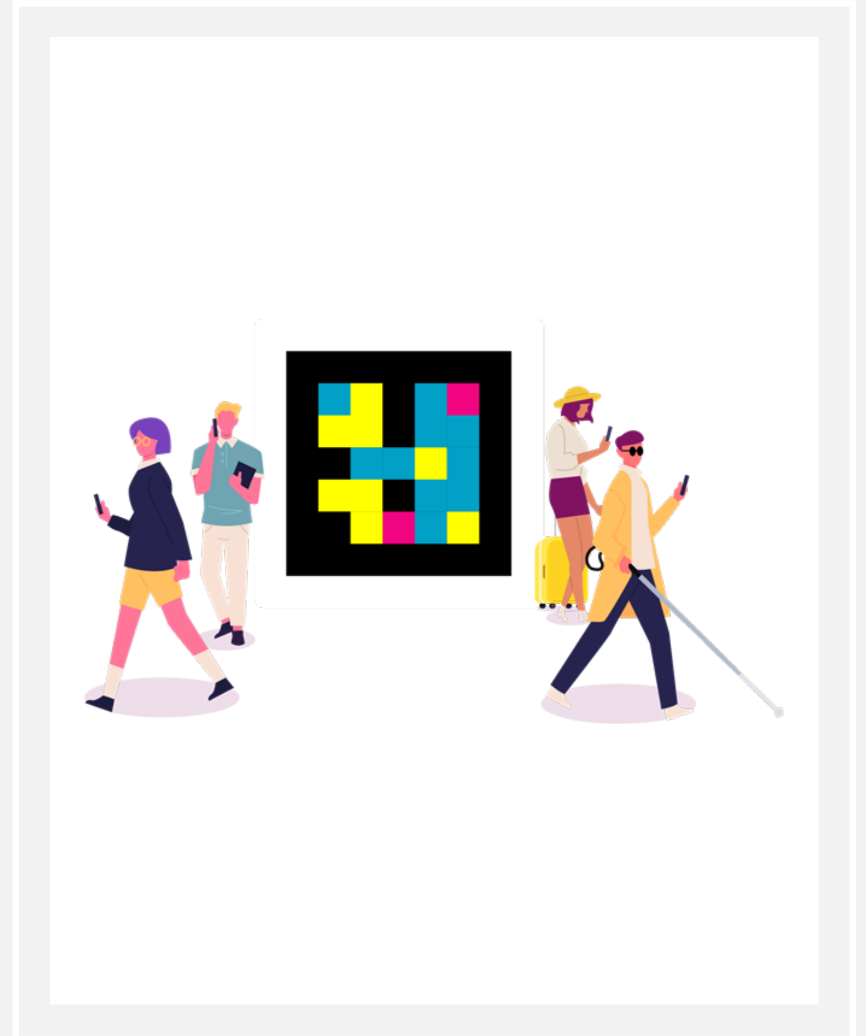




A FEW THOUGHTS ON HOW TO MAKE THE CLINIC ACCESSIBLE

Passageways:

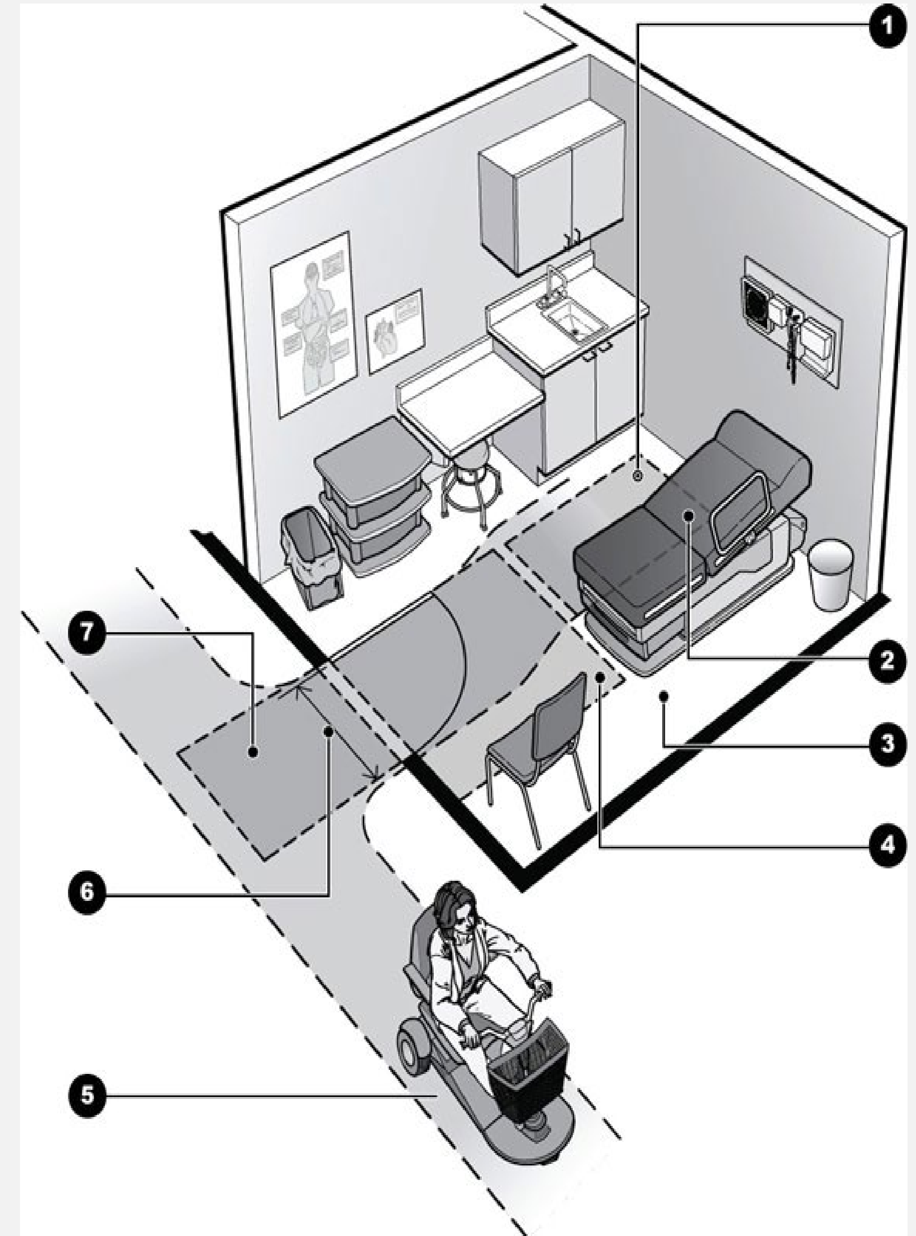
- 32” wide and clear after accounting for people extending their legs
- In many settings, findable Markers to indicate location and give direction throughout the clinic such as NaviLens or a guide should be provided in case blind patients don’t have sighted guides or if the guide is not going to the exam room/counter with the patient



EXAM ROOM ACCESSIBILITY NEEDS:

Floor and Space:

- Adequate turning space (Minimum space required is 30”x48”).
- The sink and other dental tools may pose a navigational challenge for a wheelchair user so that 32-inch aisleway needs to go straight through the door of the dental bay straight through to the chair.
- Clear floor space is needed along both sides of the dental chair as some patients can only transfer on their right or left side.
- The chair needs to be lowerable to the point where the level of the “seat” is 17-19 inches above the floor. Assistance with getting legs up onto the chair may be needed.
- For example: Some patients may require a lift to transfer into the dental chair. Some wheelchairs can lean back- might consider doing dental work that way- dentist may need to stand.
- Arguably open dental bays (those without closed doors) can pose a HIPAA violation risk as discussions of medical histories can be heard by others outside the space.



Paperwork:

- Paperwork on meds and history needs to be accessible before arriving at the clinic.
- Too often, I have had to fill out paperwork verbally while in the waiting room. This violates HIPPA.
- An isolated room needs to be available for patients who can't fill out paperwork silently or someone may need to go over history as well as meds once in the dental bay.

- Too many times, desk staff have asked my guide, not me, what we were doing there.
- Whether the patient has a GED or a Ph.D., staff should always interact with the patient first.
- Remind staff to discuss things like whether a companion needs to come back to go over paperwork and so on quietly.
- Someone on staff should known American Sign Language

Laws and Regulations:

https://www.ada.gov/2010_regs.htm

Design Standards:

https://www.ada.gov/2010ADAstandards_index.htm

Technical Assistance Materials:

https://www.ada.gov/ta-pubs-pg2.htm

https://www.theindependencecenter.org/wp-content/uploads/2019/07/Creating-Disability-Friendly-Dental-Practices_Final2.pdf

"Sometimes this isn't possible, but the more we can find ways to reduce risk the less chance people who already face extra barriers will have to climb extra healthcare and regular life mountains while recovering, maintaining, and improving their health."

DESCRIPTION OF VIDEO FROM POWERPOINT SLIDE 39

Dr. Weed:

- Skis with James Hayes, an adaptive ski instructor, on Gore Mountain in upstate New York
- Rollerblades through Central Park with volunteer Sarah Hamilton
- Wall climbs in Connecticut with Nate McKenzie and Colin Crofton of Paradox
- Kayaks on Lake George in New York
- And speaks at Hong-dandan in Beijing, China. A transcript of his comments are below.

[Dr. Weed] – It depends. There are 50 states, so each state, sometimes, has its own organizations that arise.

CONCLUSION AND THANKS

Thank you:

- **To Dr. Blue in the office of faculty development and the Diversity, Equity and Inclusion Committee** for inviting me to speak today.
- **To Ms. Kamryn Neu**, a graduate from the University of Colorado, Colorado Springs for her help with putting the presentation together and for her help in operating the computer today.
- **To Ms. Shannon Gregory**, for her help with many of the videos
- **To the people listening**
- **To the many people**—most volunteers but not all—who have helped me do everything you saw and heard about in this presentation and more.

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