If I were in charge of CU Health Psychiatry, I would be looking into these ideas…

Step One: I would setup telepsychiatry immediately. The goal is not "arbitrage of time." I actually want AI to listen to every session and record metadata about the patient/doctor interactions. This is counterintuitive. Most AI wants to build a profile of X. But the magic is analyzing X interacting with doctor… every breath, pause, repeated word, you name it. And this is only a precursor to facial analysis.

I would start the telepsychiatry practice and market it as convenience for the public, productivity gains for doctors, etc. But what I am really doing is gathering terabytes of (unstructured) data for machine models. Conversations will never be stored (no need), only the metadata analysis from the conversations. This is called "feature generation" in machine learning.

AI will be able to pick up on nuisance and subtilty that humans could never capture with their senses. AI is listening in micro-seconds, using wave forms and non-obvious relationship awareness (NORA) in each session. It's listening to a symphony!

Step Two: We now have telepsychiatry and machine models. Next, I want to move into trigger-event identification. This is the first step towards preventative psychiatry. CU partners with a wearable maker (e.g. https://getlief.com/). Data gathering cannot be at the wrist and needs to be via electrodes. Haptic is optional, and a game changer by itself.

I will ask patients to wear a patch that connects via internet directly to CU Health. While the patch will also work at night, I might also prescribe a sleep monitor like this > https://www.emfit.com/ Bottom line? I want to collect data, especially HRV and breathing pattern data on user 24/7.

This will generate petabytes of data. This is a big obstacle right now with wearables reaching a tipping point. Overwhelming data and athletes+ are not qualified to interpret the data. But a CU Health "war room," with advanced machine models, can read the vitals in real-time and send alerts to doctors.

Each doctor gets a report every morning (text messages if acute situation) for patients that are in distress or heading towards distress. In fact, a nurse can do initial reach-outs and escalate, if needed. Every patient is sequenced based on need for care.

Step Three: I would next shift to preventative care. Offer patches to PCPs/specialists within the CU system. For example, patches would be prescribed right after every cancer diagnosis. Patches would be prescribed to children having issues in school. Idea is to get to patients before (inpatient) treatment is needed. And the war room models have no problem handling 1 or 10MM users. It's an "exponential information technology."
https://www.youtube.com/watch?v=dfq96KjA80I&feature=youtu.be&t=5m26s

What I would not do? Communicate to users via AI. I would not generate consumer reports. I would not even share data. I would say.. wear the patch and we will watch you. We have your back. Don't hear from us… you are in good shape. Eventually, CU Health will get into haptic devices. And, of course, call our CU hotline at any time, give us your patch number and we will explain how it's going.

I would ask insurance to foot the bill for 100% of this effort. Pay a little now or pay dearly down the road. Let's all focus on prevention, even in psychiatry.

Step Four: I am ready to improve the wearable device. #1 on my list? Medication delivery > https://www.news.gatech.edu/2017/08/24/microneedle-patches-flu-vaccination-successful-first-human-clinical-trial No one takes their pills as prescribed. You are sick. Meds will make you feel better. Then you forget to take them?!

I am also interested in gathering more data. I want a motion sensor to analyze exercise/mobility. (ADHD?) I want to know levels of alcohol and recreational drugs. https://newatlas.com/marijuana-breathalyzer-vapor-pressure-nist/50424/ My penultimate is to build an artificial nose that is super sensitive and gathers tons of user data.

Step Five: Models are mature enough to expand to a wider market. Devices are sold in all four corners of Colorado. Models alert war room if there is reason to see a psychiatrist. Local town psychiatrist is notified and given access to the CU Health assessment (not user, but doctor). CU Health connects local doctor and user for care and then gives doctor ongoing access to that patch number for analysis. Doctor has a special hotline to speak with CU Health about interpreting results. There are also online courses that Colorado psychiatrists can take to learn how to interpret and monitor war room outputs.

Step Six: The final step is asynchronous psychiatry. Idea here is for patients to be prompted by device to record a video on cellphone and describe their feelings at that moment. Mobile app can provide some prompts to help the user open up. These videos are then sent through the models and analyzed. If an acute situation is identified, psychiatrist on call is alerted immediately. Family members can also participate, recording their own observations.

These device makers are moving into your turf. They are hiring psychiatrists and other MDs away from hospitals, clinics, etc. Device makers need to focus on technology and outsource/partner with CU Health to deliver expertise and human-to-human services. CU Health should be way out in front of these entrepreneurs – leading them versus the other way around.

The absolute key and main takeaway? AI should be hidden from users and patients. It works behind the scenes (war room) to drive/triage interventions, but patient care is always delivered human-to-human.