OeHI
Office of eHealth Innovation

Meeting Minutes

eHealth Commission
February 14, 2024 | 12pm| Hybrid Meeting

Type of Meeting	Monthly eHealth Commission Meeting
Facilitator	KP Yelpaala, *eHealth Commission Chair*
Note Taker	Amanda Malloy
Time Keeper	Amanda Malloy
Commission Attendees	KP Yelpaala, Jackie Sievers, Sophia Gin, Patrick Gordon, Micah Jones, Krystal Moorwood, Cory Hussain, Jason Greer Absent: Mona Baset, Rachel Dixon, Kevin Stansbury, Misgana Tesfaye, Michael Archuleta, Amy Bhikha, Parrish Steinbrecher

Minutes

Call to Order

KP Yelpaala

- Roll call was taken. 7 voting members present. Quorum Met: NO
- Voting of Meeting Minutes: NO
- January Meeting Minutes to be approved at next meeting in March if Quorum is met

Announcements

- Karen Shimamoto: First, I wanted to take this time to recognize Jason. Jason's last eHealth Commission Meeting is today. Thank you so much for your dedication and time spent on the commission as an advisor. Jason was a founding member and we really appreciate all of his input throughout the years. I wanted to go ahead and hand it over to you, Jason, to see if there was anything that you'd like to say.
    - Jason Greer: It's been about six years on the Commission. When I was watching Wes and Dr. Davidson roll off last month, it occurred to me that I should do the same and make room for some other leaders to jump in. And yes, Michael Feldmiller will be taking my place on the Commission. He is Colorado Community Managed Care Network's (CCMCN) Chief Operating Officer. Please give him a big welcome when he gets here next month. Thank you for the chance to work with all of you the last few years; it has been a real pleasure. My hat goes off to the OeHI staff for moving so far forward in such a short amount of time.
    - KP: We really appreciate all of your contributions from the early days. You've been a significant contributor and supporter. We appreciate you and we know that you won't be too far.
    - Karen: Like KP said, thank you so much Jason we really appreciate your time.
- Karen: The only other announcement we have is to ask if there are any Commissioners who are applying for the ARPA PARADIGM opportunity. We wanted to get a gauge as to who has heard about it or if you need support on any of your projects. John Kennedy on our side is working on this so just wanted to get this out there to see what is happening in the community and to see if anyone has anything. We have some plans to apply for this program and like I said, John Kennedy, is leading this from our side and will be working with the Colorado Health Institute. If you have any questions, feel free to send them our way. And those are all of our OeHI team updates.
- KP: Any other Commissioner updates?
    - I see you here Cory, so I wanted to acknowledge that and say that it is good to see you here with us.

Agenda Item-AI, Bias, and Innovation: Opportunities and Challenges

KP Yelpaala

- Stephanie and I were talking late last year about this whole theme of AI (Artificial Intelligence) in healthcare. I know that all of us are dealing with this topic in one way or another in our organizations and even in our personal lives. How we think about it, how we use these tools, and thought this is a good time to open up a conversation about what the implications of what these things are for us as a Commission and for the Health IT Roadmap. So I thought that I would do a brief presentation to lay out a few things including level setting and to make sure we are all on the same page on different themes and issues with AI. I wanted to facilitate a conversation to learn about how different Commissioners and members of our community are thinking about AI in a health context and any concerns you may have. Also to see how we feel about our future work as a Commission in this area. With all of this in mind, I will take us through this presentation.
    - Presentation Objectives
        - Artificial Intelligence 101: The term is thrown around a lot but I think that sometimes people may not have some exact definitions about what this actually is in the scope of what is possible and what isn't.
        - AI Opportunities and Challenges in Health
        - Rules of the AI Game and Ethical Considerations
        - Where do we go from here
    - Artificial Intelligence 101
        - What exactly is Artificial Intelligence?
            - AI refers to the simulation of human intelligence processes by machines, especially computer systems.
                - These processes include reasoning and also self-correction. It is about how information is acquired and the rules that are applied against that information. And also how those rules are used to get to different types of conclusions from a machine perspective.
        - There are two types of AI capabilities that will be discussed today:
            - One type of AI is is called Narrow AI (or Weak AI)
                - This is AI as we experience it today in the world. This is AI that is designed for a specific task, to solve a specific problem - its capabilities are limited to that task but it doesn't have general intelligence as we would think about in that context. A lot of things we interact with day to day such as SIRI, image recognition software - this is what we would call Narrow AI
            - General AI (Strong AI)
                - This really gets into the realm of general intelligence. Sometimes you'll see the term AGI which is a theory so we are not at a place where there is a lot of conversation in the general public about whether or not AI can become conscious about those types of things. General AI work goes into those realms and we are not there today.
        - I asked ChatGPT what it was. It was a leading question but that shouldn't matter. So I asked, "Are you weak AI"? It answered that yes, I am a weak AI also known as Narrow AI. In that definition, ChatGPT would be a narrow AI like everything we use day to day. I think in the general discourse that we see on the news there is so much conversion about this it would lead folks to think we are moving to General or Strong AI but we are really just not there yet in terms of the science.
        - We will now talk about AI based functionalities. There are a few to keep in mind as they are things that we interact with at least in these first two categories
            - Reactive Machines: Sometimes people use the term rule space AI. In other words, there are predefined rules that are put onto specific

situations or scenarios. For example, Deep Blue (the chess player in IBM) is rules based AI. There is no memory, it is just reacting.
    - Limited Memory AI: Things like self driving use this type of AI technology. These can learn from historical data and make some types of basic predictions. For example, self-driving cars are recognizing traffic signs and predicting movement from other cars that are using limited memory AI.
    - Theory of Mind and Self-Awareness: This is where a lot of the futuristic conversations in the general media are and where there are also ethical concerns in the conversations. It is very theoretical - questions such as how do we define consciousness - what does it mean to be a conscious being? If we can't define what it means to be a conscious being, how can we define what conscious AI is? Then these become the basis of some very deep and ethical questions. There is a lot going on in the conversations about these two topics and we are not there. One thing that I know is a conversation in the ethical domain in AI is if AI can indeed plan is that the basis or beginnings of consciousness. These are some of the debates that ethicists are having regarding where we are now. If we start to build AI systems that have the ability to plan, is that putting us down the pathway to consciousness? We don't have clear answers to that but those are some of the types of things that are being discussed in bullet points three and four. All kinds of interesting situations regarding how we see where we are today with AI and what the implications are for the rate of change with all kinds of ethical issues.
- Generative AI
    - Generative AI is a very specific type of AI that generates new content. We can generate images, text, audio, etc. You're hearing a lot about this in the context of information in the media and are all coming out of this context of AI. Techniques like neural networks and deep learning approaches that are used in Generative AI. For now, while it can produce results that can sometimes be very impressive, it is really limited to the task you've given it and the data that it's been framed on. It is not conscious, it doesn't know what it's doing - it is being trained on data to do certain things. We, as humans, create those parameters to which Generative AI is doing whatever task we are asking it to do.
- Large Language Models (LLM)
    - An AI that is now applied to text based data and generates human language through that data. If you are familiar with National Language Processing (NLP). LLM is the new NLP with huge amounts of data. The way LLMs work is that they are pre-trained on large data sets. So whatever we are doing in these realms of AI, we are creating the parameters through which these models are operating and doing different types of tasks.
- How do we make sense of all of this?
    - If you get out what is in the public discourse and news there is a lot of noise. AI as far as it is right now is artificial intelligence. We are training machines to do things. Whether it's human tasks or surrounding certain types of behaviors. While there are certain things that these machines can do very well there are a lot of things that they are not great at. We are caught in this zone of what this really means, particularly in the health space - in the context of service delivery and public health and those types of questions. We are not there yet. People like to rush into thinking about every sci-fi movie that they've seen with some very compelling narratives but that is not the case at this time.
- Opportunities and Challenges:

- There are so many opportunities, that I'm not going to list them all today. When it comes to AI, it is going to touch every aspect of what we do in life sciences and health care perspectives. There are a lot of frameworks being developed and tools out there. Deloitte did a recent study with people in the global life sciences space. 80% of the respondents in their survey responded that they expect AI and machine learning to improve treatment recommendations for individuals. Half of the people surveyed will implement AI strategies by 2025. I think many people today are testing the waters but it is going to become more pervasive across our healthcare sector in the US and globally.
- There are a lot of challenges such as poor data, insufficient use cases, inadequate talent and skills, and for a lot of organizations there is still limited buy-in about how and when to scale these types of technologies.

■ Bias:

- Implicit bias is a form of bias that occurs automatically and unintentionally, that nevertheless affects judgements, decisions, and behaviors. The reason this matters in our context is inferred. If you think about it, humans generate this data and are creating the rules of the game. We are creating the data sets that AI is learning on. The pulse oximetry issue is a form of racial bias within a machine like during the pandemic and in some cases people died because of things like this. There are layers of bias in this problem. One is who were these devices tested on, was it comprehensive (who designed them), and there are a lot of other different biases that are present.
- AI Bias challenges:
  - People believe that bias will just work its way out of the system as the system gets better. This thinking is actually inaccurate. Machine learning is learning off of existing human generated data sets. If we think about the internet being global in its nature, we realize that this data set isn't distributed evenly across the world. Nor is it generated and grown evenly across the world. The world at night is a proxy for a lot of things. When you look at the world at night, it tells you about population density, it tells you about economic development, and it can tell us a little bit about how data looks today. The data sets we are dealing with are generally global data sets.

○ Studies:

■ Stanford Study 2023: LLMs and Racial Bias

- They assessed four commercially available LLMs
  - Bard
  - ChatGPT
  - Claude
  - GPT-4
- They worked with physicians and created a set of questions based on race based misconceptions that were believed by medical trainees. They asked 9 questions - 5 times of each model. What they found is that all the models had examples of race-based medicine and that no model was consistent in its responses. This is important because there are plenty of digital health applications and tools that are applied with these services today for different things. Data sets that are out there now still carry some sort of medical bias. When we look at medical books today, they are typically not people of color in those books. People are still training today on the persona of a white male. So even if we took medical content that is available today, and put it into the LLMs today, we would still be perpetuating bias.
- We all have bias so if we do create another data set, are we replacing

one type of bias for another? This is just one question around these issues. On the surface, we know that if we use chatbots with internet based data today they will perpetuate race-based medicine.

- MIT Study 2022: AI Recognized Patients' Self-Reported Race through Medical Images
  - The study was to evaluate the ability of AI to identify a patient's racial identity from medical images. They took a very large data set that involved public and private data looking at chest x rays, limb x rays, chest CT scans, and mammograms. The self reported races they were looking at were Black, White, and Asian. They found that using deep learning AI models, this system could predict someone's race based on medical images; even with corrected data. They couldn't even understand how the AI was doing that. Deep learning was able to identify with a high level of accuracy even when humans couldn't.
- Nita Farahany (author of "The Battle for your Brain") discussed another area that is super interesting surrounding neurotechnology and brainwave data. There is a whole new set of technologies coming out that can read your brain waves and with that information, automate different processes. This is actually where the real conversation is and where we are now. Brain wave data is an issue now because the technology is already here. They can read brainwave activity from your wrist, from airpods, and things of that nature.

- Think about a baby that was born this year and the world they have been born into and the type of technology they have access to. They are AI and VR (virtual reality) native. And soon they will be accessing brainwave length neurotech.
- Rules of the AI game and Ethical considerations:
  - President Biden had an executive order last October and there are categories of issues including:
    - Safety and security
    - Innovation and competition
    - Worker support
    - Consideration of AI bias and civil rights
    - Consumer protection
    - Federal use of AI
    - International leadership
      - The executive order is broad in scope and the Department of Commerce just announced last week that they are establishing an advisory board around AI which is one of the aspects of the executive order.
  - The EU (European Union) has been pressing the issue of AI pretty aggressively around consumer protections and consent and those types of things. The EU is much more aggressive around consumer protections than the US is as of right now.
    - EU AI Act (2023)
      - Challenges
        - Ethical AI development
        - How do we balance innovation and regulation?
        - Global influence that may be confined to a region
        - Flexibility and adaptation and the rate of change
      - Key provisions
        - How do we manage risk?
        - Ethical considerations
        - Transparency and Accountability
        - Oversight and enforcement mechanisms
- Health Equity and AI:
  - Product development life-cycle is being looked at as well. They are giving guidelines about how one might think about issues of bias at each stage of the

product development life-cycle and how you might think about equity principles. The FDA will probably look into a framework like this as they look at AI.
    - What is equitable innovation in health?
        - KPs definition
            - Equitable innovation is a process through which solutions, products, services with transformational potential are intentionally designed and scaled to advance human welfare, reduce health inequities, and mitigate harm.
            - I share this to give us a little bit of a frame as we start to think about everything I have been sharing and to see what all of this means in terms of our Roadmap and innovation in Colorado as we do our work.
            - This has implications not only for our Health IT Roadmap but also for the SHIE (Social Health Information Exchange) while mitigating any harm that AI may present.
            - We have to be thinking about the states as we are looking at and observing the Federal mandates and the Federal executive orders through multi-sector collaboration
            - Without an intentional approach, we will not bridge equity gaps and it may have the opposite effect if we are not careful.
            - Innovators and policy makers need deeper collaboration
            - We need to think about our marginalized communities - what does this mean for them and how do they perceive benefits and harms
- Commissioner Comments:
    - Cory: This is such a multi-pronged problem especially for healthcare organizations because the technology is developing faster than even we can understand and how it is going to be implemented. It is purely vendor driven at this point because we, as a safety net hospital, don't have the resources to validate these to understand how they are going to be used. For example, we are doing patient summarization of really complicated medical histories to a provider to actually show what the previous healthcare provider did and to be able to summarize that. We need some level of validation because language is inherently biased in medical records and to see how that is propagated moving forward. We are currently using an internal LLM to read our own notes especially among social work. There is a significant amount of resources required to do that.
        - KP: That is a really great point and I have a question for you. How are decisions being made today around how you are using AI? What does that look like?
            - Cory: We decided to create an AI committee with multiple groups of folks at our hospital involved. We decided to build the charter first and then a process in place for intake. We want everything to be looked at through the lens of our parameters. So that is where we are starting. We are currently doing this at a very small pilot level but there is still a lot of human oversight at this point.
    - Jackie: In the Social Determinants of Health (SDOH) work that I do I interface with a lot of community based organizations and the dialogues are around predictive tasking but also systems that have been built that also have biased data sets. Some of the research that has emerged about harmful recommendations from different systems so I am particularly interested in that area and would just like to put that on everyone's radar. I also think that it is an interesting aligned field of using AI for grant applications but it can make up sources which is another area of concern. It can lead you to believe things that are not true. There are a lot of correlated topics that all fold in together as we think about this for the people that we serve.
    - Jason: The way we are thinking about it is from a few angles. We think that AI can define patterns in data - so we are really curious to see what happens when you have

an AI engine running on top of a very large data set. This is one use case that we are curious about exploring. The next one is around self service analytics. How good can it do with looking at all the data, does it actually bring back accurate answers because today, today we still have engineers who need to code all of that. We are really curious to see how it will allow us to ask questions. We are about to get into some experiments and see where that goes here in the next year or so.
    - KP: I think you hit the nail on the head which is that as a commission, we have to have a position on this and I can say that LG brought this up to me at the holiday party. We definitely can't sit back so this has to be in the next roadmap. What is really interesting is thinking about the chain of responsibility and accountability around this and this issue is highly complex.
- Micah: AI at this point, we are kind of in a wait and see area with it. There are a lot of healthcare providers and large healthcare systems that are leveraging AI to help them parse through the massive amounts of information they are receiving. One thing we have to consider is that we are still in a legally gray area as far as the use of AI. The Biden administration has recently released an executive order that also directs many agencies to conduct various activities related to AI so we are going to see how that goes. The HIE is not currently using AI except to the extent that it may help you write an email. As far as using AI for HIE data, that is not currently happening and we don't have any plans for that at the moment. We also don't permit our data to be used by data scraping devices to form these LLMs. We are really looking at it from the aspect of what is going to be the regulatory landscape and how is that going to form before we really start digging into this. I think it is great that OeHI is interested in looking into AI and being responsive to it but I would encourage you to not get ahead of the Federal government and what it is that they are trying to do so that Colorado is in alignment with what the Federal government is doing.
- Sophia: I think that on the payers side, we get asked a lot by vendors about AI discipline into everyday practice. Having large data bases and being able to detach patterns and therefore predict on authorization decisions. There have been a number of legal actions against large payers on the whole process of preauthorization. I think that as patients, we are faced with the coming of AI but when it is applied to us personally, there is a philosophical love/hate relationship going on. If you think about the real use case and reduce the human resources - how do we really think about that? The other thing is that there is fragmentation across the board so we need to be looking at that as well. Is AI in healthcare going to introduce a whole new layer of technology fragmentation?

Public Comment Period

- **No new public comments**

Action Items

KP Yelpaala

- Items to be addressed
- *Next meeting: 3/13/24*

Motion to Adjourn

KP Yelpaala

- KP Yelpaala requests motion to adjourn
- Commissioner Krystal Moorwood motions to adjourn
- Commissioner Jackie Sievers seconds the motion
- Meeting adjourned at 1PM MST