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Proem

Figure 2: Photo by Rodion Kutsaiev on UnSplash

Several guests in this Emerging Adults with Mental Illness series discussed conflicting incentives. What does that even mean? Do incentives mean motivation? Why we do what we do? Are we talking about incentives for patients and caregivers, insurance companies, consultants, vendors, policymakers, clinicians, drug companies, pharmacy benefit companies, employers, or communities?

Figure 1: Image of tension created on DALL.E

In the last episode with Dr. Amanda Chue, we examined dynamic tensions. Incentives certainly cause tensions. Health care is big business, with massive amounts of money involved, extremely fragmented systems within systems, and much power at stake. No wonder we think of conflicting incentives. The first health economist I knew personally was Jane Sarasohn-Kahn, of Health Populi fame. Full disclosure, Jane introduced me to blogging and suggested my name and brand, Health Hats.

Introducing Dr. Yun (Sherry) Wang

Figure 3: Photo by Francesco Gallarotti on UnSplash

Our guest today is Dr. Yun Wang, who prefers Sherry. Dr. Wang is Assistant Professor in Health Economics and Outcomes Research at Chapman University School of Pharmacy. Before joining Chapman, she worked in global health, epidemiology, social science, clinical pharmacy, health economics, and health service research in Asia, Australia, and America. She is also an Alumni Affiliate at the Center for the Study of Race, Ethnicity & Equity, Washington University in St Louis. Her research interests lie in pharmacoepidemiology and health service research for substance users and chronic disease patients—a perfect guest for us.

Podcast intro

Welcome to Health Hats, the Podcast. I'm Danny van Leeuwen, a two-legged cisgender old white man of privilege who knows a little bit about a lot of healthcare and a lot about very little. We will listen and learn about what it takes to adjust to life's realities in the awesome circus of healthcare. Let's make some sense of all of this.

Health Hats: Sherry, thank you so much for joining us today. I'm excited about this. We met a month or two ago, and I had been thinking about the health economics angle on emerging adults with mental illness and thinking about health economics. I realized I couldn't explain it to people. I appreciate that you're joining us. Tell us briefly about yourself.

Sherry Wang: Thank you. I'm an assistant professor at the School of Pharmacy at Chapman University, located in a beautiful place, Orange County, California. We are very close to the beach, and we enjoy sunshine day by day. Don't be jealous!

Mental health research-it's complicated

I'm doing substance use research here. I'm attracted to mental health topics because mental health is not a single topic. Typically, it is combined with addiction—substance use. So, when I dive deeper into the people who abuse opioids, and Fentanyl. Fentanyl right now is the number one illegal drug in the United States, or even in the black market. People overdose and die from that. I feel sad about the truth we could not offer sufficient treatment to those patients who overdose. This is how I discover the health disparity in their access to medication for opioid use disorder (MOUD) is not the single solution, but MOUD seems like it's the most feasible solution for people who overdose. That is how I discover my interest in addressing the health disparity issues in people's access to healthcare services, especially those with a mental illness, who suffer from addiction, and who also have some substance abuse.

Health Economics – How is money spent?

Health Hats: What is health economics? What does that mean to the layperson, and why should they care about it?

Sherry Wang: Health economics tells you how you spend your money. It describes how individuals, including patients, families, neighbors, and communities, decide on their healthcare with limited resources. With economics, we talk about having this much. How do you make intelligent decisions about spending this much and maximizing revenue? Similarly, health economics talks about health. It focuses on understanding how individuals allocate their financial resources, time, and efforts to obtain the best health outcomes.

From whose point of view? Different reasons to spend money

Health Hats: You're talking about what people, individuals, and families spend out of their pocket? So out of pocket, which might be different than insurance. What do insurance companies pay, or what the social services pay? So that's one kind of economics. And then I've got the economics of my personal budget.

Sherry Wang: I got where your question come from. I need to emphasize one way to undertake a health economic analysis we always start from the perspective. So, you can start from the payer's perspective. As you said, we consider a patient's perspective regarding the copay part when discussing out-of-pocket money. Sometimes I feel our healthcare system is fascinating because we are a multiple-payer system. So, if you start from a different peer's perspective, the story could be different. Right now, I notice a difference from physical illness. There is a unique characteristic of mental health disease for other types of physical health disease—so the private insurer is a significant stakeholder. But for mental health disease, the payment, the government, Medicare, and Med Medicaid pays more for mental health and substance abuse care, and private insurance pays less. So yeah, I think health economics can be studying how the stakeholders, such as Medicare, Medicaid, patients, or even private insurance companies, allocate the resources.

And this understanding of the resource is minimal. You can spend this much money on this thing, and no more budget can be allocated.

Direct and indirect costs

Health Hats: So, if we're thinking about Health Economics from a patient and family's point of view, we're not just talking about copays, but we're talking about transportation. We might be discussing wages you aren't earning because you're suffering. Is that all included too?

Sherry Wang: Of course. I think you touch on the terminology about the cost. When we conduct a health economics analysis, we consider direct and indirect costs. In simple words, direct cost is the health-related cost, the money you spend in hospitalization for the hospital stay, the therapeutics, the drugs, and the medications. A typical example in my research is M O U D, medication for opioid use disorder. And the indirect cost is the health-related productivity, loss at work and unpaid labor. Due to the characteristics of the patients, sometimes mental health illness or similar disorders could put them in an undesirable position for the insurer, the employer, or even their neighborhoods. If this happens, that could introduce some health-related productivity loss.

Schizophrenia, for example

I can give you a concrete example. Sometimes we feel like the major disease burden from mental health disease is the 4% of severely ill patients, right? So, one example is schizophrenia. The direct cost of treating schizophrenia includes the cost of hospitalization, short-term and long-term: all patient follow-up, daycare, pharmaceutical intervention, laboratory testing, and social security payment. In this case, the indirect cost will be the loss of productivity.

The age of onset of schizophrenia could be very early. It could start from people's teenage or even early twenties. So, it could potentially preclude patients from even getting to work. So later, most schizophrenia patients are impacted by work incapacity due to disability. Nowadays, I look into the literature. Most schizophrenia patients receive disability benefits, so eventually, they don't have to work. In academia, many researchers believe the loss of productivity for severely ill patients accounts for most indirect costs. If you look at the overall picture, the excessive economic burden of schizophrenia in the States was around $350 million, and about $250 million came from the indirect cost. So, this is very big.

Under- and over-utilization

Health Hats: One of the things you said at the beginning was that health economics is part of how people make decisions about their care. If somebody has a chronic illness, like schizophrenia there's an acute phase, which is they're in the hospital. Then there's an early chronic phase, where they're learning to live with it. And then there's the recovery phase, which is they're mostly living with it, meaning they've come to some kind of equilibrium, and found a place where they can function. So, are the health economic considerations different for those different stages?

Sherry Wang: I think you ask an excellent question. I want to bring in some alarming issues I just discovered. We are always discussing how to smartly utilize the system or improve our healthcare system to ensure everyone gets an equal chance for treatment, but overtreatment and undertreatment coexist within the same healthcare system and, even within the same payment system. When we talk about undertreatment and overtreatment, the undertreatment part is for the person diagnosed with mental illness at some point during year one. So, at the population level, about 30% of our population will be diagnosed with mental illness, but only 17% of them will get treatment.

Health Hats: one seven or 7 0?

Sherry Wang: 17.

Health Hats: Wow. That's pathetic.

Sherry Wang: Only 17% of them get treatment in any healthcare sector. And another 7% will get treatment from some self-help group or a peer support group such as alcoholics anonymous. The number is tiny. Talking about schizophrenia, about 57% of schizophrenia patients get treatment. But on the other part, some people have been overtreated in our healthcare system. Those individuals with no diagnosed mental health conditions also get treatment for mental health and addiction or substance use care. They use around eight visits per year - as much as those diagnosed. The people who have been diagnosed with mental health use nine visits per year.

Medicare and Medicaid

Sherry Wang: So, this is a very awkward situation. Undertreatment and overtreatment could coexist in the system. The other part is it looks like our government pays a lot compared to the private insurer insurance sector.

Medicaid pays somehow larger than in the mental health and substance use setting. But the other part of reality is that while it provides some mental health and substance use insurance coverage, it provides coverage for a lower range of spending. Still, the household, family, and patients are protected against the more expensive treatment.

I found some literature, and I was stunned to see some Medicare Part A with coverage for patients who need mental health treatment in either a general hospital or psychiatric hospital only for 190 days of hospital service in their lifetime.

Health Hats: 190 days in their lifetime?

Sherry Wang: Yes, 190 days. It's not beyond 200 days or even one year in your lifetime. It is not like one year. So, if you get enrolled in Medicare, the patients need to pay like $400 copay per day, starting from

day 60. And if you go beyond these 190 days, probably you'll pay $800 per day for fewer lifetime reserve days in the year. So, this is how much the patient pays. So back to the question, there are acute and chronic stages. It brings to my attention like our patients are not sufficiently covered even during the acute care stage.

Health economics for decision making

Health Hats: Okay, so let's go back to how the parents of a 17-year-old with major depression or schizophrenia how might they benefit in their decision making by understanding health economics? Is it too abstract or do you think that it could be presented in a way that the public could understand and make choices do this versus do that?

Sherry Wang: This question is a little bit challenging.

Health Hats: I would be shocked if it was easy.

Sherry Wang: The typical parents of children with severe mental illnesses or conditions could feel lost when they hear me bringing up something like health economics, right? It sounds so dry. They don't understand why it could benefit the children or their patients., I can only consider that there has been some preventive care for mental health illnesses. Right now, you are talking about the teenager—this type of age, like pediatric patients, young adolescents, I would like to see if there have been some programs that have shown effectiveness and cost-effectiveness.

Health economics for policymakers

Sherry Wang: So early on, I noticed other countries may have done a better job than us. I'm sorry to say that, but I noticed some literature from England and Finland. Finland has anti-bullying programs in the school setting. It's a school-based anti-bullying program, developing an order to focus on enhancing empathy, self-advocacy, and anti-bullying attitude.

Health Hats: Do you think then that at that level, the health economics is more for the policy makers than the patients and families that are going in the throes of trying to manage their lives?

The time frame for economic analysis – years or lifetime?

Sherry Wang: I think such type of evaluation is designed to influence the policy health policy making, decision making. But even though we recognize the usefulness of this health economic evaluation to find out which intervention is more cost-effective. It has been downplayed in America compared to other countries. It's not that influential in many settings. But it could be significant in some scenarios, such as public health and health promotion activities because our CDC promotes such type of health economic evaluation in these scenarios. But in broader scenarios, I regret to tell our audience as we see a very restricted or limited impact on patient decision-making. Even if we publish this health economic analysis and try to impact Medicare and Medicaid, there have been some methodological limitations in

our economic analysis. As I said earlier, we need to account for the indirect cost. Sometimes the indirect cost could be less time. People could challenge your health economic economics model, the timeline is too short, and you cannot capture all the cost.

So, if you cannot achieve a complete or holistic evaluation of a lifetime impact or lifetime analysis, it has some substantial limitations in clinical significance. Or they have even noticed in recent years that CMS has made some efforts to expand homeless people's access to healthcare services for mental health diseases or mental health illnesses. They try to build up more places or enroll people in California's Medicaid system, MediCal. They try to get people enrolled in this type of system. Still, there are other issues beyond the health economics, like consideration of homeless people who don't have some documentation in our system, don't have ID if we want them enrolled in California's Medicaid system. They don't have a smartphone to make a phone call to get enrolled. So, some logistics like that are actual barriers, right? Compared to the economic barriers.

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I need help. I've expanded my podcast this year to include video, and costs have surged., while each episode takes 30 to 40 hours to produce. With growing content and shrinking bandwidth, I need support to keep creating without impacting our retirement funds. Thank you.

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Health Economics for advocates

Health Hats: I have two more questions. The first is I think that the audience for this podcast are more people who help people, not so much people in the acute phase of chronic illness, but those like yourself, researchers, navigators, policymakers, or advocates. If that group could use health economics as they're working with the people they're helping, that's a target for better understanding. Rather than people in the throes of it.

Sherry Wang: Absolutely. I agree. Even advocates' investment in mental health prevention, and their scientifically proven significance has been lacking in most high-income countries, including in the US. I think advocates could think about how to prevent mental illness before its onset from the big picture. Instead of just focusing on curing people. The economic evaluation tools can help inform investment decision-making for this type of prevention. The other part is that health economics addresses the challenge of limited healthcare resources and unlimited competing uses. It is a way to identify the trade-off. So, advocates, including people like us who care about the patients, can use this tool to analyze the cost and the consequence of our native interventions and guide the choice regarding what health service should be put as the treatment on your priority list.

Health Hats: It seems to get involved with a school board and influence the culture at schools for the care of teens that are anxious and depressed. Health economics then informs that kind of investment.

Sherry Wang: Yeah. I think health economic analysis is a tool for decision making to get decision-making.

Health economics and homelessness

As I mentioned, we have a severe homeless people challenge in California. We one of the country's largest populations who live and are not living in a shelter system. I read news from LA Times that about 50% of homeless people have mental illness conditions. So homeless people, especially when you know they have co-occurring drug issues, face barriers to accessing treatment in the community. It's like the prevention program in the schools. It could also target this subgroup that suffered the most from the concurrent situations. So, the barrier could include a long waiting list for treatment programs that accept MediCal. Trying to convince MediCal to make changes to expand access to youth behavioral health services for people experiencing homelessness could also help improve the situation.

Incarceration

Health Hats: The other examples I can think of are the person in prison. If there's no access to treatment and people are homeless, they're more likely to be incarcerated because the more appropriate system for their care isn't available. So, they get in trouble, and they're in jail.

Sherry Wang: Absolutely. Some literature says around 40% to 50% of people will die from mental health conditions in jail. It is a significant number, 40% because people may suicide, self-harm, and all type of situations.

If we adopt the health economic perspective, we can think about allocating the clinicians, our clinics, and psychiatric clinics. How can we send the psychologist to prison or those settings to help the patients survive, extend their life expectancy, or improve their quality of life?

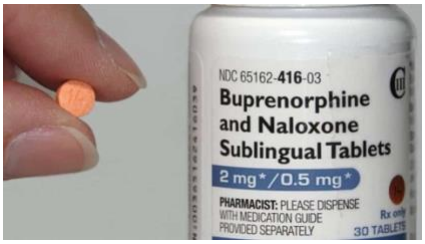

Figure 4: Photo at https://en.wikipedia.org/wiki/buprenorphine

Crystal ball gazing far into a lifetime

Health Hats: So, what do you see happening if you look in your crystal ball? What do you see happening in the future with how we use health economics to help make decisions?

Sherry Wang: If I look at the future, I will say the existing health economics models often rely on some clinical trial-based economic evaluation studies. So, we narrow it down to just a trial. We can, may not in real life, multiple types of interventions could help the people—especially vulnerable people, like homeless people in jail, teenagers, and our younger generation. I would like to see more studies look at the long-term cost and consequence because when we look at short-term cost, it's only how much you paid for the hospitalization to offer better care to schizophrenia patients. You cannot see how much benefits have been generated from it. Because you are looking at three years, the scenario you fund is probably you just spend the money from our healthcare system, and no benefits are generated. But if you look at a longer-term perspective, that could reflect real-life practice.

Health Hats: like a public health rather than a medical care perspective?

A more comprehensive view

Health Hats: So lastly, thinking about our conversation over the last half hour, what do you think are two or three sound bites that you would want listeners to come away with?

Sherry Wang: I want to remind our listeners or deliver the message that society causes mental and addictive disorders concentrated in the 4% of our population that experience severe conditions. This subgroup of people displays some characteristics that make them undesirable for the insurer, the employer, and even their neighborhoods. So, when considering the health economics perspective and how to help them we cannot just leave people alone. Sometimes, the payment system does not offer sufficient sponsorship to this subgroup of patients. Our future attention should be focused offering more comprehensive treatment and sponsoring them in their difficult journey. So instead of just putting the burden on their families or their neighborhoods.

Buprenorphine

Dr. Wang will be talking about Buprenorphine. Buprenorphine is an opioid medication, a narcotic. Suboxone contains a combination of buprenorphine and naloxone. Naloxone blocks the effects of opioid medications, including pain relief or feelings of well-being that can lead to opioid abuse.

Suboxone is used to treat narcotic (opiate) addiction. Until recently, a physician needed a certificate, called a X-Waiver, to prescribe buprenorphine. They also were limited in the number of persons they could prescribe buprenorphine. Click the links or check the show notes for more information.

Stigma and Buprenorphine

Sherry Wang: And the other point I would like to see is something about the stigma. I did buprenorphine treatment research, I found that we have choices such as medication for all opioid-use disorders. There have been long-time barriers to people's stigmas surrounding this. So that creates scenarios where the patient who suffers from opioid use disorder will not reach out to our healthcare system for treatment or help. And even the prescribers, before the end of last year, had the X-waiver, which means only physicians who get an X-waiver can prescribe buprenorphine. But after, since the beginning of this year, we have taken down the X-waiver, which is good news. So, more prescribers can prescribe buprenorphine.

Sherry Wang: In the past, or at least in my findings, I found most of the X-Waiver clinicians are not actively prescribing in real-world settings. That means even if you got that X-Waiver, you don't prescribe it. Some qualitative research has said they are so afraid of the addictive patients coming to their clinics. There have been lots of logistics they must go through to prescribe, or they don't have the time. But I would say from a researcher's perspective, I would call for de-stigmatization, for our patients who suffer from mental health illness to ensure that, like those subgroups, people can access our healthcare system without any psychological burden. We already have some financial burden. We don't want them to come to our system and feel hopeless about being judged. I think that could be the other concern.

Health Hats: We didn't talk about what attracted me to you when we met in the restaurant at that conference. You discussed graphics you developed to explain some of these health economic issues. I would love to see some of those.

Home value disparities as an indicator

Sherry Wang: Of course, we will publish some of this. I can pass you some stories about what we found. Interestingly, I found the home value in California is a significant predictor of social, economic status. Instead, the other things like income levels and some l racial composition, something like that. We found in the high home-value communities; people got more X-Waiver physicians. The affluent communities with higher home value get better treatment, which is unfortunate.

Health Hats: Are they also at risk for overtreatment?

Sherry Wang: I would say that creates a disparity situation for the neighborhood with lower home value have higher rates of opioid use disorder, higher rates of opioid overdose deaths, but they don't have the available physicians to give them medication.

Mapping disparities

Suppose people must drive 10 miles or even one hour and this traffic in California to get the medication for their opioid use disorder. In that case, this is absolutely a barrier to them.

Health Hats: Transportation is a monster.

Sherry Wang: We did some mapping projects. You live in this zip code. What happened to you? Sometimes we find the ugly side of our society. In some areas, we know those people living in their neighborhoods overcrowded by homeless people. You can hardly find any prescribing physicians. As I mentioned in our early conversation, these physicians are not willing to prescribe because they don't want to open the door and find a whole house of addicted patients, in their clinic, which is very unfortunate. So, this is something I want to display to my audience. To get some social impact, helping people realize the geospatial availability is one aspect of, maybe I would say, health disparity. And if we observe this type of health disparity, all the stakeholders should consider how to allocate the available healthcare resources, including Medicaid. They could think about opening some clinics or collaborating in those neighborhoods.

Right now, everyone in the MediCal system, the Medicaid system of California, has been routed to managed care. The managed care systems have a network of physicians. If the network didn't capture enough network providers in this neighborhood, maybe you should consider actively enrolling some people from this neighborhood. So, I think that could be our future direction. I'm happy to share some findings and update you on our progress.

Health Hats: This has been lovely. I appreciate your time, and I'm glad we met. Who knew?

Sherry Wang: Yeah. I love your passion for doing this. Thank you. I saw your fundraising emails. I appreciate that.

Health Hats: Yes, and I appreciate that you contributed.

Reflection

Figure 5: Photo by Rodion Kutsaiev on UnSplash

Health economics examines how you spend your money for best health. And when we spend that money, what value comes our way? Can we make better decisions, get better care? If we don't spend money or don't have enough money, what happens to decisions and outcomes? Then, who's you, we, us: the public, insurance companies, employers, legislators, policy makers, benefit managers, communities, vendors, consultants - who, from what perspective? Is it just buying and selling treatment and services? How do you put a price on quality of life, access, function, earning power? Value for an individual, a community, a nation? Over what period – the term of the study grant or people's lifetimes? These questions reflect the complexity and murkiness of health economics.

I strive to participate professionally in the health economics and value conundrum from several perspectives. As PCORI Board members, we consider, as appropriate, the full range of clinical and patient-centered outcomes data relevant to patients and stakeholders. In addition to the relevant health outcomes and clinical effectiveness, relevant outcomes may include the potential burdens and economic impacts of the utilization of medical treatments, items, and services. As a patient/caregiver member of the Innovation and Value Institute (IVI), I've learned of **six main areas of economic impacts: direct medical costs, non- clinical healthcare costs, caregiver and family impacts, social impacts, ability to work, and education and job impacts**. In my seat on the National Quality Forum's Standing Committee on Cost and Effectiveness I learned about policymaking. As NQF says, Current levels of healthcare spending and growth in the United States have the potential to increase federal deficits and crowd out spending for other important national priorities. Economic realities like these require performance measures that can accurately capture spending, especially when spending arises from inefficient or poor-quality care. Together, cost and quality measures can help to assess the efficiency and value of care delivered.

Just as we're finding with Emerging Adults with Mental Illness, health economics is complicated. I recommend watching Joe Flowers' video about health economics. He took a different approach. My ask- Does health economics matter to you? How?

Podcast Outro

I host, write, edit, engineer, and produce Health Hats, the Podcast. Kayla Nelson provides website and social media consultation and manages dissemination. Joey van Leeuwen supplies musical support, especially for the podcast intro and outro. I play bari sax on some episodes alone or with the Lechuga Fresca Latin Band. I'm grateful to you, who have the most critical roles as listeners, readers, and watchers. See the show notes, previous podcasts, and other resources through my website, www.health-hats.com, and YouTube channel. Please subscribe and contribute. If you like it, share it. See you around the block.