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HEPATITIS C & INJECTION DRUG USE

Anthony Martinez, MD, AAHIVS, FAASLD
Associate Professor of Medicine
Jacobs School of Medicine
University at Buffalo
Medical Director, Hepatology
Erie County Medical Center

12/14/2021

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[video transcript]

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Dr. Martinez cares for patients with liver disease and addiction disorders, including opiate dependency, viral Hepatitis, alcoholic and fatty liver disease, at the Erie County Medical Center where he is the Medical Director of Hepatology. His clinic, "La Bodega," has been recognized both nationally and internationally as a novel co-localized model for the management of viral Hepatitis and addiction disorders. Dr. Martinez has lectured around the world on Hep C management among people with substance use disorders, and his team's work has been presented at Annual Liver Meetings of the ASLD, the Annual Conference on INHSU, as well as the International Liver Conference. He is a fierce advocate working to eliminate Hep C treatment restrictions throughout the US and Europe. And he's also a Fellow of ASLD, where he serves on the HCV Special Interest Group Steering Committee, the European Association for the Study of Liver, and the American Society of Addiction Medicine. Really happy to turn it over to you, Dr. Martinez.

01:15
Alright, thank you all very much for for hanging out right after clinic, I assume. Sorry about jumping around there, Jeff. I was in charge of the next slide thing, and I was more nervous about that than the actual talk. And clearly, I've already screwed it up. There's my requisite disclosures. That's me, we're going to talk about hep C and injection drug use. The learning objectives, you're supposed to put these things in there. I didn't know, you might know three out of four of these. So I'll leave it to you to figure out what you learned from it. But Hep C in 2021. So really what we're talking about here is a syndemic of addiction, Hep C, Hep B, HIV, all of these things kind of mashed into each other. And these curves used to be, you know, like a bimodal curve of baby boomers and then people who inject drugs, but really what we see now is this kind of quasi-modal curve, where we've seen a huge uptick in PWID, women of childbearing age, those individuals who are incarcerated, indigenous individuals, migrants, and we've seen kind of a reduction in the baby boomer cohort. They're still important, especially if you're outside of New York, here we're very lucky, green light state and everybody can get access to treatment. If you go to some other parts of the country, that may not be the case. So really, we're talking about a mixed bag here.

02:42
There's pretty much four big groups that I like to kind of break this into when we think about marginalized groups with hep C. PWID, obviously, and the global prevalence is somewhere around 50%. Those individuals who are incarcerated, prevalence rates are all over the place, anywhere between 3 and almost 40%. Migrants that we talked about from endemic countries, 2 to 16%. And those individuals who are homeless. And obviously these groups kind of, you know, they overlap, right? There's a lot of interchange between each of those groups. Here in the US, we have two and a half million people who have hep C, half the individuals who have it still don't know that they are infected. And a lot of this is really a failure of risk based screening. There's a lot of different risk factors, obviously injection drug use is the primary one, but then we have things like non injection drug use, and blood transfusions, and non commercial tattooing, higher risk sexual behavior. So there's a whole bunch of risk factors that we never really asked

the questions well, and risk based screening failed. We brought in birth cohort screening, screened everybody between 1945 and 1965, we still kind of didn't really get to where we needed to be, still somewhere around 50% of people didn't know they have it. So the guidelines have changed again, we'll talk about that in a minute. The other problem we have with hep C is it's an asymptomatic disease. If you have symptoms, it tends to be pretty vague, things like fatigue and joint pain. So if you're really not bothered by something, we tend not to go looking for it. So for this reason, half the individuals in the US don't know that they have it.

04:26
I said that injection drug use is the most important risk factor. There's a couple of reasons for this, young PWID have a greater propensity to share the implements of use, so they're more likely to share not just needles. A lot of times in the community we'll hear that people's version of harm reduction is just you can't use the same needle, but obviously, I think for a lot of the people on this call, you guys are aware that you can't use the cookers, the filters, the tie downs, the spoons, all things like that, the water. Hep C is often acquired shortly after individuals begin injecting, it can survive on all of these surfaces, and it has a transmission rate that's 10 times that of HIV. Currently in the United States, somewhere around 64% of PWIDs are chronically infected. That's variable, depending where you're at. Where there's been greater treatment uptake, it's a different story. If you go to certain areas of higher risk areas, in Baltimore, for example, it's as high as 90%. So that's just the average. And most new infections in the US, 80%, are transmitted via injection drug use. Now, in the shadow of this opiate crisis, new cases of hep C have exploded. It's more than tripled. This is data from the CDC that only goes up to 2016, we know that more recent numbers show that this is probably as high as around 55,000 new cases per year, and you can see the trend. And when you look at things like opiate related admissions to the ED, whether it's for overdose or some other comorbidity, as those rates increase, the rates of acute Hep C go along with it. So obviously, if incident cases are going up, prevalence is going up.

06:20
And when we look at this group of who has Hep C today, baby boomers still important, but the demographic has really kind of shifted. And what we see is the emergence of this group that's under age, really under age 35. And this is, in my practice, I see maybe now about 5% baby boomers with hep C and the large majority of individuals are actually under age 30. So not only are they skewing younger, the ethnicity is changing. So you know, opiate dependency and opiate use is something that is extended across the board indiscriminately. And if you look at the rates of acute Hep C, no matter the ethnicity, white, Black, Hispanic, Asian Pacific Islander, American Indians, First Nation and Indigenous members, acute Hep C has gone up pretty dramatically at the same time.

07:15
As it skewed younger, it's also skewed more to the female side. So in the old days, Hep C was like 3:1 male to female. If you looked at every clinical trial done with hep C, it was like primarily middle aged white males. What we see now in clinical practice, at least in La Bodega, is about a 50/50. Split. And this becomes concerning because as more women of childbearing age become infected with hep C, the risks of vertical transmission from mom to baby also increase,

and we'll come back to that in a second. So I told you that injecting and Hep C are traveling partners, and I mentioned that these injection drug use related admissions are up over 600% in this key 18 to 29 cohort. Incidence of hep C is up 250% in women, and 400% in that key demographic of 18 to 29 year olds. Like I said, heroin use, not even heroin anymore. Around here we can't find heroinm it's fentanyl everywhere you go. It doesn't matter if you're male, female, younger, older, white, rich, poor, middle income, good insurance, Medicaid, it doesn't matter, the rates of opiate use, they cut across every single demographic in the United States. Now, every time you introduce a new network partner into that injection circle, you increase the incidence rate of hep C from 5.8 to 6.9 Hep C infections per 100 people year. That's a lot of individuals. So if you take somebody who's using in the first, say, three years of their injection use, they might infect up to 20 other individuals.

09:00
So there's really a push toward treatment as prevention, getting these individuals engaged in treatment early so that we can prevent that downstream transmission. The frequency of injection also matters. So when you increase the frequency from less than daily to daily, that increases the rate of hep C infection by 67%, which is a dramatic increase. And it makes sense, the more you inject, the more risk exposure that you have, and the more likely you are to acquire Hep C. So I said pregnant women and women of childbearing age are extremely important. And as the demographics have gotten younger and we've seen more females diagnosed with hep C, the numbers kind of go along with this when we talk about pregnancy. So if you look at Hep C showing up on birth certificates, it's gone up almost 90% from 1.8 to 3.4 per 1000 live births. That's across the US on average. If you go to some high risk areas, I was just working down in Appalachia in Kentucky and West Virginia doing some of this stuff, and the rates there are extraordinarily high. Infants born to a Hep C positive mom in the US, the risk is about 1 in 308. And in Kentucky, it's 1 in 67. And the highest infection rates, at least in 2014, and these numbers have been updated but it's pretty much the same, were in West Virginia where the rates were almost 23 per 1000 live births. So this is an area that we're especially concerned, as more young women become infected with hep C, there's obviously a risk of vertical transmission. And on average, that risk is about 6%. But if you're co-infected with hep C and HIV, it goes up to about 11%. I can tell you in La Bodega, I've been doing this now 18 years, and 2021 we've seen the most pregnant women that I've ever seen in all the years of doing it. So this is definitely a trend that is concerning.

11:13
COVID, it's affected everything. I think it's going to have a dramatic impact on Hep C prevalence rates. The reason being, in a one year period, December 2019 to December 2020, there's been a 30% increase in drug related overdose deaths, there's been a whole other year added to that and that number has gone up. I think everybody's probably seen the news, we've eclipsed over 100,000 overdose related deaths in this country. And I showed you some of the data how as those things go up, Hep C comes along with it. Unfortunately, due to program closures and we use more telemedicine maybe during this period of time, we don't have the patients on site drawing blood in some of the addiction settings, for example, as a result there's been a 73% reduction in Hep C screening. Hugely problematic if we're going to try to achieve target elimination by the year 2030. There's also been almost a 25% decrease in Hep C treatment

uptake that's occurred during this period. So this is kind of a perfect storm, you've got rates of drug use just accelerating, screening is going down, treatment is going down. So my suspicion is that in the next 18 to 24 months, at least in the US, and I suspect probably in most developed nations where there's a high prevalence of drug use, you're gonna see that the prevalence of hep C actually has gone up. Now, the World Health Organization wants to eliminate Hep C by the year 2030. I'm no genius, but that's like eight years away. To achieve that, we need to diagnose 90% of individuals who are chronically infected, treat 80% of them, and reduce new infections by 80%. We're not doing a good job of this. We have achieved reductions in HCV mortality, the target was to reduce that by 65%. I don't know that that's us doing a good job or just younger individuals getting infected, and they haven't had time yet to develop long term complications. But the US is not on target for this. Conservatively, the estimate is around 2037, but when you look at the treatment uptake of all the people with hep C, it's like less than 37% of individuals who've been taken up into treatment, which is a problem. So we still have in some states restrictions on sobriety and fibrosis stage and prescriber type. You know, you're not going to eliminate something that you're not allowed to treat. I think that's only logical. So we're not there yet.

14:04
Okay, let's talk about who we should screen. Everybody! It's gotten really simple. CDC and US Preventive Task Force have recently, like a year and a half, moved toward almost universal screening. Every adult individual ages 18 and up are now recommended to be screened for hep C, doesn't matter if they have any risk factors. It doesn't completely replace risk based screening, because as a lot of you who work in the addiction setting know, we have people under age 18 with high risk behavior. We have people as young as 12 years old who are injecting, we have non injection drug use, non commercial tattooing. They recommend screening all pregnant women, not just one time, but at the time of each pregnancy. We have a lot of moms that were negative, they had two kids, something happened, they relapsed, they acquired Hep C and on the child number two or three, now they're infected with hep C. So it's important that we're screening those women at the time of each pregnancy. All active drug users obviously have to be screened. And like I said, this is just a move toward universal screening, but really important that we still consider risk factors.

15:15
How do you screen? Pretty simple, you need an antibody test. Hopefully your places are doing reflex testing. One of the places that was I just in, out in New Mexico, had never heard of reflex testing. So there's still a lot of places that rely on the antibody test, then you have to do confirmatory testing with a viral load. Most places, at least in my area right now, offer reflex testing. At my center, we actually took the ability to order the antibody alone out of the EMR. As more people come into treatment, it doesn't tell you a lot. A positive antibody just tells me that you've been exposed to hep C, it doesn't tell me that you're chronically infected, we obviously need the viral load for that. If you've been treated and cured, the antibody will obviously stay positive and the viral load will be negative. You know, we had a thing where one of our fellows did a consult not too long ago and went to the floor and hadn't done the forensics on the chart in the EMR and they checked the Hep C antibody again, and it had been positive 9 times over 11 years. And I said, 'man, you can check it again, but you're not going to make it negative.' So we

took it out of the EMR, you can only get reflex testing now. There's also reflex testing from the viral load to the genotype, which is is useful as well. If you know that a patient has got a detectable RNA, if you need it for insurance purposes or whatever, but pretty simple. Hopefully you're doing reflex testing. Positive antibody tells you exposure, be careful of the words you use with patients. You've been exposed to hep C, you don't have hep C until you have a detectable viral load.

17:07
Baseline workup. This has gotten really easy. It's not like the old days, super clunky. It's a handful of tests, a CBC, CMP PT/INR, these are baseline absolute necessities. Every patient still, you know the genotype is in question. I'm going to show you a new simplified algorithm that does not have the genotype. Why do we get it? We still have a lot of payers that tell you that you need it. Not only that, but in my clinic, in La Bodega, we primarily specialize in active PWID and you know reinfection does occur, it helps me to determine if you have new virus or it kind of can direct what we do next in the event that we have to. Doesn't happen a lot, but it's still a useful bit of information. And like I said, we do the viral load that reflexes to the genotype. So we're already drawing one thing, we may as well get the added info. Everybody needs to be screened for HIV. Hep B, Hep B exposure, critically important that we identify those patients, all the regimens on the market have a blackbox warning about potential for hep B reactivation. So we want to make sure we're screening for that. Optional stuff, liver ultrasound, you don't need it to initiate treatment, you can do what you need to do based on these labs. If you want to get a FibroScan, that's great to stage your patient, but you don't absolutely need it. I've heard some programs I was working with one in Seattle, they were delaying treatment until patients received their immunizations for Hepatitis A and B, please don't do that. Speed is the key. Speed and simplicity, get people started on treatment as soon as possible. You can immunize them before, during or after.

18:52
Okay, carrying on. This is the simplified algorithm. This isn't for everybody. This is for your treatment naive, non cirrhotic patients who don't have like end stage renal disease or who aren't HIV coinfected, for example, haven't had a transplant. And basically, this is what I just told you. The key things that I would take away from this, when you do a CBC, if the platelets are low under 150,000, that's an indicator that the patient has more advanced fibrosis. So that's somebody who may be in some of these decentralized settings, you might not want to treat them there, you might want to refer them out. If you see an elevated total bilirubin, a low albumin, these are obviously hallmarks of more advanced liver disease. So that's what this algorithm walks you through, and it's important that we identify the degree of baseline fibrosis, because those individuals need lifelong surveillance for liver cancer, if they are indeed cirrhotic. So that's where this is important, and I'll show you how to do that in a minute. So I think they're gonna send you these slides on a PDF. This is like directly from the CDC, it's the cleanest table, I think, that's out there as to how to interpret hep B. We get a million referrals a year for positive hep B core antibodies, and they say the patient has hep B, and they actually have hep B exposure and then they have a surface antibody titer that's a billion, and they were exposed and now they're immune. But this is a nice clean table.

20:27
If your patient was exposed to hep B, if they are core antibody positive, as long as the surface antigen is negative, they're obviously not chronically infected in that moment with hep B. You can treat their Hep C and just carry on like you would, with the caveat that when they initiate treatment, a few weeks in, you're going to check their liver enzymes and just make sure there's no flares. If a patient's chronically hep B and chronically Hep C infected, you're going to treat their hep B first, get their DNA undetectable, then go in and treat their Hep C. Okay, no more liver biopsy, we used to have to do that to stage you, to assess how much fibrosis you have, that's gone, no longer needed. A FibroScan, if it's available, it's like an ultrasound and it tells you if you have any scarring or any fat inside the liver, it does not tell you the etiology of abnormal liver enzymes. So that's important. It just tells you the the degree of fibrosis and also how much fat is in the liver. Okay. Simple tests that I told you before can tell you how much fibrosis or give you an assessment if your patient is likely or not to have more advanced disease. So if you know the patient's age, hopefully you do, and their AST, ALT, and platelet count, you can do this simple calculation, one or another, called the APRI calculator or the FIB-4 index. I say simple, they're not simple, they involve higher mathematics. They involve long division, square roots, multiplication, I can't do it, but my phone does it really quick when I plug it into the app. So you hopefully have these calculators, you plug these numbers in. If you're using an APRI, it gives you a score that correlates with the likelihood or not, same with the FIB-4, that your patient has more advanced disease. On the bottom here, I just put pictures of what the FibroScan machines look like. They're super portable and compact. A lot of programs, mobile units, they take these out on vans and stuff like that. So just to give you an idea of what they look like.

22:39
Alright, we've worked our patient up, we've screened them, we got all our baseline labs, how do we eliminate Hep C? Well, first let's look at how we're doing. So this is a cohort from Seattle, and it compared 2015 to 2018. And of all the people who have ever been tested and told about their Hep C, you go further down the cascade to who's been treated. In 2015 it was only 16% of this cohort, it improved a little bit to 26% a few years later. Now, on average throughout the country, this is pretty consistent with what we see. Most individuals who actively inject drugs, most PWID patients, less than 20% have been taken up into treatment. Now that's a problem. I showed you that the World Health wants to eliminate Hep C by the year 2030. The base of the Hep C epidemic is primarily PWID in the United States, yet less than 20% of them have been taken up into treatment. That's a problem. Why is that? There's multiple reasons, there is barriers that exist on multiple levels. So you begin on the patient side. A lot of patients don't know that they're eligible for treatment. There's no more sobriety restrictions. All the professional organizations have done away with this, actively drinking, actively drugging, no longer a reason to exclude you from treatment. For a lot of patients though, this has been out there so long that it's kind of just in the narrative for them. They don't know that it's curable. They're afraid of side effects. They have this almost interferon based PTSD. I saw one kid like two weeks ago, I said, I recognize the name, I recognize the kid. And I said, 'why do I know you?' And he said, 'you treated my dad.' In the old days, with interferon and whatever else we were using, and he said, 'his hair fell out. He went like wackadoodle. Treatment almost killed him.' We fixed that guy, for the record, but there was so many side effects and this kid saw all

that and he was afraid, he didn't know that the treatment had evolved until he talked to another patient with lived experience and he found out how much things had changed.

24:54
Stigma is still a huge burden to these patients. How they acquired the virus, a lot of this stuff they don't want to go in and talk about. They don't trust the conventional health care system. If you diagnose them in a certain site, they don't want to be referred out to some specialty clinic with people they don't know and they might not trust. There is provider based barriers, a lot of providers that are out there will receive these referrals and they're not comfortable treating people who are actively using drugs. And the two biggest pushbacks you get are that they're going to be non-adherent, non-compliant, and they're just going to get reinfected. Hopefully, in the back half of this talk, we're going to dispel those myths. A lot of providers aren't comfortable with the new treatments, simplified algorithms of workup, they don't know about it, they don't know that they're able to do this, you know, relatively easily, and it's not such a huge lift. Finally, there's systemic based barriers. Systems hard to navigate, you know, you get a referral and you have to call somebody, it takes 45 minutes to get through, you get stuck in the phone tree, you don't know where to go. If you do secure an appointment, how do you get there? Transportation, always the number one systemic based barrier for patients. They might be in a rural setting where there's lack of services, lack of specialty services even available to them. Treatment restrictions around the country, PA process can be complicated. So all of these things stacked together have resulted in patients not coming into care.

26:32
So how do we do it? There's no silver bullet. And really what I preach kind of everywhere I go, is that this requires a mix and match approach depending on the setting, the services available, and who's available to do it. So really, what we want to achieve depends on the where, the who, and the how, right? Something like that, where, who, how, I got to think that through, those might not be the right words, but you know what I mean. So settings, Hep C workup and management has gotten really streamlined and easy, right? So that allows us to decentralize it, meaning, take it out of the conventional GI, hepatology, ID settings, and moving into some of these other settings where most of our patients are already receiving care. That might be in needle syringe exchange programs, addiction settings, primary care, FQHCs, prison setting, but a lot of how we do this depends on what services are there. If you're in a methadone clinic, it sounds great that we just screen you, diagnose you, and treat you right there. But do they have the ability to draw blood? For example. Do they have access to labs? Do they have the staffing? So this is really going to require a mix and match approach, and there's a lot of good examples of how we can do it. And I'll show you a few. We can use a conventional referral. That does work. But like I said, the system's hard to navigate, you really need a multidisciplinary approach. And ideally, you utilize peer navigators or case managers to help navigate and overcome some of those those systemic barriers. Telemedicine. Great. You can get access into anywhere, it's easy for the patients in general, they don't have to travel. It can really facilitate linkage to care. There are some drawbacks, and I'm going to show you some of those that we found in our program. And then finally, co localization. Co localization is really one stop shopping, where the patient is receiving their care for their MAT for example, they can receive all their services that they might need. And that minimizes loss to follow up and really streamlines care.

28:47
So really what we're talking about here, the rationale for treatment among PWID or PWUD, dependent on your terminology, really like I said, this is the base of the epidemic, the most new infections, these are the individuals who are at the highest risk for transmission. We now have medications that are highly effective, more than 98% SVR rates. Studies, there's a ton of data out there that demonstrates very good adherence, compliance, and the same treatment outcomes. Reinfection rates are relatively low. And really reinfection, prevention, the key to that is really good harm reduction and continuous treatment of their underlying addiction disorder. Treatment has gotten simple, no matter what your genotype is, no matter what your fibrosis stage is, it's a two horse race. So there's GP, which you also might know is Mavyret, that's three pills taken once a day with a snack for eight weeks. And the other regimen that we commonly utilize is Sof/vel or Epclusa, that's one pill taken once daily for 12 weeks. Both of these drugs come with an overall SVR cure rate of 98%. That's in the clinical trials. Great. What happens in the real world?

30:09
This looked at GP, or Mavyret, that was utilized. This was a study that came out in Italy, and it was a multinational study that pooled all their data, and just kind of dial in on the the green bars there. And really, what I want you to come away with here is that you can see it's a pretty robust N, it's a lot of patients, over 1000 patients. And whether they met criteria for active PWID, if they had a psychiatric diagnosis, drinking alcohol, whether they were unemployed, or had no or low education. Didn't matter, across the board, these patients when they were treated for either 8 or 12 weeks. The reason that the 12 weeks is in there is because in the old days, we used to use GP for 12 weeks in cirrhotics, but we don't do that anymore, but just in case anybody was wondering. But across the board, the cure rates were just like we see anywhere else.

31:05
What about if you're homeless? So this is another multinational study, they looked at treatment with Sof/vel, and there were 153 patients. And of that 153, there were 31 patients who were excluded from the final dataset. 23 were lost to follow up, there were 5 reinfections within that group. But of the patients in the modified intent to treat, 122 individuals that did get treated, they all got cured. So it can be done, and this was actually in this particular model, this was almost a test and treat model. So everything was done very quickly. They tested and diagnosed and then began treatment as soon as possible. Most patients initiating within less than 30 days. So kind of just want to show you how in a real world setting, this is all very doable.

32:01
There's a study some of you may have heard about called SIMPLIFY. This looked at Epclusa in active PWID, and the patients were incentivized to come in. It was a prospective clinical trial. At the time, it was the only one of its type, and one of the outcomes that it monitored or assessed was adherence. So overall, there were 103 individuals, and the overall SVR rate was 94%. Well, you say that's not 98% like in the clinical trials, but the thing here is that of the 6 who did not achieve SVR, 4 were lost to follow up, there was one overdose death, and one reinfection. So on a modified intent to treat analysis, this is around 99%. I told you they monitored adherence,

they used blister packs, they had like the electronic blister packs, and there were patients who had more than 90% adherence, which was measured by missing less than or equal to eight dosages, so eight days, and the overall SVR rate in that group was 96%. In patients that had adherence that was less than 90%, meaning they miss more than eight dosages, the cure rate was 91%. And this indicates that this is a very kind of forgiving regimen. We don't obviously want to promote variable adherence to patients, but it gives you as a provider a little bit of comfort knowing that if they do miss dosages, there's still a very high likelihood that they'll get cured.

33:35
This is a study that came out of Australia. Just another kind of different design, it looked at, the SS is a standard setting. So a conventional clinic that they treated patients in, in OTP. And then they used a directly observed arm as well. Now overall, the SVR rates were basically the same, right around 97%. In the DOT arm, they had two people that were lost a follow up and one death. But whether they were in the conventional setting or directly observed, you can see that patients were just as likely to get cured.

34:10
This is brand new, this just came out a couple of weeks ago at the ASLD meeting. This was done by my colleague Brian Conway out in Vancouver, he's got a great program out there. It's very resource rich, they have full wraparound services, they're able to follow patients for a long time. They offer every kind of resource for every need, medical needs, psychosocial, behavioral, everything is offered through this clinic. It's an amazing model. It may not be generalizable to every place because it's so resource intensive, and a lot of places don't have what they have in this particular site. The other interesting thing to me here is that it took a lot of visits to get people initiated on treatment. If you look, it took four visits for treatment initiation, and the average interval between visits was anywhere between one to two weeks. So if the longest, you're looking at 7 weeks to initiate treatment, which, to me, is is quite a few hoops to jump through. I prefer that we see them once and get him started as soon as possible. Now of the 114 patients that they took up into this study, one thing that jumps out at me here is that almost half of them were actively using fentanyl. And that's important because they were being treated with GP, which contains a protease, and there's been some discussion about potential interactions with the protease and fentanyl, which really we haven't seen any signal. So half of these patients were actively using it. There were a few cirrhotics, and a few of these individuals had been treated while they were incarcerated. Now of the 114 people, 100 initiated treatment. As of October 2021, 88 have completed treatment. And the table is slightly misleading, I took this directly from his poster ASLD. But of the 81, you see the SVR, 81, it's actually 81 out of 81 that they had the data on as of this publication. So currently, there's 100% SVR rate. And there's been no issues with things like overdose.

36:38
Okay, this is my program. This is La Bodega in Buffalo. Our model is kind of like a series of micro models and one macro model, it's a hybrid approach of outreach, conventional referral, co localization, and we bring in telemedicine, and this model has actually been replicated. It's in about 20 states right now, and we've been talking with a couple of different places in Europe

about putting up a similar type thing. So we've partnered with a lot of the addiction clinics in our area, and we've kind of given everybody an individualized screening algorithm, depending on what they have. It's not enough to say 'well go get an antibody,' if they can't draw blood on site, we need to come up with another way for them to screen. So we've come up with a number of different approaches. When the patients are found to be positive, they're in direct communication with one of our main point persons, her name's Angela, she's our case managers, social worker, she's kind of like the heart and soul of this program. She's my right and my left brain, but everything kind of happens very quickly. When a positive result comes in, it gets sent to her, the patient gets scheduled nearly immediately, and then we contact the patient directly, work out transportation, things like that. We also, any positive tests within our system automatically default to us. So if they're screened in primary care, or in the ER, or in the detox, we don't need to wait for the referral to come in, we see that result and we kind of take it from there. So it's almost like a test and treat model because we initiate treatment at the same time as your MAT, relatively quickly. They've already been diagnosed, we know what regimens we're going to use based on payers, things like that. We can get our labs, we use specialty pharmacy to fill the meds, and very soon we're going to have the pharmacy right within La Bodega, and we'll have meds on the shelf so we can do like true rapid start treatment initiation. We've also got services for providers. We had a program for a while where we did a mini residency for Addiction Medicine providers that would come to La Bodega, see how we do it, and go back to their home sites, and we'd help them to start their programs or to go through. And some folks on this call, I think, have been through that. The rotation is also now mandatory for all of our internal medicine, family medicine, addiction medicine, GI fellows and ID fellows. I don't care if they get, you know, how to do Hep C, but it's mainly to break down the stigmas of addiction. So the more these trainees and kids get exposed to patients with addiction disorders, you know, the less likely they are to go through their careers and talk about the difficult patient or things like that. So it's really about breaking down stigma for them. And we work with the prisons, we've developed guidelines for the jail and prison system, and we have a referral link that works kind of the same way. And finally, we have the telemedicine that we're working with New York State in some of the methadone clinics and rural areas. We've worked with the prisons, and that was kind of born out of the COVID epidemic.

40:14
Why does this thing work? I think part of it is that we overcome some of those barriers I told you about kind of in real time. So we facilitate the linkage, we make the appointment for the patient, communicate it, set up their transportation, and ultimately navigate the system for them. It's a very small team. This year we'll do about 7000 visits, and we're really a team of it's like six people, it's not a huge team that does this stuff. And like I said, one size doesn't fit all, and that includes within my own program. We kind of have to take a mix and match approach depending on who we're partnering with and how we do stuff.

40:53
So we looked at a cohort of active PWID over the past few years, and this was a group of 713 individuals, these were heavy active users. This isn't our cohort as a whole, the entire one if like 3000 people, but this was heavy active users. And you can see whether you use an 8 week regimen or a 12 week regimen, you can see what we used. First point out the adherence.

Overall adherence is around 93%, which is remarkable because in the same program with the same team and the same model, in the non PWID with patients, the adherence rate was actually only 82%. And the overall SVR rates a 97%, which is really impressive in this group. So telemedicine, we implemented it, it worked, we did about 750 visits. By the end of the second week, we were completely over on video. Patients, we saw a 51 patients for initial Hep C eval. We were able to get 84% or 43 of them on treatment, they all got cured. The problem was that it really really slowed the cascade down. What were able to do in under a week was taking us somewhere between 45 and 60 days, because patients had to go get blood drawn, you had to mail requisitions etc. Patients didn't love this, they wanted to come to the clinic. They oftentimes lived with their stressors, it was tough to get on the phone and freely talk about stuff. When they come into the clinic, it's a bit of a different story.

42:39
This is a study we just published to ASLD and it looked at refill persistence. So refill persistence is defined as completing all the fills. So this looked at an 8 week regimen versus 12. And this isn't GP versus Sof/vel. So this isn't Mavyret versus Epclusa. There were individuals in the 8 week arm that got Harvoni, there were people in the 12 week arm that got 12 weeks of Mavyret. So just to be clear. Patients who got an 8 week regimen tended to be younger, 43 versus 48, they were more likely to be female, they were more likely to have Medicaid. Less incidence, and it makes sense, of fibrosis or extrahepatic manifestations. They are younger, right? What the key finding of this thing was, this was a retrospective analysis, we looked at data from Symphony health, and what we saw is that the overall persistence with an 8 week regimen was higher, about 80%. And the issue became in that second refill, there's about a 25% drop off. And then in the Medicaid, when we teased out the Medicaid individuals, you saw basically the same exact thing. So all this showed was that it's easier and more likely to complete an 8 week regimen and get them filled than it is for a 12 week regimen. And we are going to put this manuscript together, we're going to look at what the impact of all of that is on overall cure rates.

44:09
How do we define cure? Real quick, you do treatment, you finish treatment, you wait 12 weeks, you do the viral load again, if you're negative, you're cured. Can you get reinfected? Yes. Can you get the same genotype? Yes. You can't use SVR 4 as a surrogate yet. We're trying really hard to get it to where you don't have to wait that three months. Can we validate waiting 4 weeks, documenting a negative RNA, and considering that that you're cured? We're almost there. Good data came out of the Liver Meeting a few weeks ago, and I think that may be on the horizon.

44:50
Okay, what about reinfection? It happens, so what? If you don't get reinfection you're probably not treating the hardest of the hard, the really, really tough ones to do. This is a big meta analysis that was done that looked at I think 36 studies, the overall reinfection rate was about 5.9%. Okay. But if you stratify things down, patients who maintain their MAT, the reinfection rate goes down to 1.4%. So we know that separation from your MAT results in a greater likelihood of reinfection. So I had to turn the talk in before we had some stuff that just come out, but there's a study that came out of Canada that followed patients forward and what it showed was that their

overall reinfection rate was 2.6%. Patients who were reinfected were more likely to be male, have opiate use disorder, to be younger, and to be HIV coinfected. So that's a study that's just come out of ASLD.

45:57
This is another big Canadian cohort that looked at almost 5700 patients going forward over a couple year period, and they found that the overall reinfection rate was about 2.4%, with the highest rates of reinfection coming among PWID, again, who were co infected with HIV. This is a different study. This is one from a few years ago. But the point here is that reinfection is relatively low, it does occur. And really, it's a failure of harm reduction. So reinfection prevention, the backbone of that harm reduction, I would argue is the MAT, the education that if something happens and you do relapse, how to do it safely, and continued screening. You know, when our patients, a lot of them stay with us because they're on the MAT, if a tox screen turns up to be positive for something that may prompt us to rescreen them shorter than an annual interval. So the ASLD guidelines are that you screen at least annually in the PWID population.

47:08
Okay, there's a summary slide. I'm not going to read you the whole summary slide because there's 10 minutes left, and I see things in the chat and the Q&A. So you read that, I'll read the Q&A.

47:18
And Andrew Reynolds has a question. 'The grand plan slide has a ninth visit for SVR 24, is this a Canadian thing? We just do SVR 12. Maybe they're looking for reinfection?' Yeah. Andrew, that's exactly it. They still, in the particular study, they followed them out for a long period of time and they call it SVR 24. Yeah, nobody does that. Everybody, SVR 12 is the standard. We do the same thing as you. And yeah, they were really looking for reinfection when they were doing that.

47:54
Oh, boy. 'How much of a problem,' this is from Abby Hunter, 'how much of a real problem is the interaction between PIs and fentanyl? I wonder if this is being promoted by the competition?'

48:07
Yeah, I think unfortunately, you know, in the Liverpool app, there's this potential interaction that shows up when you type in fentanyl and GP. In clinical practice, I can tell you that we've treated I think it's 802 individual Mavyret patients, most of whom are active PWID, all of whom if they're actively using are using fentanyl, because there's no more heroin, and we've had exactly zero complications. There's data, if you query FDA data out about reportable outcomes, there's no signal. There's simply no signal. You see in the Conway study, 50% of individuals were actively using fentanyl. Again, there's no signal. So this is something that I don't think is something that we, I can tell you it's something in my clinic that we don't worry a whole lot about. I mean, you obviously worry about fentanyl and the risk of overdose, but I don't think that this is a huge thing, no.

49:26

Yeah, and so Andrew says it exactly right. 'If GP were truly associated with an increase in ODs, we'd see it in the real world, haven't seen it in San Fran.' Yeah, and that's the thing, this information is is kind of being that this narrative is being put out there but there is no data. You're exactly right. We haven't seen this. So yeah.

49:56
Mary Agonaldo, 'are their treatment restrictions for primary care providers in terms of getting prior authorizations?' No. Mary, I don't know what state you're in. If you're in New York, absolutely not, you're good to go. I think if you're in New Jersey and it might be Delaware, are the only two that you still have to be a specialist. But any other place? No, absolutely not. You're fine to go off and do this on your own and get things approved. Okay, answered that.

50:29
Are there any other questions? I don't see anything in the chat or the Q&A. Oh, wait. Hiroko, 'we don't have access to a liver scanner. After Hep C is identified in the lab test, can we go ahead and start the meds?' Yeah. 'So is there any minimal requirement before treatment besides a blood test?' The blood tests are really the key things, Hiroko. You don't need this scan straight away, so long as you're following that recommended list of labs and you're identifying patients who might have more advanced disease. Those individuals, yeah, then you should get the scan and you should probably refer out. But if stuff looks pretty normal, and they look like they don't have more advanced disease, then yeah, you can go ahead and get people started on treatment.

51:25
Heather says that the 'insurance company might still say prior auth in New York, but it's no longer a thing here.' Yeah, New York's a green light state exactly. There's no more prior auth. It does vary by insurance. Sometimes you get the wonky Medicaids that want you to send stuff, you know, prior auth doesn't mean like you just e-scribe it and they magically get the meds, right? You still have to submit a paper. Hopefully as you do more of it, you learn what labs the payers want, you send it in with the note, and you're good. But there's no more restrictions either in New York state, so no more sobriety or fibrosis. But yeah, you still do have to send in paperwork and certain documentation. That's absolutely right, Heather.

52:16
Anything I missed? I think we're almost coming up, oh we've still got seven minutes, I did pretty good. I talk quick. I'm going to put in the chat thing, I'm going to write my email and put my cell phone. Everybody else has it, you all may as well too. And if you didn't ask something and you think of it later, you can either email me or you can send a text or something. I might have just sent it to the host and panelists. I'll do it again. But if there's no other questions, thank you all very much. I know it's a tough hour. It's late in the year before the holidays and I appreciate you sticking around with me and sticking through this thing. So thank you all very, very much.

53:09
Thank you so much, Dr. Martinez.

[End]