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Global PARITY Study: Pediatric Critical Illness Insights

This World Shared Practice Forum reviews the Global PARITY Study, a comprehensive research initiative aimed at understanding and addressing pediatric critical illness in resource-constrained settings. The discussion highlights the methodology, challenges, and key findings of the study, emphasizing the high prevalence of critical illnesses such as pneumonia, sepsis, and malaria among children in low socio-demographic index regions. The authors stress the importance of basic critical care interventions and the need for global health equity, advocating for the integration of critical care into health systems worldwide.

SPEAKERS:

Teresa Kortz, MD, MS, PhD

Associate Professor of Clinical Pediatrics

University of California, San Francisco

Adrian Holloway, MD

Associate Professor Pediatrics

University of Maryland School of Medicine, Department of Pediatrics

Traci Wolbrink, MD, MPH

Senior Associate in Critical Care Medicine

Department of Anesthesiology, Critical Care and Pain Medicine

Boston Children's Hospital

Associate Professor of Anesthesia

Harvard Medical School

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Sarah Marcley *00:04*
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Traci Wolbrink *00:18*
Hello and welcome to the World Shared Practice Forum. I'm Dr. Traci Wolbrink, a pediatric intensivist at Boston Children's Hospital and co-director of OPENPediatrics. I'm delighted to be joined today by the first authors of the Global PARITY study published in February 2025, in The Lancet. The global PARITY investigators are a subgroup of the Pediatric Acute Lung Injury and Sepsis Investigators, or PALISI network. I'm going to start with Dr Teresa Kortz, who is a Associate Professor of Clinical Pediatrics in Critical Care Medicine at the University of California San Francisco. Wonderful to have you here today.

Teresa Kortz *00:52*
Thank you so much for inviting us.

Traci Wolbrink *00:54*
And we're also joined here today with Dr Adrienne Holloway, who is an Associate Professor of Pediatrics at the University of Maryland School of medicine and the North American co-chair of the police Global Health subgroup. Welcome Adrian.

Adrian Holloway *01:09*
Thank you. Glad to be here.

Traci Wolbrink *01:09*
All right. Well, we're going to just dive right in and Teresa, maybe if I can start with you. I'm hoping that you can talk to us a little bit about why you developed this study. What were your objectives in getting this off the ground?

Teresa Kortz *01:20*
Yeah. So we really started this study, actually a series of studies almost a decade ago, when we realized that we didn't have a good understanding of the burden of pediatric critical illness, especially in resource constrained settings. And it came to our awareness within the pediatric Global Health subgroup of PALISI that about 80% of global child deaths are occurring in resource constrained settings. And while we clinically practice primarily in North America, at least within the PALISI network, that's not where the burden is. And so we also then took a kind of a deeper dive into what children were

dying from, and realized that those were primarily critical illnesses. So think about infectious disease deaths, those are really sepsis. And if children are dying from pneumonia and tuberculosis, that's really respiratory failure. This is really what we do as pediatric critical care physicians, is we take care of children with these conditions. So we thought, is there a way that we could, one, understand this burden better, and two, how could we help to reduce this burden overall? And so we set out with kind of three main objectives. The first was to measure the burden of critical illness. And we did that first with a systematic review and meta-analysis, but very quickly realized that there was no unifying definition of pediatric critical illness. So we had to go out and develop that first before we could then measure the burden of critical illness. And that definition of pediatric critical illness was actually led by another member of the subgroup, Dr Anita Arias out of St Jude and so she did that with a modified Delphi, which was also published in The Lancet the year before. But with that definition in hand, then we were actually able to go out and do a point prevalence study across resource constrained settings globally. So the key finding was that the prevalence of pediatric acute critical illness was 13% but to say that in another way, and not to get lost in the statistics, that means that one in eight children who sought care at a participating hospital had acute critical illness, which I think is a staggering number, when you think about it.

Traci Wolbrink *03:27*
Amazing, such an important point.

Teresa Kortz *03:29*
One of the reasons we had to define pediatric critical illness is because previously it had been mainly defined by admission to a pediatric intensive care unit. But PICUs are not universal, and certainly children without access to a PICU still suffer from critical illness. And so we realized that we were missing, kind of, this entire group of very vulnerable children in, you know, in studies that had previously been published in the pediatric critical care space. And that's one of the reasons why we we wanted to redefine it and remeasure it.

Traci Wolbrink *04:05*
That's great. And I think you know in terms of its impact for your study. How do you think you know things would have been different if you wouldn't have taken this additional step?

Teresa Kortz *04:15*
I think we would have missed so many of these children. If you think about it or looking at our participating sites use, 66% of them reported having a formal pediatric intensive care unit, but almost all of them actually had or reported having the capacity to deliver critical care level interventions. And so if we had limited to just formal PICUs, we would have missed probably up to a third of our patient population, and those are arguably the children who had the highest prevalence of critical illness and mortality. Adrian, anything to add?

Adrian Holloway *04:52*
I think, you know, one of the important things, I think, is, not only sort of describing it, but contextualizing it to the setting, to level of resources, and sort of understanding, sort of that the mortality, sort of in critical illness, is largely driven by poverty.

Teresa Kortz *05:11*
You know, one of the main reasons to generate the data in the first place is really to inform resource allocation as well as policy decisions. So we had in mind not only how we define the problem, how we would measure it, but then kind of big picture, where it would go, and what we wanted to do with the data, once we had it generated.

Traci Wolbrink *05:29*
Fantastic and kind of speaking of data, you know, I'm hoping you can talk a little bit about the methodology that you took to answer this question, because obviously trying to gather this kind of data has a lot of challenges in terms of, how do you get into, you know, the environment that you're intending to study. How do you partner with local people that are local clinicians that are seeing these patients? So I'm curious, you know, if you could talk a little bit about the methodology and also maybe some of the challenges that you faced and how you overcame them to be able to achieve and collect the data that you did.

Adrian Holloway *06:03*
I think it was, I think a multiple fold sort of way to address sort of the problem, I think. One is creating and finding the network of interested intensivists or pediatricians who work in low resource settings, and finding a way to support them. Part of that is making a case report form, or really, sort of asking the question about what is critical illness in low resource settings, without the lens of those of us who work primarily in a high resource setting, sort of defining the questions or defining what data is important. And then sort of, how do you sort of operationalize, you know, a large scale point prevalence study across the world. And so part of the sort of the creating the sort of interested parties was all of us, sort of reaching out to our own respective networks and sort of asking the question, so are you interested in this? This is what this would look like, allowing them to inform us about the sort of workflow and sort of the anticipated barriers that may be coming up. And what we really did was had office hours in language, and so describing the study, describing the workflow and soliciting feedback sort of very early on, and then sort of utilizing our networks to sort of expand the pool of interested parties. And so through that, so we utilize PACCMAN, which is mostly located in Southeast Asia, sort of region. LARed, which is a South American Critical Care Resource Consortium, and then utilizing our friends who work, you know, in sub-Saharan Africa, the Middle East and Central Asia, to sort of describe and sort of elaborate the study. One important component of our study is the steering committee, which was majority intensivist investigators from low resource settings. And from a series of meetings, from there, were able to sort of really create a case report form, data collection form that really did sort of reflect the issues and questions about critical illness, detecting critical illness in low resource settings. And then the last part is sort of creating a platform where sort of we could sort of have a clearinghouse of all the information, videos about how to collect data, step by step, sort of instructions in language. And so the languages we use were English, Spanish, French and Portuguese. And so all the data translated, the videos translated, et cetera, to make data collection as easy as possible, which included creating a website for people to access with all the information. A packet that had all the information, including the IRB specific aims, CRF form so that it would be easy for the institution to submit. And we also provided some direct payments to our low SDI [socio demographic index] sites cover internet to allow for full participation in certain sites, as well as cover the IRB costs in certain locations. And so it was sort of a heavy lift to get it started, but the enthusiasm about sort of answering this question, and the local collaborators. I think being able to sort of show the work, the burden of illness and the resources that

they need to be able to impact outcomes in those critical children in those settings, led to, I think, a great product.

Traci Wolbrink *10:12*
Well, I think that's fantastic. And it sounds like, as you said, incredible amount of work to get this up and running, but by working together with all these local stakeholders and really devising a intake form, data collection tool that would be useful and I imagine, pretty easy to use. How long do you think it would take someone to input the data?

Adrian Holloway *10:35*
That's a good question. I think as little as probably 30 minutes to sort of collect data, particularly on the intake form, because there's a lot of questions about comorbidities, getting some vital signs, etc. And to sort of further explain that we had three sort of different case report forms. One is a primary intake form that really sort of described the child as they showed up to care, which, you know, a little bit of past history, assessment of danger signs, assessment of vital signs, mental status, etc. And then the second case report form was their resource utilization during their stay, and sort of determining whether those children develop critical illness or remain critically ill at that time. And then the third was primarily an outcome based measure. And so the outcome was, you know, transfer to higher level care, a mortality, a discharge or an abscontion, and then sort of trying to sort of assess what the sort of final cause of death is, or what the final sort of discharge diagnosis was. I think all told, and most places did this in retrospective fashion would probably take an hour or so per patient.

Teresa Kortz *12:08*
Yeah, and just also to highlight some of what Adrian said is really that the success of this study was dependent on the enthusiasm and commitment of our global partners and the Global PARITY investigators. Honestly, without their interest and enthusiasm, none of this would have been possible, because a lot of this was a labor of love.

Traci Wolbrink *12:28*
That's incredible. And you know, by simplifying this, you got 46 sites and a ton of patients. And so obviously this could be, you know, is meant to be super commended for the work that you did. I'm also curious, you know, for those that are listening, that maybe are trainees or haven't come across a point prevalence study before, I was hoping you could kind of talk a little bit about, like, logistics of, how did that run when you were working with 46 different centers, how did you kind of actually conduct that and communicate with people?

Teresa Kortz *13:02*
So for a point prevalence study, what we did is we had four different time points throughout the course of a year, and we had these 24 hour sampling frames. So the goal was to capture all children who were coming in with an acute illness or injury within that 24 hour time period, whether they presented to the emergency department or they were a direct admission, because we wanted to capture that full denominator of all children who are presenting with an acute condition. We wanted to include participating sites that were resource constrained hospitals, and that's essentially a site that has a resource limitation and some key component that's needed to deliver care, whether that's personnel, equipment, training education or just consumables. You can imagine, though, that there's quite a bit of variation between what considers resource constraint in different settings. So we're actually doing sorry

for each participating site, they had to complete a very detailed survey regarding resources that are available, and we're doing a deeper dive looking into that now, so that we can actually categorize the hospitals that participated by their resource availability. And we were interested in children who were presenting within this 24 hour time period, who were outside of the neonatal period and up to about teenage age, so up to 14 years. And a part of that has to do with how patients flow through hospitals in many resource limited settings. And then, as I said before, we use the definition that had previously been developed that was resource agnostic, so it could be applied across resource variable settings to define acute critical illness. And so that was within 48 hours of presentation, any child who had acute instability resulting in death or needed a clinical support requirement. And so that could be in the form of non invasive ventilation, invasive mechanical ventilation, need for vasoactive support, or any need for increased monitoring or a time sensitive intervention. And that was operationalized as admission or transferred to an intensive care unit if it was available, not all centers that would participated had a formal Intensive Care Unit or to a high dependency unit, which is often a higher level of care that hospitals, especially in resource limited settings, offer, or if they need to be transferred to another facility for a higher level of care. And then, as Adrian mentioned, we wanted to capture not only the prevalence of critical illness, but also the resource utilization. So we then followed admitted children, both for resource utilization and then up to 30 days for hospital outcomes.

Traci Wolbrink *15:35*
Fantastic. I'm curious if you can tell us a little bit about what you then found after all of this work and enrollment, and as you went through the data.

Adrian Holloway *15:47*
I think it's interesting, right? Because we found, you know, so many, you know, sort of important, so many important facets of critical illness and low resource settings, sort of you know. So the upshot is, we found that, you know, critical illness is very common in low resource settings, and that we found a rate of acute critical illness about 13% so a little more than one in 10 children who are presenting for an acute complaint. You know, a significant portion of those children will be acutely critical, critically ill sort of based upon, sort of, you know, our definition that we sort of created through DEFCRIT. Also important is that, you know, the main driver of acute critical illness in low resource settings is infectious disease. It's pneumonia, sepsis, septic shock and malaria. Those are top three causes of acute critical illness, and then followed by injuries. And what we also sort of saw that we were surprised, and it's probably our own bias, right, that informs that that our mortality, writ large across the group, was lower than we expected. However, the vast majority of the deaths occurred in sub-Saharan Africa, where those children have higher rates of co morbid illness, including sickle cell disease, and those children did not have access to an ICU. And so what we sort of found was that as your SDI went down, your as your SDI rather, got lower or you had more poverty, that your mortality from critical illness went up, your rates of critical illness went up. But also found that with through sort of multivariate analysis, it's not necessarily the SDI, but largely probably the access to resources that define your mortality and critical illness in low resource settings. Try to take that in sort of like broad strokes. Teresa, anything to sort of add or modify to that?

Teresa Kortz *18:03*
Maybe just for context, we've been referring to the SDI, which is the socio demographic index, and it's a measure that was developed by the Global Burden of Disease (GBD) group, and it categorizes a country's socioeconomic development. So it actually combines data on the economy, education and

fertility rate. So it's not just the gross domestic product alone. And what's great about this is that it's more comprehensive, and it's also been shown to be closely tied to health outcomes. And so we categorized each of the participating hospitals by their country's socio demographic index, and so we were able to then analyze outcomes based on that socio demographic index categorization, or socioeconomic development level. And I think one of the key takeaways, I agree with everything you said Adrian, for me, was actually the just the health inequities that we were able to discover with this so as as you said, not only was the prevalence of acute critical illness very high in this cohort, so at 13% but it was actually almost it was more than double that in the low socio economic development category. So it's 28% and while the overall mortality in the cohort, again, was lower than we expected, it was more than double the baseline or the cohorts point estimate, it was more than double that in the lowest socioeconomic group, and so it just really highlighted this huge discrepancy and persistent inequities and health outcomes where the lowest socioeconomic sites were hit with the hardest burden in both prevalence and mortality.

Traci Wolbrink *19:40*
Thank you, Teresa, I think that and Adrian, that's super helpful. And you know, one of the things you know you wrote in your discussion, some of the rationale and reasons for this may be delayed presentation, malnutrition and others. And you know, I was also sort of struck by the fact that many of these children did not have, you know, a ton of comorbidities. If you look at the number of comorbidities that were in, you know, in the reported data, zero, one, or greater than two, in terms of the patients that presented, many of these children should be children that you know, with the right therapies, we can make a substantial difference. And you know, as you were saying, the burden is more so in the lower SDI countries. And so I'm curious, you know, with this in mind, what are some of the the lessons to be taken from the pediatric critical care community? How can we better serve these patients, and what's needed to kind of change the impact in this burden of disease in in many of the places that you studied?

Teresa Kortz *20:52*
Yeah, I think when we looked at the most common diagnoses associated with critical illness in this cohort, as Adrian mentioned, it was pneumonia, sepsis, malaria and injuries. And so these are things that we're actually quite familiar with and treat often as pediatric critical care intensivists. And I think what's needed is a bit of a frame shift in how we think about critical illness in resource constrained settings. So if you think about those, you know, just those top four diagnoses, they don't require high tech interventions to be lifesaving, right? So we're talking about acute stabilization, fluid resuscitation, maybe oxygen and ventilation, not even invasive ventilation. Nutritional support can go a long way to improve outcomes, and then just the appropriate antimicrobial therapy. And so if we think about what we do in the basic in the most basic form of delivering critical care, it's those pillars of support. And so just switching that frame shift to think that what we do for most of our patients is basic critical care, and that could go such a long way to improving outcomes for children in resource constrained settings. All of a sudden, I think critical care can be thought of as an essential component of the health system, as opposed to a luxury or something that is too expensive or too technologically advanced that it's prohibitive for the majority of settings.

Traci Wolbrink *22:19*
That's fantastic and I imagine that this, the results of this will be really helpful for advocacy in terms of ministries of health and, you know, just governmental allocation of resources. Is that something that you all as a research group are working on at present?

Teresa Kortz *22:40*
So we're actually fortunate. We're in perhaps a policy window currently, because the WHO World Health Organization passed a World Health Assembly Resolution in 2023 that aim to integrate critical care into the acute care pathway. It's actually called the ECO initiative, emergency, critical and operative care. And so this is the prime time to be able to take these data and then translate it into actual action. So with the WHO kind of determining the global policy and priorities, we have been able to partner with them, both through collaborating centers and then through the Acute Care Action Network [ACAN] which is a network of implementing partners around the world who help to implement the ECO or emergency, critical and operative care initiative. And so I think we're in this rare window of time where there's real momentum and buy in. The stakeholders are engaged and with something as powerful as the WHO behind an initiative, there is the opportunity to strengthen health systems, improve education of health providers to advocate for increased resources, especially those related to pediatric critical illness.

Traci Wolbrink *23:59*
Great. Adrian, do you have anything else you want to add?

Adrian Holloway *24:01*
Much of what Teresa sort of already said, I think that looking at these sort of studies, or producing this work of of the study is very informative about sort of the low hanging fruit that can be mobilized to positively impact outcomes in low resource settings with children who are acutely critically ill. I think there's also a large sort of implementation opportunity. Some of the bundles already exist. Some of the resources are present on the ground in some of these sites, sort of understanding why or why not resources or bundles are not being used, and then sort of understanding whether or not how and when we make the interventions. Does it impact outcomes? I think also important in this is that those of us who operate in pediatric critical care, in low resource settings, operate in a PICU, where we have specialized people in a specialized space with specialized things to take care of critically ill children. I think not only is it important that we understand who was critically ill, who's at risk for being critically ill, what critical illness looks like in low resource settings, but also utilizing advocacy, health economics implementation to really sort of promote the idea of a dedicated space for critically ill children to be cared for with specialized teams of people. And that because in our sort of in our work, in multiple studies, sort of that looked at this is that once you get critical children in high resource settings or even low resource settings, the mortality does change. The outcomes do change. And sort of being able to sort of put our energy on, for those of us who work in high resource settings, those of us who are sitting on sort of the council of SCCM, pediatrics and PALISI to sort of talk about the role of, you know, a pediatric ICU as a life saving standard of care tool to sort of impact critical illness low resource settings. Access to critical care should be the standard of care, despite your location of birth. That it should be the standard and that the accident of your birth should not determine your outcomes.

Traci Wolbrink *26:33*
Fantastic. No, I think you both are describing lots of work to be done, and a really great climate and enthusiasm for trying to push, you know, the care a bit further in these environments. I wanted to ask one question related to the data kind of coming back, which sort of relates to, you know, where do you put your your resources? And your efforts in noticing in your your figure three, where you have kind of the list of diagnoses which we referred to a couple of times during this conversation, of which ones were most prevalent across the different SDI configurations of the hospitals. And I'm noticing that there's, you know, quite a big difference between the low SDI and some of the middle and high-middle hospitals related to things like sepsis and acute malaria, cancer, etc. And I'm curious, as you looked at this data, how did you interpret that, and how does that sort of influence you as you think about what resources are necessary, and is it different for these hospitals with with different backgrounds and resource constraints?

Teresa Kortz *27:42*
Yeah, that's a great question, thanks. Traci. Yeah, you'll see from that figure that the top 10 causes are ranked in order by the global prevalence, and that's across that cohort, and it's predominantly infectious diseases. But then once we broke it down, as you said, by socio demographic category, you start to see that there's separation. And what this is really showing, or the way that I interpret this is that the predominance of infectious diseases are being driven by the prevalence in low socio demographic areas. But once you kind of shift out of that, then trauma actually becomes the most common pediatric critical illness, which is consistent with other global data that shows that as countries kind of progress from low to middle income to high income, the burden of disease shifts with that demographic transition. And so this is really important, and also shows why this type of work needs to be done is because if we just did a global study and recorded the results as such, we would miss that kind of nuance. And as we're thinking about health system strengthening and increasing capacity, you want to make sure that what you're doing matches what the burden of disease is regionally or locally. And so clearly, there's a more infectious disease component for the low resource settings, or the low socio demographic hospitals, but the hospitals in the higher socio demographic categories need to be better prepared, for example, for trauma. So you can think about how, from an operational standpoint, what you would need to plan for the resources available, the education for your healthcare providers, the equipment, all of that needs to be tailored to the actual patient population you're caring for.

Traci Wolbrink *29:28*
Thank you. That's incredibly helpful, and I think provides really great framework for those that are interested in doing training, education and sort of thinking about the protocols to be implemented in these these centers. I'm curious, just to ask you all a question, was there any results that you found that were really surprising or that you did not expect to find that you did?

Adrian Holloway *29:53*
I don't think it was really included in this manuscript. But I was very, sort of very closely, sort of attuned to sort of the, you know, sort of data, sort of collection, sort of, you know, some of the cleaning and stuff like that. One of the things that sort of intrigued me the most, sort of with the data are two parts. The role of the critical care space is, I think, slightly different than sort of what I'm used to, particularly in the lowest resource settings. We sort of look at the resource utilization in our low SDI population, the critical care space was less used for intervention. So not sort of a space where children got non-invasive positive expression or invasive mechanical relation or vasoactives. It's a space where kids got

antibiotics and blood transfusions. They got vital signs where you start to see as a kid sort of move through the hospital system. Once they're located in high dependency unit or critical care space, you start to see vital signs sort of pop up in the in the case report form. And so I thought that surprised me in a way, because many of the sites that we queried had access to invasive and non-invasive mechanical ventilation, vasoactives in the sort. But to me, the interesting story, I think, that comes out later on, this sort of understanding the context of resource utilization in these sites, this sort of that intersection between having access to it and then not necessarily utilizing it, and sort of, what is the role of the critical care space in those settings?

Traci Wolbrink *31:46*
Great, and kind of on a similar question, is there any data that that we haven't discussed, that you think was really important or impactful to highlight to our audience out there?

Teresa Kortz *31:59*
I think to add to what Adrian was saying, perhaps it wasn't it's not the data that we showed, but rather the data that we were unable to capture. One of our kind of secondary objectives of this study was to be able to better characterize the pediatric critical illness. And so we had included data fields to be able to capture things like laboratory values and inflammatory markers, microbial culture results, which is informative for sepsis etiology. We included fields to capture pediatric ARDS, settings and criteria. And what we found was, well, that was the the hope of the secondary objectives. We were unable to capture those data, probably because they're not being captured in clinical settings. And so I think that this really inspired our group or demonstrated to the PALISI global health subgroup that there's still quite a bit of work to be done in this space. And while we may have an understanding of the overall burden, kind of getting more into the details of the severity of illness and the specific conditions that children have, and then how to improve those outcomes. There's still a whole area of work and an opportunity there to improve, to improve outcomes and data collection and capture.

Traci Wolbrink *33:27*
Thank you, Teresa, you're like a plant. I was just about to ask you, what are your next steps? What else needs to be investigated, and what is your subgroup thinking of doing next?

Adrian Holloway *33:40*
Yeah, so I think Global PARITY, I think answered one question, and then in doing so caused us to ask a whole host of other questions, and sort of understanding, sort of that the picture is really as clear as mud in sort of understanding, what do we now do to impact these outcomes? And so one of the sort of upcoming projects that PALISI subgroup is helping to lead is something called SPARK, or SPARK global. So there is a prospective validation of the Phoenix criteria for sepsis and septic shock that is being led by remind me of her name, Teresa, I'm sorry.

Teresa Kortz *34:27*
Oh, Dr Shannon Leland.

Adrian Holloway *34:32*
Yes, right, in mostly looking at high resource settings. And so the Global PARITY group or network, or the PALISI Global Health Group, is being tasked with trying to do the same thing or validating the sepsis, the Phoenix criteria for sepsis and septic shock prospectively, but using information and

patients in low resource settings. I think A) it will contribute to the data by understanding the burden of illness of sepsis and septic shock and low resource settings. Oftentimes, when we talk about global the global low resource settings are oftentimes neglected and are not sort of fully, sort of empowered to contribute data to this important field. And so right now, we are in the process of modifying the case report form, simplifying it, and again, in discussion with our local stakeholders in various parts of the world, so in South America, in sub-Saharan Africa, in Southeast Asia, reviewing, again, the case report form, editing it, thinking about modularity in sort of creating case report form to prospectively investigate or sort of validate the Phoenix criteria in low resource settings. This is also kind of important, because even though sepsis, septic shock was a big driver of critical illness across low resource settings, the germs are different. And so much of sepsis and septic shock in sub-Saharan Africa driven by malaria and meningitis, and so being able to create a platform in which, you know, local or regional groups are able to sort of speak to not only what drives critical illness, but also what resources and what interventions may make significant impact in their outcomes, and then sort of also sort of bubbling, sort of in the background, a little bit with Global PARITY sort of following up on this sort of defining critical illness, and sort of understanding, in part, who dies from critical illness in low resource settings is that there is some work being done with some collaborators in Pakistan and in Zambia trying to sort of create a cardiac arrest prevention study, so looking at those children who are critically ill, and trying to figure out whether or not we can identify those children who are at high risk of developing cardiac arrest, sort of, you know, sort of stepping on some of the data that we generated from Global PARITY.

Traci Wolbrink *37:27*
Fantastic. Well, we certainly will be looking forward to lots of further research and impact into, you know, so many, so many sites in the global health space. I was hoping to for the last couple minutes that we have to just shift a little bit for trainees or young career investigators that are thinking of getting started or are interested in a similar research and career pathway as both of yours. And I'm curious if you have any suggestions on how they might be able to get involved, or any words of wisdom that you might offer to individuals such as these, maybe Adrian I can ask you to go first?

Adrian Holloway *38:11*
Yes. I think of my career in global health is one of a series of saying yes to zany schemes. And so my advice to you know, you know, young investigators and fellows and residents who are interested in global health is one to say yes to to things judiciously, but saying yes to people who want to invite you to a meeting or ask you to participate in some study. The other part is trying to find like-minded individuals, both at your institution or through groups like PALISI There is, we have a clearinghouse and list serve of interested people, where research abstracts are shared, research proposals are shared, etc, and so being part of those groups to sort of understand what is coming down the pike through people who are studying the things that you are willing to study. But also, I think, is, you know, finding good mentorship, which is easier said than done, to be frank. People who are sort of doing good, equitable work in global health, and it sometimes may not be within your field. And so you know, for instance, at my institution, there are people working in emergency medicine, internal medicine, infectious disease, who are also doing global health work, but also can serve as excellent mentors for people who are attempting to build their career. And the last part of that is that it takes a lot of different skills to be effective in global health. I work with a lot of implementation scientists, a lot of basic research scientists, a lot of translational scientists who work in global health. I sort of work in education and capacity building, and so it takes all of those skills to put something together, like Global PARITY. And so you don't have to be one or the other, or one particular field, but sort of linking yourself with

those people who sort of understand what the work looks like, I think is the most important feature of being successful.

Traci Wolbrink *40:43*
Amazing, thank you. Such incredible pieces of advice. What about you, Teresa, what advice might you have?

Teresa Kortz *40:51*
So my passion for Global Health actually started a long time ago as an undergraduate. I studied abroad, and it was during that experience that I realized that where someone is born dictates whether they have access to health care, education, clean water. And it really opened my eyes and set me on a path to address global health inequities. And I did that initially, and had in mind that I was going to do that as a clinician, and it wasn't until my fellowship in pediatric critical care, when I did the required research project, that I realized kind of the power of research to be able to impact the health of not just the patient in front of you, but really an entire population of children. And that experience is similar to the Global PARITY results answered one question, one research question, but really just opened up a whole Pandora's Box of additional questions for what to do next and how to improve the health of children, especially in resource-constrained settings. And I think in terms of advice for people who are earlier on in their career. One is agreeing to finding like-minded groups of people and being part of the networks and the opportunities to share ideas and hear what others are working on. And I think the PALISI Global Health subgroup is probably one of the best, if not the best, group of pediatric critical care providers who are doing just a wide variety of incredible global health work across, you know, education policy research and research from translational to quality improvement, etc. So it's really a great group of people who come together under the important work of global health, but come at it from very different directions, with different expertise. And I think the other advice I have is is to be open and willing to hear new ideas and try new directions. I think oftentimes when you hear about someone's career path. It sounds like it's a very linear logical progression, but the truth is, it's not. It's really a winding, kind of torturous path. And many of us don't know, you know, where we'll end up in five years, but we're open to trying new things and meeting new people, and it's those interactions that really spark, I think, the most incredible ideas and opportunities. And so being open to kind of those turns in the pathway. I think in global health in particular, whoever you ask regarding their pathway will have such a very different, divergent path, that part of this is, you know, choosing your own adventure and knowing where you want to go, but being open to those opportunities to take side paths as well.

Traci Wolbrink *43:42*
Amazing. Well. I think all of that definitely resonates with me as well, and I just wanted to take this opportunity to thank you both for joining us today and sharing with us your insights for the Global PARITY study. Sort of what are the next steps, what are the salient findings, and also sharing your advice and a bit of your career pathway for our listeners. So very much appreciate you taking the time to be here today.

Teresa Kortz *44:09*
Thank you, Traci.

Adrian Holloway *44:10*
Thank you, it's a pleasure to be here.

Sarah Marcley *44:12*

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ARTICLES REFERENCED

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