I decided that after we made various efforts to communicate better and basically end up putting out allot of fires of anxieties that were at a crisis stage in terms of their damage on uptake of immunisation decided that we really needed to understand those growing trends much better and particularly investigate certain situations so we set up the vaccine confidence project, I set it up with two of us and we built it out now and we have about twelve people and a network of researchers around the world, really trying to understand what are the drivers that determines of different types of concerns both what helps uptake as well as what interrupts it around the world and that's really what we do and what we are seeing is allot of these issues on vaccines are related to other things and it's the other things that make it pretty interesting

Is there a specific part of the world that you do focus on?

We are very global and actually right now most of the research is very location specific vaccine specific and one of the things that I had the opportunity to see in my earlier role in UNICEF was the connectedness of some of this and with the increasing social media and communication environment being increasingly connected that's getting even more transnational so we are looking at how these rumours, and concerns and issues spreads and we also trying to keep a global look at it and very that's very much our perspective with allot of individual feet on the ground in different countries

In your opinion, why are some communities that are hesitant towards vaccine hesitancy?

There are some communities that are hesitant and others that are much more positive and sometimes you have a positive community with just a couple of individuals but when it's a whole community or a larger community, sometimes it's a religious reason, sometimes that community had a bad experience with a particular vaccine or a actually with another health intervention that broke the trust with the health system sometimes or with the immunisation its political issues, local politics that weigh into because this are government regulated, provided distributed health intervention so if you have a problem with the government or the local politics it can sometimes gets played out by around vaccines and that's some of the ways that it varies with some of the communities and then you have ideologies that have their own ideologies or to have alternative notions of health or has their own personal experiences

How do you define engagement in the context of the work that you do?

Well in the context of our work on engagement in which we do at multiple levels its about dialogue its about moving the communication from a one-way information sharing or information promotion to making it a dialogue to having a conversation at a patient provider level or group to group I mean in this environment we want to have conversation across groups and make it a dialogue engagement means ownership engagement mean involvement in a very genuine sense of the word and not in a token way.

I was fortunate enough to attend the Call to Acton Conference hosted in berlin earlier this year which addressed how antimicrobial resistances poses a threat to us all in todays interconnected world. One of the solutions proposed for low to middle income countries was to provide better education on vaccines, in your view, how can this be delivered is it about education or is more about in depth engagement needed ?.

I think you need both particularly in the case of antimicrobial resistances I think their needs to be some explanation in how its related o vaccines because it's not obvious that people think of AMR and they think of antibiotics and when you throw vaccines into the conversations I think it's important that its clear why and how vaccines can help mitigate AMR but I think engagement is also needed you need local champions, you need local peers to explaining and having some support for it.

What other solutions can be provided from an engagement perspective in regards to epidemic preparedness and responses.

Well let's see, that's a big one.

I mean I think if you're talking about preparedness and not engagement at the time of an outbreak which its important because you don't build trust in times of crisis so I think of you think of engagement of trust building I think mapping who are the people and the institutions the stakeholders in a community that would be the people you would want to call on or would play a role in an epidemic response, they should know, I mean communities should know or think that through before they actually struck by some kind of epidemic. Ways to engage is thinking that through in advance I know that their was allot of talk about that after a few with SARS, Flu, Ebola allot of communities have faced threats and I think in retrospect and future spec looking forward prospectively, trying to think through, well what would we do, what would be are instinctive things we do, who in the community should we call on, what roles should we play, I think to involve in the planning if it's a preparedness thing.

Do you feel that those involved in immunisation delivery and research are by and last trusted by the communities they work in.

Depends on the community, but I would say that in general or by and large do you say thee health workers and health professionals still manage to stay at the top of the who do you trust list while government media and certainly industry have dropped down the list in terms of trust with the public, the health profession has stilled stayed ahead above the others now it's a fragile lead so I think it's really important that it gets keeping renewed and we can't take that for granted. But yes by and large they are trusted but again it depends on the community and depends on the local experiences.

How can practitioners make them self's more trustworthy?

You have raised an important point by talking about trustworthiness because we often talk about building the trust with the public without really being self-reflective and saying well are we being trust worthy as institutions and I think there's some there are two key elements that are consistently characterised as defining trust between a person or a community and institution and that is trust in the competence the ability of the institution or health professionals to deliver what they say they can and the second is motive individuals and communities don't always trust the motive of institutions and sometimes individuals if they feel like giving them vaccines is making somebody money it doesn't feel so good, it probably making someone an income somewhere but I think that it's a really difficult question if they feel like a person feels like we are just another check on the list

and if they get ten checks and jabs they are going get a promotion, they don't really care about me that motive question is a very important one

Its also I guess if I can add revaluating the sort of power dynamics between scientists and communities particularly in low to middle income countries as well I guess is how do we do that?

Well I think that we need to recognise the power, respect I think two big things that I have seen, heard about broken trust relationships that is were lost where people felt that they were not respected they lost their dignity they were humiliated and I think that to be trustworthy their needs to be a respect of the other person's opinion people need to be treated with dignity and I think that is really important we have not we have assumed that the good things we as the public health community have to offer are quote obvious, we've assumed allot, they are good on paper but we have to appreciate the context that these things are delivered in.

Talking about what community engagement can offer, I would like to ask a question around that when I was at these conferences you can almost see an emergence of a multi-lateral agreement within governmental bodies about the importance of epidemic preparedness and responses and the increasing number of participations and collaborations was seen as the focal point for that where do international vaccine programmes sit within those discussions can they relate to local governments and organisations

Well international vaccine programmes are only as good as the countries accept them they are not useful otherwise because at the end of the day its local government and national governments that regulate approve put it in to their system you can have a global programme but if you doesn't have its feet on the ground it's not going to move forward what the international vaccine programmes can do is give a motivation an incentive, if a national programme think it's a good idea but internally their having some problems getting people on board sometimes having a having a global programme helps pull it along helps give them gives them extra external support sometimes global programmes can be perceived in a negative way people feel like it's for the health world summit or the world health organisation not of us well in fact the world health assembly is made up of all of these countries so it's a kind of ironic perception

I would like to get a better understanding of how vaccine hesitancy is viewed amongst those who are governing international and national programme so in your opinion are those governing these programs sympathetic towards vaccine hesitancy and do you think that they understand the complexity

I think that there has been a dramatic change among governing international and national programmes about the issue of vaccine hesitancy ten years ago when I was in my previous role I was trying to bring a bit of attention to this emerging issue and it was really tough it was a sense that I was focusing on the negative and I should just be positive we got 80 plus percent average around the world the others will come along or we shouldn't get distracted by them well that scenario has changed dramatically and I have to say that in particular in the last 5 years their has been allot more acknowledgement of the issues allot more attention to them in 2013 the World Health Organisation in response to a number of countries asking for help around this issue said we need to do something about this and as part of SAGE the Strategic Advisory Group of Experts they convened a working group it was my self and about 9-10 others internationally who basically got some marching orders

from sage to do an assessment of what the state of things where and help characterize it and give some suggestions on what to do, because our group here had already been working on this issue we provided everything we had which helped gives us a bit of a base line and some others around the table and worked with that and brought their strengths and I think we came out with some good guidance and there is a different level of recognition we did a special issue on the journal vaccine with accumulative work in the mean while there are more and more country who them self's looking at this issue and many of them contact us for help with trying to assess the scoop and nature of their issue and think through what they can do about it so I think it was fraud who said you can't deal with a problem until you acknowledge it and I think we are at this stage of a good part of the world both in an international and local level has acknowledged that there is an issue here and the next thig is figuring out how we are going to best address it.

So I guess more steering groups that bring in expertise different voices in engagement is seen as important?

Well there is not allot of appetite at the local level I think that I respect experts and I think that it was really parctauilr this global working group at WHO it was a really fantastic diverse international group and I think that there was a reasonable amount of respect for that we should obviously continue to engage experts but we need to diversify who's involved I think what we need is to start to trying new ways of doing things. We have acknowledged the issue as a global community I think we still haven't taken the leap and recognise that we need a quantum change this is not just making the old ways a little bit different this is a new problem it has new issues and we really need to clean the black board, clean the slate and start over with thinking what are we going to do differently

I wanted to ask a question which you touched upon at the beginning and it's the role of social media. As we both know that vaccine hesitancy is not a new phenomenon particularly in low to middle income countries, but the role of social media in exacerbating fears and propagating views is. So how much of a role doe you think social media plays in vaccine hesitancy

I think that it plays a huge role, vaccine hesitancy is not new to vaccines its existed from the very first vaccines it's the scope and scale of it has evolved one we have allot more vaccines then we ever did so there is allot more vaccine that have issues. And I think that what social media has done has amplified theirs one of my bible here, a book called The Social Amplification of Risks theirs allot of risk scientists who basically started to characterise allot of these things actually not around vaccines it was around environment and nuclear issues and in an earlier era related to energy and building the confidence of communities but the principals are very relevant and the importance of mitigating whether then amplifying perceptions s of risks, social media makes this very challenging it makes it challenging just in terms of how quickly things can spread the World Economic Forum does an annual risk report and a few years ago they listed as one of the top three risks facing the world is what they call digital wildfires and we absolutely seen that with vaccine concerns and what's happening is a mix of that with things like google translate or other translating tools means that these issues don't stay local any more they jump from country to country they spread from group to group and it's a much more challenging environment for the public health community to catch up with

So, what can practitioners and researchers do to tackle issues of unverified material?

Well I think unverified material is a bit more straight forward then broken trust I think that one thing is trying to get ahead of the unverified material well unverified is one thing there is allot of unverified material and part of the challenge is science never likes to say that anything is a hundred percent right so it always has an element of un-verification If you read most reports like the major IMO Institute of Medicine Report in the USA on delinking autism and the MMR vaccine that and there has been other reports give a confidence but to best of our opinion type of thing which is classic in science never say never it could be something different which makes something like unverified material gives the public an advantage because there is always a loophole but in terms of tackling issues of misinformation of which there is an abundance of I think we have to get quicker on our feet about it and I think where our challenge is particularly with social media is what they call echo chambers the positive people talk to the positive people the negative to the negative and if we keep putting out the right information amongst the people who already know that we need to figure out ways to get over that boundary between it the trust issue is going to take different kinds of relationship building.

In your experience, how do approaches to engagement change based on stakeholder, i.e. approaches of engaging policy maker's vs approaches to engaging the community?

Well I think when it comes to engagement one of the things we always think about here is put yourself in the seat of the policy maker or in the role of the community member what is the language they use what is the context that they get their information what are the leathers that make their decision either as a community leader of a policy maker or a parent. And the language has to change the format of how you communicate has to change you need to look at peer to peer communication, who in that policy chamber or the local community are the ones that are probably going to be the best local advocates its really getting a lay of the land and the dynamics.

How important is the influence of social memory and vaccine hesitancy and what needs to be done to address this in terms of how researchers conduct it?

It's a huge issue and part of the challenge of social memory and experience is that some of this is very deep for instances we lead allot of community engagement and trust building around one of the big Ebola vaccine trials in Sierra Leone and Ghana and a few other places but Sierra Leone the countries that were effected by Ebola their historical and social memories of just how their were treated their relationship with government and distrust those underline relationships don't get better in times of crisis they get exacerbated and when you have broken historic trust that gets plays out in vaccines and we have seen that in a number of settings and it doesn't have to be a previous vaccine issue it's a about a breakdown in the social memory I wrote a paper on this with a colleague at the time of the H1N1 (Influenza A virus subtype) saying that this is an opportunity to build trust rather than have it be a memory of broken trust for instance in the UK, the MMR (Measles, Mumps, and Rubella) issue was on the heels of the publics bit of distrust around the information sharing around BSE and the Mad Cow issues, in France some of the Hepatitis B vaccines anxieties were on the heels of a tainted HIV blood scandal that their as information known but not shared in another case in Nigeria the polio vaccine boycott in the background there was a court case about a child who had died during a Meningitis drug trial and they felt that the information was not shared the death was not deemed related to the trial but they actually one the trial but they won because of not doing the due diligence with the ethics so you can have social memory and

experiences that are not vaccine specific but broke trust with the institutions so to an extent you can get a read some of the weak spots that need some TLC and some relationship building that's really important you can't go in with your usual campaign to rule something out thinking that everybody is going to get hands on deck start gently in the places that there are vulnerabilities and most of the time you can find that out.

Would you say that the case is different for countries that may have had experiences with the West say for example countries like Nigeria and countries like Ghana that may have had some experiences with colonialism and so on top of that that's even stronger hesitance and resistance towards vaccines or western international organisations that want to do vaccines would you say that it is different from other parts.

Well absolutely Polio we would have probably eradicated polio if there wasn't some of these historic social memories that are also current geopolitical issues the boycott in northern Nigeria particularly in Kano state I had talk to some of the local leaders and one of them said are you joking the USA has just gone into Iraq they what to kill all the Muslims why should we trust the Polio vaccines its obvious and then you had the issue of Pakistan where there was a CIA effort to find bin laden and they did a fake vaccination campaign and that's not helpful either and that has stuck in the memory they may not have been direct influence of peoples vaccines acceptance the next month but it sits that as a social memory that they do things like that they do things that we shouldn't trust and theirs issue I picked the USA because of those example but it can be any county or any colonial regime or any other civil war even in internal conflicts were you don't trust certain local leaders those things play out in health campaigns particularly vaccinations which is so closely tied to government and effects everybody I don't know I really can't think of any single health intervention which touches every singes person's life in the world and in some cases you can't go to school if you don't get it and the public is directed as to what to take and when to take it and it's a challenge when that relationship is not solid.

On that final point, I would like to honestly thank you Dr Larson in taking the time out to conduct this podcast and sharing your insights so again thank you