Good afternoon everyone. And thank you, Melissa, for such a wonderful introduction, so I'm just gonna start my presentation.

Bought cervical cancer in low resource settings, so cervical cancer is one of the most common cancers among women in the world. In 2002, about 500,000 women were diagnosed with cervical cancer, and 265,000 deaths due to cervical cancer in the world.

HPV human papilloma virus is a known cause of survival cervical cancer and is attributable to more than 90% of all cervical cancer cases.

And specifically, subtype 16 and 18 are responsible for 70% of the total cervical cancer.

A man cervical cancer is spreading table. There are 2 distinct strategies. The primary strategies to do vaccination against HBV and the secondary strategies to do cervical cancer screening and treatment.

So, which we've actually has been shown to be very effective in developed countries. This is data from Schottland. They started their PV immunization national program in 2008 and then they analyze the data. Among the bot chords from 1988 to 1992, who also attended the Scottish cervical cancer screening program.
And they found that there was almost 50% decline in cervical cancer incidence rates. Among those who were vaccinated, compared to those who weren’t vaccinators all both chords that they analyzed.

However, implementing vaccine in low resource Elting is very challenging. And because of two distinct regions versus the cost. For example, in the US, it cost about $360.00 to get 3 doses of vaccine.

Gabby Gabby’s is Global Alliance for vaccination and immunisation. They negotiated the price up to $15 about like 13 point, $4.00 per person, which is still high in terms of going nationwide in developing world. So the affordable prices really if it comes down to 1:00 to 2:00 dollars purposes.

And there is also use social stigma related to sexual transmitted infection. So it even if the cost comes down, it would still be challenging to reach to the adolescent boys and girls in this part of the world.

There are 3 like widely available cervical cancer screening strategies on the psychology evaluation visual test and HBV infection test.

Psychology has been shown to be very successful in their left country so it was started in 1950s and there has been shown all like Lars decline in cervical cancer incidence as well as mortality and all of these is attributable to the pap smear test.

Yeah, I can see that the Finland is the green board line and the blackboard is the US where you can see the? Who’s decline from 1957 to 1997 and it is majorly attributable to the pap smear test.
Lab infrastructure trained specialist quality control system of communication with the women and multiple visits. All of these are not possible in the largest or setting so it’s been.

NOTE Confidence: 0.918698251247406

Not very appropriate in that setting.

NOTE Confidence: 0.899433195590973

Then comes V, Ian HPV testing so this is one of the largest studies that was conducted in low resource setting from India. It’s a randomized cluster, randomized control trials with 130. One thousand women and they randomly assigned women into 4 groups. HPV testing cytologic testing VI. A visual inspection with acetic acid and Control Group. I’m just going to present the main results.

NOTE Confidence: 0.941756963729858

What they found after 8 years of follow-up was?

NOTE Confidence: 0.896887421607971

It’s BV testing was significant in reducing.

NOTE Confidence: 0.89761551948547

Cervical cancer in screening as cervical cancer like incidents advanced dates of cervical cancer incidence and mortality by almost 50%.

NOTE Confidence: 0.85518097875024

However, in that setting cytologic test and at an VI a test was not significantly affective.

NOTE Confidence: 0.932371735572815

Another study from South Africa, which is also considered one of the very prominent studies in this area is they randomly assigned women.

NOTE Confidence: 0.875227749347687

Do HPV treatin visual infection entry and control group, so everybody got SP with his thing, and VIA testing, but they are randomly assigned the treatment based off whether it was at speedy positive or VI positive.

NOTE Confidence: 0.879483044147491

So they published 2 papers one was at 6 months and then the publish the fellowship followup paper at 36 months. This is the results from 36 month follow up and they found that boat.
00:06:03.700 --> 00:06:15.230 Methods VA and HPV was effective in reducing the prevalence of CI and 2nd grade and see. I integrate the pre cancer.

00:06:15.730 --> 00:06:23.320 And HBV and treat strategy was, however more effective than VI enter. It is sad is in that setting.

00:06:23.990 --> 00:06:48.150 So it’s PVNV also have their own limitations like SBB is still very expensive and it’s not readily available in low resource settings and it has to do with specificity so there is overtreatment. Similarly, with VI that cure easy of the screening test really depends on who is testing are there the specificity is low.

00:06:48.790 --> 00:07:01.910 There is no permanent record to review and then cross validates the screening results. It also requires spaces equipments and supplies and pelvic examination, which existed mine are also setting.

00:07:02.480 --> 00:07:22.170 So it is difficult to say like which taste to use like how to save women from cervical cancer in low resource setting WH who came up with this algorithm so they gave the skyline to decide which taste test to use based on what resources at every level, so if.

00:07:22.770 --> 00:07:35.530 If there is enough resources and you can assure the quality assure quality control, then go for psychology an or HPV test with called post copy.

00:07:36.230 --> 00:07:45.510 If there is no guarantee of quality control, then go for SPV testing followed by VIA testing and cryotherapy.

00:07:46.230 --> 00:07:49.880 If there is no is resources just do HPV.

00:07:50.630 --> 00:08:15.020 Testing and even if there is an there is no resources for even adds PV testing then just do VIA testing so this is like a broad guideline provided by WHO an many loads of setting countries are following the skyline is nipple is also following this. Kayla nanad opting VI, Anne very alone and Cry Therapy to reach population are nationwide.
So, coming back to Nepal just to give you a little bit of background level is a tiny country in SE Asia. It’s between India and China compared to us. It is 67 times smaller it has 11 times fewer people are GDP is only 4.3% of the us. GDP an life expectancy is about 71 years, which is 9 years and less than the US population.

So. Sorry. This is this is intended I was, I wanted to show you a video before I move forward.

So somehow, the height didn’t work, so another came up excuse me.

So, in Nepal cervical cancer pro program in the powder is almost it is almost nonexistent. There is no any problem for HIV HPV email azatian.

There is national cervical cancer screening guidelines uh that was endorsed in 2010 that aims to target about 50% of women using VI in cryotherapy. But there is no any systematic organized screening program so the the only about 3% of women are E and that’s also opportunistic.

Uh you know screening and the population based cancer registry started only in 82,000 and 18. So there is no way to say like what even what is the real burden of cancer. But we from like others. Indirect sources we can say that it’s the burden is really high.

So we started this cancer screening program in rural iPod in through the government University School of Medical Sciences. They have cancer prevention program. And this too. I I’ll show you a video just so that you are. You get a context of where this information is coming from and how people are working there.

Nipple the land of Mount Everest with diverse intensity. Religion culture and tradition. Yet people living in peace and Harmony, a country of unity in diversity.
80% of the country’s population lives in the ruler areas and Tamales. One of them do. The place is just 75 kilometers far from the capital, Kathmandu. It is one of the remotest areas of the country. In this male dominated Patriarchal Society of 30,000,000 people, the lives of woman is not same all over the country.

Life is totally different in the way the city. Women are leaving and how the women of the newly areas are struggling for their everyday’s leaving here. The women are the one early to rise and lead to eat and sleep. There are the less privileged. People in every aspect of living. There are socio economically and culturally predisposed to various Women’s Health issues, including cervical cancer and its risks factors.

Ali marriage, giving birth to multiple children until they give birth to a son, Poly Gamy or hygiene. Cigarette smoking and sexually transmitted infections seems like all these ill health has been ignored by this woman herself. But the truth is totally different because they are completely unaware of these diseases and the risks factors that they are leaving with every day, the nearest Health Center.

Near of technical hospitals since I met him 12 years back. I saw him doing the same his stablish. The Buledi Outlet Center are subsidiary of clinical hospital, where round the clock services available and is offered through resident medical doctor, a paramedic and eggs ilary midwife. We did a small study among the women living in this village to find out how many of these women knew about cervical cancer.

How many are prone to develop it surprisingly the finding was there is lack of knowledge on their own reproductive organs an on cervical cancer. Among these women and none of them have ever heard of the term Baptist and most of them have never undergone gynecological checkup.
00:13:48.890 --> 00:14:04.410 Are you after that baseline assessment in collaboration with auntie and you? The cervical cancer prevention program? Was started in timil reason does enhancing the globalization program of NTNU.

NOTE Confidence: 0.88737386608124

00:14:05.070 --> 00:14:35.460 Management of cervical cancer screening program in each VDC begins with meeting with VDC healthforce in chars female coming to help volunteers teachers and had Masters to decide on how where and when to conduct the awareness and screening program in their community and accordingly. Verbal invitations are sent through them to rest of the women’s in the village translate item. They dancing and an email people remain.

NOTE Confidence: 0.745088696479797

00:14:35.870 --> 00:15:07.080 Are you looking to anything anything in training while any color but also in each VDC multiple educational program are held?

NOTE Confidence: 0.926105678081512

00:15:07.870 --> 00:15:18.190 The screening our screening sides are 3 to 4 hours drive from Dhulikhel hospital. Ann further have to work for half an hour to an hour.

NOTE Confidence: 0.834677398204803

00:15:21.860 --> 00:15:43.570 I was the screening sites chosen by the community can be sub. Health post school buildings or the corporative houses. Our first job is to set up a mobile clinic over there.

NOTE Confidence: 0.56607186794281

00:15:44.260 --> 00:15:45.650 Sorry.

NOTE Confidence: 0.733492136001587

00:15:55.260 --> 00:16:06.190 Talk about somebody so this afternoon.

NOTE Confidence: 0.547288537025452

00:16:06.860 --> 00:16:11.130 Be lucky block alone way bitch.

NOTE Confidence: 0.811151146888733

00:16:11.780 --> 00:16:41.700 For those who are hesitated to take part in examination. Our Father Council. Once again in a group on the same day, the samples are taken to Julie kill hospitals molecular and Microbiological Laboratory’s.

NOTE Confidence: 0.701845824718475

00:16:44.280 --> 00:17:15.490 Oh my God, I know they take my mathematical some Magnum convertibles on line a penny training that had any particle. Quick answer comparing am Lebanese singer Cortina millenia. Sorry Gardenia, Sarah Gardner actually done an esper. TSR Igor Nova October. These women they are not coming to the clinic and they don’t have access to the hospital.
00:17:22.670 --> 00:17:38.150 Sitting in the clinic and solving on one on one basis. It doesn’t work for Nippon. Once we finish the screening program in one V DC the same process begins for the next.

00:17:41.260 --> 00:17:50.370 So yeah, so this is how things work over there an 80% of people in Nepal, leaving these kinds of rural areas.

00:17:51.040 --> 00:18:14.540 So there is very limited access to health care and even to provide to even just to have a contact with health worker ease of big thing for for a woman who is living in the held like in these kinds of ruler areas and this is one of the accessible areas. So there are areas where you would have to walk like.

00:18:15.070 --> 00:18:27.290 For 5 days just to like reach to that area because there is no road and Nepalese 2, thought of Nepalese on Hills and mountains, so it is challenging.

00:18:29.330 --> 00:18:30.850 On.

00:18:35.980 --> 00:19:05.990 So we started with a feasibility to see whether or not. It is feasible to conduct a cervical cancer screening in there at community because if we call the women into the health Health Center, then it is very unlikely for them to come so on, and a lot of other health services in Nepal. Like immunization family planning a safe motherhood are also delivered at through the outreach clinics, something like this so we started with a small.

00:19:06.780 --> 00:19:25.270 Feasibility study with 122 women and then we provided them. Some Health, Education, about 1:00 and half hours of discussion on what is cervical cancer like? How and how to seek their cervical cancer screening services and how to?

00:19:25.980 --> 00:19:42.410 I can follow up with the test is positive and a mean uhm message versavel cancer is preventable and then we asked him to come for this cleaning after 15 days and then we ask them to give these messages to their peers as well.

NOTE Confidence: 0.856410682201386

NOTE Confidence: 0.913457274436951

NOTE Confidence: 0.909187853336334

NOTE Confidence: 0.893579304218292

NOTE Confidence: 0.893579304218292

NOTE Confidence: 0.887264549732208

NOTE Confidence: 0.887264549732208

NOTE Confidence: 0.911740601062775

NOTE Confidence: 0.911405265331268

NOTE Confidence: 0.916207373142242
So these are the characteristics of the women. Uh most of them were in their early reproductive age group majority were illiterate 62%. They have their own income. It is because we read them in their Micro Finance Group, which is the specific groups that are formed in the villages in Nepal.

And most of them have even more than 60% of them were married before the age of 17.

Or, who received the education and 222 were there appears the test positive were 13D were brought to the hospital for called Corpus Copy and we found one cancer was treated at the hospital cervical cancer before the health education class and none have hard about HPV or pap smear test.

So you also saw that in the video that we did education session with this women, an after this session. We are so before and after the session. We ask them whether or not. They are willing to undergo a test for cervical cancer prevention. If they are if it is offered free of cost before the education only 16%, said that they are willing after the education. All of them, said that they are willing to undergo the test so on the test they?

Kim all of them who received health education came in and then they brought their peers. So we were able to test 344 women, 122 were those who were who received the education and 222 were there appears the test positive were 13D were brought to the hospital for called Corpus Copy and we found one cancer was treated at the hospital.

Another study that we did was to look at the prevalence of HPV infection among rural women in a pool and then this was we also had the same approach versus we went to the villages and then conducted a small group meetings on SD eyes and cervical cancer and then then I ask them to come for screening the participation rate was 56%.

Uh the characteristics of the women were similar. They were mainly in the reproductive age group like early age group. Most of them were elite rate if 84% on more than 50% had the marriage before the age of 19 and they have with majority of them had 3 or more children and when is 4% were smokers?
The overall HPV prevalence was 14.4% in this population. The high risk was 7.9 and the Lord is like 6.5% and the 5 most common HPV types of SBVSPV, India. Paul was at our topmost was HPV 18 and then 5159. Thirty one in 16. An we tell we thought that it was important to profile. The I like profile the prevalence of HPV.

Cause it might help was to uh when it hard time comes to decide on. What kind of vaccine that we want to choose.

Then we also did a feasibility of a visual in inspection with asset IC acid. Same approach so the VIA was actually not done at the outreach clinic. But we trained the nurses at the outlet centers. So we invited 20 nurses from the centers that would already working in the health post. An health centers in the rural areas and the women went back and then they provided education to the the nurses went back and they provided education to the women in their villages.

And then they invite them for the VIA testing in a predetermined area. This is we I only have a preliminary findings to present here, but

And then you decide and that’s done and then we asked the all of the
positive women to come to the hospital for further checkup and not surprisingly, only 30% ended up in the hospital.

NOTE Confidence: 0.924206972122192

So our experience so far is that it’s very difficult first it is very difficult to do is that read the women 2nd? It’s even more difficult to bring it to the Health Center and thought like even much more difficult to provide them. The treatment to those who are who are most in need.

NOTE Confidence: 0.254702270030975

So.

NOTE Confidence: 0.916696488857269

Right now, the government of Nepal has just adopted an AA2 package of essential communicable diseases intervention for primary health care so the long-term plan of government of nipple is to provide cervical cancer screening to all over the napal through its network of health centers in all of the villages.

NOTE Confidence: 0.871308505535126

Hiver none none of the health centers are equipped and.

NOTE Confidence: 0.885670781135559

A lot of and health workers have not received training in VIA so we are partnering with an HTC DePaul. Health training center to provide VIA to the government health nurses. We finished 5 batches of 20 women, so far, but then also an it’s disease also partnering with other institutions all over the nipple to prevent that’s kind of that’s training to there.

NOTE Confidence: 0.864190578460693

So at the carpet University what we are doing we in near future is redoing our implementation trial. So to help government of Nepal to scale up this VI Cry Therapy single visit.

NOTE Confidence: 0.896977186203003

Approach and we’re implementing it in 22 villages training. The nurses and then seeing the measuring the acceptability adoption visibility Fidelity. Penetration cost under our cost for sustainability of the program and this is what is really lacking to the government of Nepal because there is a lot of plan there’s mass there is a strategy plan. There is guideline and now the endorse this package is and there is a list of all the equipment.
On paper looks so good but the implementation is like really poor so we want to help them get the appropriate information to scale up this program and next thing that we really interested is introduced care. HPV do that a program. However, it’s been the care. HPV also looks very good on paper, the cost with low cost point of care.

Uh SBB tasting but the country. Wise prices still high because it has not been negotiated in group, so the price quote that we got from carrots. BBS $25 per person, which is really, really high in our setting so we have not been able to even pilot test it. But we were devastating applies to a pilot IST and this the in in the area where we work.