WEBVTT

1 00:00:01.740 --> 00:00:03.480 <v ->Well, good afternoon everyone.</v>

2 00:00:03.480 --> 00:00:05.850 I want to talk today a little bit about my interest,

3 00:00:05.850 --> 00:00:10.650 and it looks like I need to pick up a different clicker,

4 00:00:10.650 --> 00:00:12.210 which is tuberculosis.

5 00:00:12.210 --> 00:00:13.800 So tuberculosis is the leading

6 00:00:13.800 --> 00:00:16.020 infectious cause of death worldwide.

7 00:00:16.020 --> 00:00:17.100 And we believe that last year

8 00:00:17.100 --> 00:00:20.010 it affected around 10.6 million people.

9 00:00:20.010 --> 00:00:23.220 The World WHO TB report comes out every year

10 00:00:23.220 --> 00:00:24.240 around this time,

11 00:00:24.240 --> 00:00:27.300 so the latest data that that we have is from 2021.

12 00:00:27.300 --> 00:00:28.320 And following the pandemic,

13 00:00:28.320 --> 00:00:30.420 there was a big decline in the number of people

14 00:00:30.420 --> 00:00:34.530 having access to quality assured diagnosis

15 00:00:34.530 --> 00:00:36.630 and initiation of treatment.

16 00:00:36.630 --> 00:00:37.740 But it's long been the case

17 00:00:37.740 --> 00:00:40.770 that a large proportion of people living with TB

18 00:00:40.770 --> 00:00:41.640 go undiagnosed.

19 00:00:41.640 --> 00:00:43.080 We think more than 4 million people.

20 00:00:43.080 --> 00:00:44.550 So one of the things that we're interested in

21 00:00:44.550 --> 00:00:46.680 is how can we identify those people?

22 00:00:46.680 --> 00:00:48.990 There's many reasons why they aren't diagnosed.

23 00:00:48.990 --> 00:00:52.470 One challenge of course, is that TB is often asymptomatic.

24 00:00:52.470 --> 00:00:54.900 So we need to identify better ways of screening

25 00:00:54.900 --> 00:00:56.250 and identifying people in the community

26 00:00:56.250 --> 00:00:57.720 who don't know they have symptoms.

27 00:00:57.720 --> 00:00:58.950 And then we need to improve access

28 00:00:58.950 --> 00:01:00.300 for people who do have his symptoms

29 00:01:00.300 --> 00:01:02.760 and encourage them to seek care

30 00:01:02.760 --> 00:01:05.640 in clinics where they can get diagnoses.

31 00:01:05.640 --> 00:01:08.040 The tool that we use in our laboratory for doing this work

32 00:01:08.040 --> 00:01:09.510 is called implementation science.

33 00:01:09.510 --> 00:01:11.130 I know there are probably a number of people in this room

34 00:01:11.130 --> 00:01:13.710 that have heard of this field,

35 00:01:13.710 --> 00:01:15.570 and there's a course that I teach in the fall,

36 00:01:15.570 --> 00:01:17.070 for those who are thinking about

37 00:01:17.070 --> 00:01:19.260 their courses for next fall,

38 00:01:19.260 --> 00:01:22.110 which goes over what implementation science is.

39 00:01:22.110 --> 00:01:25.530 But in short it is a systematic approach

40 00:01:25.530 --> 00:01:28.230 for the design, delivery and evaluation of strategies

41 00:01:28.230 --> 00:01:30.840 to improve the uptake of proven interventions

42 00:01:30.840 --> 00:01:31.920 into routine practice.

43 00:01:31.920 --> 00:01:34.620 And we think of it as a translational research discipline.

44 00:01:34.620 --> 00:01:36.030 Translational research

45 00:01:36.030 --> 00:01:38.130 involving multidisciplinary collaborations

46 00:01:38.130 --> 00:01:41.550 that move ideas from their foundational basis,

47 00:01:41.550 --> 00:01:42.840 whether that's in the laboratory,

48 00:01:42.840 --> 00:01:43.860 in fundamental biology

49 00:01:43.860 --> 00:01:47.100 as we were hearing about a little bit earlier from Brian.

50 00:01:47.100 --> 00:01:49.020 Or more on the other end of the spectrum

51 00:01:49.020 --> 00:01:50.100 here where our group works,

52 00:01:50.100 --> 00:01:51.270 which is thinking about how do we move

53 00:01:51.270 --> 00:01:52.920 from patients to practice

54 00:01:52.920 --> 00:01:54.600 and ultimately to public health.

55 00:01:54.600 --> 00:01:57.720 And it turns out that that discipline doesn't happen

56 00:01:57.720 --> 00:02:00.390 just when good ideas get published in journals

57 00:02:00.390 --> 00:02:01.410 showing that they're effective.

58 00:02:01.410 --> 00:02:03.300 It's really necessary to think about

59 00:02:03.300 --> 00:02:06.660 how would those ideas be adapted to a real world setting.

60 00:02:06.660 --> 00:02:08.880 So in the contexts of TB, I wanna talk about

61 00:02:08.880 --> 00:02:11.400 three different types of studies that we've done.

62 00:02:11.400 --> 00:02:13.080 Formative work to help us understand

63 00:02:13.080 --> 00:02:14.400 what the nature of the barriers are

64 00:02:14.400 --> 00:02:17.670 to delivering these evidence-based services for TB.

65 00:02:17.670 --> 00:02:19.440 Actual implementation studies

66 00:02:19.440 --> 00:02:21.750 where we introduce these ideas.

67 00:02:21.750 --> 00:02:22.920 And then evaluation studies

68 00:02:22.920 --> 00:02:24.780 where we try to figure out what works

69 00:02:24.780 --> 00:02:27.120 and why or why it doesn't work.

70 00:02:27.120 --> 00:02:28.740 And a lot of the work that I've done

71 00:02:28.740 --> 00:02:30.600 is in the area of contact investigation.

72 00:02:30.600 --> 00:02:31.770 So contact investigation,

73 00:02:31.770 --> 00:02:34.080 I think as everybody in the room is probably familiar,

74 00:02:34.080 --> 00:02:36.870 is a strategy where we look for high risk populations

75 00:02:36.870 --> 00:02:39.090 of having a disease like tuberculosis,

76 00:02:39.090 --> 00:02:40.800 among those that are close contacts

77 00:02:40.800 --> 00:02:42.420 to people with tuberculosis,

78 00:02:42.420 --> 00:02:44.490 knowing that to tuberculosis is transmitted

79 00:02:44.490 --> 00:02:48.720 from person to person through respiratory aerosols.

80 00:02:48.720 --> 00:02:50.280 And that work that we've done in the area

81 00:02:50.280 --> 00:02:51.690 of contact investigation

82 00:02:51.690 --> 00:02:53.280 has spanned different parts of the globe,

83 00:02:53.280 --> 00:02:55.260 because we know in different contexts

84 00:02:55.260 --> 00:02:56.640 there may be different reasons.

85 00:02:56.640 --> 00:02:57.840 We're interested in understanding

86 00:02:57.840 --> 00:02:59.280 both the generalizable reasons,

87 00:02:59.280 --> 00:03:01.872 why it's hard to do contact investigation,

88 00:03:01.872 --> 00:03:04.530 and also some of the setting specific regions.

89 00:03:04.530 --> 00:03:06.270 So for example here on the far left,

90 00:03:06.270 --> 00:03:08.970 in Columbia one of our scholars, Gustavo Diaz,

91 00:03:08.970 --> 00:03:11.730 who was a postdoctoral fellow at the GHS program,

92 00:03:11.730 --> 00:03:15.120 used routine public health data to map the barriers

93 00:03:15.120 --> 00:03:17.040 and characterize those.

94 00:03:17.040 --> 00:03:19.890 Here below, this is a qualitative research study

95 00:03:19.890 --> 00:03:21.900 that was looking at another aspect of TB care

96 00:03:21.900 --> 00:03:23.310 which is education and counseling,

97 00:03:23.310 --> 00:03:24.630 which is very important

98 00:03:24.630 --> 00:03:26.850 to get people newly diagnosed with TB

99 00:03:26.850 --> 00:03:29.550 to be willing to share the contact information

100 00:03:29.550 --> 00:03:30.480 of their close contacts,

101 00:03:30.480 --> 00:03:32.430 and also for them to be able to achieve

102 00:03:32.430 --> 00:03:34.020 good treatment outcomes on their own

103 00:03:34.020 --> 00:03:36.480 and get initiated in other therapies

104 00:03:36.480 --> 00:03:38.700 that may be important like HIV treatment.

105 00:03:38.700 --> 00:03:40.020 And so this is work that was carried out

106 00:03:40.020 --> 00:03:41.250 with Alisse Hannaford,

107 00:03:41.250 --> 00:03:43.050 who was a medical student at the time.

108 00:03:43.050 --> 00:03:45.870 Then the third example was looking at these similar methods,

109 00:03:45.870 --> 00:03:48.390 not just for TB case finding

110 00:03:48.390 --> 00:03:49.770 in the community that it's searching,

111 00:03:49.770 --> 00:03:53.130 but also for treatment of TB and for prevention

112 00:03:53.130 --> 00:03:56.040 as work that was done by Christina Parisi,

113 00:03:56.040 --> 00:03:57.600 who was an EMD student a few years back

114 00:03:57.600 --> 00:04:00.363 and is now a PhD student at the University of Florida.

115 00:04:01.380 --> 00:04:03.450 We're also interested in taking this information

116 00:04:03.450 --> 00:04:06.090 about barriers to delivery of care and try to combine it.

117 00:04:06.090 --> 00:04:07.500 So taking qualitative information,

118 00:04:07.500 --> 00:04:09.240 taking quantitative information,

119 00:04:09.240 --> 00:04:11.970 and developing strategies to try to change that.

120 00:04:11.970 --> 00:04:14.640 One of the strategies that we're very excited about

121 00:04:14.640 --> 00:04:18.030 is the use of collaborative design approaches,

122 00:04:18.030 --> 00:04:20.580 specifically human-centered design,

123 00:04:20.580 --> 00:04:22.080 where we try to come up with solutions

124 00:04:22.080 --> 00:04:24.030 that work for the communities that we're working with.

125 00:04:24.030 --> 00:04:26.940 And so here's an example in the middle of (indistinct)

126 00:04:26.940 --> 00:04:30.120 who's a laboratory manager in one of our projects in Uganda.

127 00:04:30.120 --> 00:04:32.430 We're using the human-centered design approach

128 00:04:32.430 --> 00:04:35.700 with the post-it notes to try to come up with good ideas.

129 00:04:35.700 --> 00:04:37.350 And than we've developed those

130 00:04:37.350 --> 00:04:39.090 into a couple of different types of strategies.

131 00:04:39.090 --> 00:04:41.940 So these are described in publications by Amanda Gupta,

132 00:04:41.940 --> 00:04:45.120 who's a research coordinator in our laboratory

133 00:04:45.120 --> 00:04:46.496 and a PhD student.

134 00:04:46.496 --> 00:04:48.930 And also by Joseph Tita,

135 00:04:48.930 --> 00:04:51.840 who's one of our qualitative scientists in Uganda.

136 00:04:51.840 --> 00:04:53.100 We're also a lot of times interested,

137 00:04:53.100 --> 00:04:54.240 even at the design phase,

138 00:04:54.240 --> 00:04:56.130 in thinking about what the costs are.

139 00:04:56.130 --> 00:04:58.110 A lot of times we wait until the end of a study

140 00:04:58.110 --> 00:04:59.250 to evaluate that.

141 00:04:59.250 --> 00:05:00.480 But in this particular project,

142 00:05:00.480 --> 00:05:02.400 we knew we learned from our prior work

143 00:05:02.400 --> 00:05:06.030 that it's very expensive to kind of develop strategy.

144 00:05:06.030 --> 00:05:07.560 So we looked at the cost strategy,

145 00:05:07.560 --> 00:05:11.340 and this was work led by Patricia Turimumahoro,

146 00:05:11.340 --> 00:05:14.400 who is currently a GHES scholar.

147 00:05:14.400 --> 00:05:16.380 So I'll just close by kind of describing

148 00:05:16.380 --> 00:05:18.060 the most exciting aspect of this work

149 00:05:18.060 --> 00:05:20.250 was actually evaluating where these strategies work.

150 00:05:20.250 --> 00:05:23.160 And we just recently completed a pragmatic trial

151 00:05:23.160 --> 00:05:25.230 using a stepped-wedge cluster-randomized design

152 00:05:25.230 --> 00:05:27.540 where we took a human-centered design approach

153 00:05:27.540 --> 00:05:29.400 that include multiple components.

154 00:05:29.400 --> 00:05:30.990 And these components include things

155 00:05:30.990 --> 00:05:34.590 that ease the multi-step process of contact investigation

156 00:05:34.590 --> 00:05:38.100 to kind of help participants, namely household contacts,

157 00:05:38.100 --> 00:05:40.140 better be able to engage in these services.

158 00:05:40.140 --> 00:05:43.740 Things like a motorcycle rider, to take them to the clinic.

159 00:05:43.740 --> 00:05:47.460 Educational strategies and also instructional information

160 00:05:47.460 --> 00:05:49.350 to help them produce sputum.

161 00:05:49.350 --> 00:05:51.780 And combining that with strategies of quality improvement

162 00:05:51.780 --> 00:05:54.300 to help community health workers better deliver that.

163 00:05:54.300 --> 00:05:57.030 And we are are just now looking at that preliminary data.

164 00:05:57.030 --> 00:05:58.620 It looks very promising

165 00:05:58.620 --> 00:06:00.720 that these strategies can be in fact impactful.

166 00:06:00.720 --> 00:06:02.340 And we're now testing those

167 00:06:02.340 --> 00:06:04.860 to other aspects like TB prevention.

168 00:06:04.860 --> 00:06:07.770 So with that, I'll close and see if there's any questions,

169 00:06:07.770 --> 00:06:09.030 or I can take them at the end.

170 00:06:09.030 --> 00:06:10.140 Thank you.

171 00:06:10.140 --> 00:06:11.259 (audience applauding)