WEBVTT

1 00:00:03.240 --> 00:00:04.290 <v Maur>Okay, great.</v>

2 00:00:05.346 --> 00:00:07.637 So good morning and good evening to our friends

3 00:00:07.637 --> 00:00:08.470 joining from China.

4 00:00:08.470 --> 00:00:10.413 Welcome all, my name is Maur Desai.

5 00:00:11.310 --> 00:00:13.888 I'm a faculty member in the Department

6 00:00:13.888 --> 00:00:15.450 of Chronic Disease Epidemiology at the Yale School

7 00:00:15.450 --> 00:00:18.060 of Public Health and also the school's Associate Dean

8 00:00:18.060 --> 00:00:20.250 for Diversity, Equity and Inclusion.

9 00:00:20.250 --> 00:00:22.650 It is my pleasure to step in for Donna Spigelman

10 00:00:22.650 --> 00:00:26.223 to introduce our speaker, professor Dong Roman Xu.

11 00:00:27.488 --> 00:00:29.993 But first I'd like to acknowledge that this seminar

12 00:00:29.993 --> 00:00:32.333 is co-sponsored by the Yale Center for Methods

13 00:00:32.333 --> 00:00:34.521 and Implementation and Prevention Science,

14 00:00:34.521 --> 00:00:37.350 also known as CMIPS, which Professor Spigelman directs.

15 00:00:37.350 --> 00:00:39.540 The seminar is co-sponsored by the Department

16 00:00:39.540 --> 00:00:42.090 of Chronic Disease Epidemiology and the global health

17 00:00:42.090 --> 00:00:46.080 concentration at YSPH, as well as the newly funded

18 00:00:46.080 --> 00:00:51.080 NIHT 32 training grant Implementation Science Research

19 00:00:51.120 --> 00:00:52.740 and Methods.

20 00:00:52.740 --> 00:00:55.710 Based at the Yale School of Public Health, CMIPS develops

21 00:00:55.710 --> 00:00:58.950 and disseminates innovative methodological approaches

22 00:00:58.950 --> 00:01:01.740 to address implementation gaps and improve public health

23 00:01:01.740 --> 00:01:04.650 worldwide strategically selecting the issues

24 00:01:04.650 --> 00:01:07.890 that carry the greatest burden and hold the greatest promise

25 00:01:07.890 --> 00:01:10.350 for amelioration right now.

26 00:01:10.350 --> 00:01:13.980 If you would like to be informed about future CMIP seminars,

27 00:01:13.980 --> 00:01:16.710 please let William Tutel know in the chat and he will add

28 00:01:16.710 --> 00:01:18.633 you to the CMIPS listserv.

29 00:01:20.010 --> 00:01:23.350 Professor Roman Xu is one of the foremost implementation

30 00:01:24.779 --> 00:01:26.340 science researchers and methodologists in China.

31 00:01:26.340 --> 00:01:28.890 His research focuses on health system innovations

32 00:01:28.890 --> 00:01:31.710 and implementation science, particularly those

33 00:01:31.710 --> 00:01:35.410 involving chronic diseases quality of primary health care

34 00:01:35.410 --> 00:01:38.490 and eHealth in the context of global health.

35 00:01:38.490 --> 00:01:41.790 He's leading several large studies including primary

36 00:01:41.790 --> 00:01:45.840 healthcare quality cohort in China, the Silk Road Labs

37 00:01:45.840 --> 00:01:49.890 for health system strengthening in Nepal and Mozambique,

38 00:01:49.890 --> 00:01:54.300 an implementation trial for stroke guidelines in China

39 00:01:54.300 --> 00:01:57.450 and the shared medical appointment trial for diabetes

40 00:01:57.450 --> 00:01:59.160 or smart trial.

41 00:01:59.160 --> 00:02:01.380 Professor Xu received his PhD in global health

42 00:02:01.380 --> 00:02:03.960 implementation Science from the University of Washington

43 00:02:03.960 --> 00:02:08.960 and his master's in Public Policy from Harvard University.

44 00:02:09.150 --> 00:02:12.150 The title of his talk today is Use PEDALs Model to PEDAL

45 00:02:12.150 --> 00:02:14.790 for Implementation Research.

46 00:02:14.790 --> 00:02:15.903 Roman, over to you.

47 00:02:17.712 --> 00:02:18.545 <v Roman>Thank you Maur.</v>

48 00:02:18.545 --> 00:02:21.330 Thank you very much for the very nice introduction,

49 00:02:21.330 --> 00:02:24.633 let me share my screen first.

50 00:02:32.461 --> 00:02:34.593 Okay, I suppose you can now see my screen.

51 00:02:35.490 --> 00:02:38.020 Today I'm going to talk about the PEDALs model

52 00:02:38.910 --> 00:02:42.120 and in that process I will use one of our ongoing,

53 00:02:42.120 --> 00:02:44.151 <v Maur>Oh, sorry, Roman.</v>

54 00:02:44.151 --> 00:02:46.133 Roman, do you want to put it in presentation mode?

55 00:02:46.980 --> 00:02:49.080 <v Roman>It is not in presentation mode now?</v>

56 00:02:49.080 --> 00:02:53.163 On my screen it is in the presentation mode,

57 00:02:54.480 --> 00:02:56.339 it's a little strange.

58 00:02:56.339 --> 00:02:57.360 <v Maur>Ahh.</v>

59 00:02:57.360 --> 00:02:58.350 <v Roman>Let me share again.</v>

60 00:02:58.350 --> 00:03:00.450 <v Maur>Okay and while you're doing that,</v>

61 00:03:00.450 --> 00:03:03.240 I'll just say very quickly, if you have questions,

62 00:03:03.240 --> 00:03:05.460 please hold them to the end, but you're welcome to put them

63 00:03:05.460 --> 00:03:08.512 in the chat and then when we get to the Q&A,

64 00:03:08.512 --> 00:03:12.570 you can use the raise hand feature, just unmute yourself,

65 00:03:12.570 --> 00:03:14.970 jump right in and we'll make sure that we get to

66 00:03:15.849 --> 00:03:16.733 as many questions as possible.

67 00:03:22.410 --> 00:03:23.510 <v Roman>Can see now.</v>

68 00:03:26.520 --> 00:03:28.380 <v Maur>I don't know about others, but I'm still seeing it</v>

69 00:03:28.380 --> 00:03:31.630 in sort of the regular mode, not the presentation mode.

70 00:03:31.630 --> 00:03:35.070 <v Roman>Okay, just one second, sorry for that,</v>

71 00:03:35.070 --> 00:03:40.070 it's a little I tried but just one second.

72 00:03:52.860 --> 00:03:54.603 Sorry for that everybody.

73 00:03:56.744 --> 00:03:57.577 <v Maur>No problem.</v>

74 00:03:59.370 --> 00:04:02.046 <v Roman>Let me share my screen to see whether</v>

75 00:04:02.046 --> 00:04:02.879 this will be better.

76 00:04:12.660 --> 00:04:14.580 Now, can you see my screen now?

77 00:04:14.580 --> 00:04:16.880 <v Maur>Yes and you may want to, we're seeing</v>

78 00:04:17.730 --> 00:04:20.460 also the preview slide, so if you swap display

79 00:04:20.460 --> 00:04:23.103 maybe that would help, that would help at the top.

80 00:04:25.680 --> 00:04:27.030 <v Roman>Does it work now?</v>

81 00:04:31.887 --> 00:04:34.252 <v Maur>And we can start, if it's gonna be a,</v>

82 00:04:34.252 --> 00:04:36.468 you don't wanna create too much delay,

83 00:04:36.468 --> 00:04:38.010 but if at the top, I think it's the second tab,

84 00:04:38.010 --> 00:04:41.010 if you say switch display, we should be able

85 00:04:41.010 --> 00:04:44.190 to then see it in full mode.

86 00:04:44.190 --> 00:04:49.127 So it was fine, but we were just seeing

87 00:04:49.127 --> 00:04:50.333 your previous slide as well.

88 00:05:19.740 --> 00:05:22.563 There we go, perfect.

89 00:05:32.930 --> 00:05:34.582 <v Donna>Oh, Dr Xu, you on mute?</v>

90 00:05:34.582 --> 00:05:39.582 <v Maur>Oh, you're on mute.</v>

91 00:05:43.027 --> 00:05:44.280 <v Roman>Okay, now it's good.</v>

92 00:05:44.280 --> 00:05:45.835 <v Maur>Perfect.</v>

93 00:05:45.835 --> 00:05:49.440 <v Roman>Ah, technology, I am supposed to know this well.</v>

94 00:05:49.440 --> 00:05:52.530 So today I'm going to talk about the PEDALs model,

95 00:05:52.530 --> 00:05:55.920 which is a model we have developed essentially at the

96 00:05:55.920 --> 00:05:59.490 beginning for our students so they can understand quickly

97 00:05:59.490 --> 00:06:02.490 with a nice acronym about the general procedures

98 00:06:02.490 --> 00:06:05.768 of conducting implementation research.

99 00:06:05.768 --> 00:06:10.320 And we'll use one of our ongoing trial for shared

100 00:06:10.320 --> 00:06:13.350 medical appointment for the management of diabetes

101 00:06:13.350 --> 00:06:14.880 as an illustration.

102 00:06:14.880 --> 00:06:18.240 And in that process I will talk about some

103 00:06:18.240 --> 00:06:21.420 of the common designs for implementation research

104 00:06:21.420 --> 00:06:25.700 and the choices and the rationale we choose some

105 00:06:25.700 --> 00:06:30.510 of the designs versus others in this presentation.

106 00:06:30.510 --> 00:06:33.600 But before that, let me spend a few minutes on some

107 00:06:33.600 --> 00:06:34.893 of the advertisement.

108 00:06:36.393 --> 00:06:39.450 I'm currently the principal investigator for a lab

109 00:06:39.450 --> 00:06:44.450 we call Acacia lab, which is sort of the child of

110 00:06:45.020 --> 00:06:48.660 a parent study called Acacia Study.

111 00:06:48.660 --> 00:06:52.140 In that study we have set up a consortium

112 00:06:52.140 --> 00:06:55.770 of researchers from 10 universities in China.

113 00:06:55.770 --> 00:06:59.400 And gradually because of using that study

114 00:06:59.400 --> 00:07:02.310 we have formed strong collaborative team in China

115 00:07:02.310 --> 00:07:05.370 for primary healthcare and implementation science.

116 00:07:05.370 --> 00:07:08.190 So looking to the future, we really want to use

117 00:07:08.190 --> 00:07:11.760 this platform to collaborate more with all of you.

118 00:07:11.760 --> 00:07:15.540 I'm also leading the Southern Medical University Institute

119 00:07:15.540 --> 00:07:18.420 for Global Health site.

120 00:07:18.420 --> 00:07:21.600 Southern Medical University is one of the first

121 00:07:21.600 --> 00:07:26.040 and largest medical center receiving international patients,

122 00:07:26.040 --> 00:07:29.490 especially from the low and middle income countries.

123 00:07:29.490 --> 00:07:33.000 And in terms of research, our institute holds largest

124 00:07:33.000 --> 00:07:35.520 total competitive grant size in China.

125 00:07:35.520 --> 00:07:38.430 And in terms of education, we are one of the four

126 00:07:38.430 --> 00:07:42.660 and one of the earliest program for international MPH,

127 00:07:42.660 --> 00:07:47.143 every year we gave 25 scholarship to people from low

128 00:07:47.143 --> 00:07:51.183 and middle income countries to study MPH in China.

129 00:07:52.080 --> 00:07:55.710 I'm also the co-editor in chief along with the professor

130 00:07:55.710 --> 00:08:00.060 Ann Sales for a new journal called implementation science

131 00:08:00.060 --> 00:08:03.990 communications, which is a facial companion journal

132 00:08:03.990 --> 00:08:05.553 to implementation science.

133 00:08:06.634 --> 00:08:11.074 We are a brand new journal two years, but so far

134 00:08:11.074 --> 00:08:15.763 we have received last year we have received almost

135 00:08:15.763 --> 00:08:19.950 a 400 submission, which is quite good for new journal

136 00:08:19.950 --> 00:08:24.900 and the downloads are also increased dramatically from

137 00:08:24.900 --> 00:08:26.493 two years ago to last year.

138 00:08:27.436 --> 00:08:30.790 So yeah, welcome to submit your work to our journal

139 00:08:31.795 --> 00:08:33.631 and thank you so much.

140 00:08:33.631 --> 00:08:36.840 So now before I talk about the PEDALs model, I'd like

141 00:08:36.840 --> 00:08:40.860 to go over a few key concepts in implementation science.

142 00:08:40.860 --> 00:08:44.043 That is very much related to my model as well.

143 00:08:45.360 --> 00:08:47.163 So what is implementation science?

144 00:08:48.510 --> 00:08:53.510 This is a the question that I normally get in China

145 00:08:53.550 --> 00:08:57.720 and sometimes I find it's not so easy as it appears

146 00:08:57.720 --> 00:08:59.790 to discuss.

147 00:08:59.790 --> 00:09:04.290 According to a review in last HIV journal,

148 00:09:04.290 --> 00:09:08.700 they have identified 73 unique definitions

149 00:09:08.700 --> 00:09:10.773 for implementation science.

150 00:09:11.700 --> 00:09:16.050 So this definition I like it quite a bit

151 00:09:16.050 --> 00:09:19.890 but I still feel it is a little long, I prefer a much

152 00:09:19.890 --> 00:09:23.820 shorter definition modified on the definition given

153 00:09:23.820 --> 00:09:25.710 by the authors of this review.

154 00:09:25.710 --> 00:09:29.040 In my view, implementation science is a multidisciplinary

155 00:09:29.040 --> 00:09:32.490 specialty to seek generalized ology.

156 00:09:32.490 --> 00:09:34.830 So implementation science, one of the questions

157 00:09:34.830 --> 00:09:37.770 I got in China is it a field?

158 00:09:37.770 --> 00:09:39.450 Is it a discipline?

159 00:09:39.450 --> 00:09:41.220 Is it just a method?

160 00:09:41.220 --> 00:09:45.150 I would say it's a multidisciplinary specialty

161 00:09:45.150 --> 00:09:48.750 to seek generalizable knowledge, because it is a science

162 00:09:48.750 --> 00:09:51.660 so it has to generate generalizable knowledge,

163 00:09:51.660 --> 00:09:56.190 it is about the scale of reasons for the strategies

164 00:09:56.190 --> 00:09:58.770 to close the evidence to practice gap.

165 00:09:58.770 --> 00:10:02.910 So what implementation science is about is really to

166 00:10:02.910 --> 00:10:07.560 put evidence-based practice into routine practice

167 00:10:07.560 --> 00:10:12.073 and our research is trying to understand how large

168 00:10:12.073 --> 00:10:14.307 that gap is and what are the determinants barriers

169 00:10:14.307 --> 00:10:17.830 and the facilitators for implementing that evidence-based

170 00:10:18.792 --> 00:10:21.462 practice and making it to a routine practice

171 00:10:21.462 --> 00:10:24.060 and what are the implementation strategies which are also

172 00:10:24.060 --> 00:10:26.640 intervention but we distinguish that from

173 00:10:26.640 --> 00:10:28.620 the health intervention, so we call it

174 00:10:28.620 --> 00:10:30.240 implementation strategies.

175 00:10:30.240 --> 00:10:33.090 What are the implementation strategies which can help

176 00:10:33.090 --> 00:10:34.380 close this gap?

177 00:10:34.380 --> 00:10:37.050 So that is about implementation science,

178 00:10:37.050 --> 00:10:39.510 so some of the other key concepts.

179 00:10:39.510 --> 00:10:41.580 In order to do implementation research,

180 00:10:41.580 --> 00:10:44.910 we have to start with health interventions

181 00:10:44.910 --> 00:10:47.050 and those healthy, not all of the health

182 00:10:47.926 --> 00:10:48.990 interventions can go into the process

183 00:10:48.990 --> 00:10:50.820 of implementation research.

184 00:10:50.820 --> 00:10:55.820 We have to first have evidence this health intervention

185 00:10:56.580 --> 00:11:00.450 can be regarded as evidence-based practice EBP.

186 00:11:00.450 --> 00:11:03.420 Once we have that, we need to understand the determinants

187 00:11:03.420 --> 00:11:06.480 of implementation, then based on that we will develop

188 00:11:06.480 --> 00:11:08.490 implementation strategies.

189 00:11:08.490 --> 00:11:11.670 We which we will tackle the barriers and the facilitators

190 00:11:11.670 --> 00:11:15.540 for implementing the EBP, some of them may come

191 00:11:15.540 --> 00:11:17.820 in from the health intervention itself,

192 00:11:17.820 --> 00:11:19.800 some are contextual factors.

193 00:11:19.800 --> 00:11:22.110 Then we need to understand the implementation

194 00:11:22.110 --> 00:11:24.810 outcomes which are different from the health outcomes

195 00:11:24.810 --> 00:11:27.960 and the clinical outcomes, then after that

196 00:11:27.960 --> 00:11:30.870 we make it into routine practice.

197 00:11:30.870 --> 00:11:35.870 Now let's talk the PEDALs models we have developed.

198 00:11:36.150 --> 00:11:39.360 First of all why we developed this model.

199 00:11:39.360 --> 00:11:42.360 Implementation science has already been inundated

200 00:11:42.360 --> 00:11:45.026 by the theories, models and the framework.

201 00:11:45.026 --> 00:11:50.026 A 2012 review identified more than 100 frameworks

202 00:11:50.250 --> 00:11:53.610 and it has ever since been increasing, why we are

203 00:11:53.610 --> 00:11:55.356 getting another framework.

204 00:11:55.356 --> 00:11:59.100 The motivation is from our students because when we are

205 00:11:59.100 --> 00:12:01.500 teaching implementation science to a master

206 00:12:01.500 --> 00:12:05.010 and an undergraduate students, very often we are challenged

207 00:12:05.010 --> 00:12:07.770 to give them a quick way to understand the essence

208 00:12:07.770 --> 00:12:10.620 of conducting implementation research.

209 00:12:10.620 --> 00:12:12.940 PEDALs has been developed as a teaching tool

210 00:12:14.102 --> 00:12:16.530 to wrap essential steps of conducting implementation

211 00:12:16.530 --> 00:12:19.470 research in an easy to remember acronym

212 00:12:19.470 --> 00:12:22.980 and also this acronym supposedly need to have an appropriate

213 00:12:22.980 --> 00:12:26.400 metaphor which can encompass

214 00:12:26.400 --> 00:12:28.653 the implementation science essence.

215 00:12:29.684 --> 00:12:34.020 This model has not yet been used, has not yet been published

216 00:12:34.020 --> 00:12:36.170 or peer reviewed, but we have been using it

217 00:12:37.075 --> 00:12:39.180 for our teaching already, so what is the PEDALs?

218 00:12:39.180 --> 00:12:42.120 PEDALs has some of the letters and but first off

219 00:12:42.120 --> 00:12:45.510 for the PEDALs it's when your PEDAL, your bike,

220 00:12:45.510 --> 00:12:48.720 which has a image of a cycling forward with PEDALs

221 00:12:48.720 --> 00:12:51.280 which has a metaphor of moving forward with the

222 00:12:52.816 --> 00:12:55.726 short cycles, which indicates implementation science

223 00:12:55.726 --> 00:12:58.290 is very often indicating continued improvement.

224 00:12:58.290 --> 00:13:03.290 This is not a graphical representation of a model.

225 00:13:03.930 --> 00:13:06.930 So for the PEDALs for implementation science,

226 00:13:06.930 --> 00:13:11.190 we have to start with your problems in your work,

227 00:13:11.190 --> 00:13:13.710 which can be a clinical problem, which can be

228 00:13:13.710 --> 00:13:15.270 a public health problem.

229 00:13:15.270 --> 00:13:18.420 Once you have identified this problem, you need to search

230 00:13:18.420 --> 00:13:21.750 for whether or not there are existing evidence-based

231 00:13:21.750 --> 00:13:24.990 practice EBP, which can address the problem you have

232 00:13:24.990 --> 00:13:28.470 encountered after you have identified an EBP.

233 00:13:28.470 --> 00:13:31.620 To address your problem we have to think about how to,

234 00:13:31.620 --> 00:13:35.158 what are the barriers and the determinants to implementing

235 00:13:35.158 --> 00:13:38.490 this EBP in your work setting.

236 00:13:38.490 --> 00:13:41.820 So after the good understanding of the determinants

237 00:13:41.820 --> 00:13:46.650 to the implementation of the EVP, we need to develop

238 00:13:46.650 --> 00:13:49.950 implementation strategies which can facilitate

239 00:13:49.950 --> 00:13:53.910 the adoption and uptake of this EVP, then finally

240 00:13:53.910 --> 00:13:57.390 we hope it can get into sustained use.

241 00:13:57.390 --> 00:14:01.440 All across this process there is a S for the PEDALs,

242 00:14:01.440 --> 00:14:05.460 a small s some has two meanings here

243 00:14:05.460 --> 00:14:08.791 for one way it is plural form so means this might be

244 00:14:08.791 --> 00:14:12.630 a cycle, a continuous improvement.

245 00:14:12.630 --> 00:14:17.490 Another meaning of small s is it is a scale

246 00:14:17.490 --> 00:14:20.710 so it is indicating we need to have monitoring

247 00:14:21.694 --> 00:14:24.602 and evaluation designs and the methods for

248 00:14:24.602 --> 00:14:29.602 particularly in the last two process of EBP

249 00:14:30.180 --> 00:14:34.890 developing of the determined determinants of EBP

250 00:14:34.890 --> 00:14:37.620 and also developing implementation strategy

251 00:14:37.620 --> 00:14:40.560 and also to test the effectiveness

252 00:14:40.560 --> 00:14:42.270 of the implementation strategy.

253 00:14:42.270 --> 00:14:44.520 All of that need to have a strong monitoring

254 00:14:44.520 --> 00:14:46.590 and an evaluation design.

255 00:14:46.590 --> 00:14:50.970 So that's use our shared medical appointment study

256 00:14:50.970 --> 00:14:55.524 to illustrate those process first work challenges

257 00:14:55.524 --> 00:14:58.173 and problems starting with P.

258 00:14:59.220 --> 00:15:03.600 In China, China is facing with a severe diabetic epidemic.

259 00:15:03.600 --> 00:15:07.800 In 2000 we only have 22 meaning people with diabetes.

260 00:15:07.800 --> 00:15:12.800 But in 2019 it is already 116 meaning the prevalence

261 00:15:13.890 --> 00:15:18.890 has increased dramatically from 2.7% to almost 10%.

262 00:15:20.760 --> 00:15:24.689 And the way to deal with the diabetic management in China

263 00:15:24.689 --> 00:15:27.489 is primary is through primary healthcare.

264 00:15:27.489 --> 00:15:29.979 However, we have a challenging here in China

265 00:15:29.979 --> 00:15:31.740 with a very much overburdened public health

266 00:15:31.740 --> 00:15:35.340 and clinical workforce and there is also reported

267 00:15:35.340 --> 00:15:39.030 very poor quality of care and insufficient communication

268 00:15:39.030 --> 00:15:41.250 between care providers and the patients,

269 00:15:41.250 --> 00:15:45.330 there is also a very much lack of patient centered care.

270 00:15:45.330 --> 00:15:49.570 So the service model is insufficient to really

271 00:15:50.430 --> 00:15:54.480 integrate public health work and also the curative services

272 00:15:54.480 --> 00:15:56.793 in diabetic management here in China.

273 00:15:57.890 --> 00:16:01.320 So we performed this gap analysis and we trying to

274 00:16:01.320 --> 00:16:05.850 identify whether there is other service model which has

275 00:16:05.850 --> 00:16:09.420 evidence which can meet and solve the problem we have

276 00:16:09.420 --> 00:16:11.733 encountered in this work setting.

277 00:16:12.690 --> 00:16:15.420 So that's come to the second step

278 00:16:15.420 --> 00:16:18.753 evidence-based practice EBP.

279 00:16:20.310 --> 00:16:22.320 So in order to do that, first we need to have

280 00:16:22.320 --> 00:16:27.220 some understanding to what extent health intervention

281 00:16:28.273 --> 00:16:32.435 can be considered EBP, I don't think we have some consensus

282 00:16:32.435 --> 00:16:34.680 on that, but most of the people I believe

283 00:16:34.680 --> 00:16:39.420 are familiar with this evidence pyramids evidence can

284 00:16:39.420 --> 00:16:43.410 change from expert opinions to cross-sectional studies

285 00:16:43.410 --> 00:16:46.950 all the way up to individual studies to synthesis of know

286 00:16:46.950 --> 00:16:50.310 to systematic reviews on the top.

287 00:16:50.310 --> 00:16:53.640 So normally for the journal implementation science

288 00:16:53.640 --> 00:16:56.220 and the implementation science communications,

289 00:16:56.220 --> 00:17:01.220 we will regard some health intervention as a EBP

290 00:17:01.950 --> 00:17:05.942 if they at least have several randomized control

291 00:17:05.942 --> 00:17:08.220 studies to support them in a health setting.

292 00:17:08.220 --> 00:17:12.450 But I have to say different settings, different studies,

293 00:17:12.450 --> 00:17:15.390 like some of the policy study, it's very difficult

294 00:17:15.390 --> 00:17:17.280 to have randomized control studies.

295 00:17:17.280 --> 00:17:21.715 But normally in the healthcare vicinities in this setting we

296 00:17:21.715 --> 00:17:24.801 consider several randomized control studies or even better,

297 00:17:24.801 --> 00:17:28.560 more since that systematic reviews is good to prove it

298 00:17:28.560 --> 00:17:29.703 is an EBP.

299 00:17:31.111 --> 00:17:34.020 So with that standard, fortunately we have identified

300 00:17:34.020 --> 00:17:37.320 systematic review for shared medical appointment

301 00:17:37.320 --> 00:17:41.490 which has approved SMA is a good way to tackle

302 00:17:41.490 --> 00:17:45.690 diabetic management in countries outside of china,

303 00:17:45.690 --> 00:17:47.973 so what is the shared medical appointment?

304 00:17:48.895 --> 00:17:50.700 Shared medical appointment is a new method

305 00:17:50.700 --> 00:17:52.800 of managing your patients.

306 00:17:52.800 --> 00:17:55.410 In traditionally in China, patients are managed

307 00:17:55.410 --> 00:17:59.280 under one-on-one consultation.

308 00:17:59.280 --> 00:18:02.190 So one patient go to see the doctor one-on-one,

309 00:18:02.190 --> 00:18:04.830 but for shared medical appointment patients

310 00:18:04.830 --> 00:18:07.800 with similar conditions are grouped together

311 00:18:07.800 --> 00:18:11.760 and they go and see doctor together and sometimes also

312 00:18:11.760 --> 00:18:14.761 it's not only one doctor, it's a group of

313 00:18:14.761 --> 00:18:16.290 a multidisciplinary team come together.

314 00:18:16.290 --> 00:18:20.250 So it becomes a group and group consultation between

315 00:18:20.250 --> 00:18:22.050 and the education and the management

316 00:18:22.892 --> 00:18:24.930 between the clinicians and the patient.

317 00:18:24.930 --> 00:18:27.990 And there are systematic reviews suggest shared

318 00:18:27.990 --> 00:18:31.110 and medical appointment has substantially improved clinical

319 00:18:31.110 --> 00:18:35.580 outcomes in terms of glucose control

320 00:18:35.580 --> 00:18:39.240 and blood pressure control and also it improves,

321 00:18:39.240 --> 00:18:43.260 it has a lot of benefits to improve patient behavior,

322 00:18:43.260 --> 00:18:47.310 self-management and also to improve (indistinct) adherence

323 00:18:47.310 --> 00:18:51.819 to best practice and adherence to clinical guidelines.

324 00:18:51.819 --> 00:18:56.299 And the very good is the study also suggests shared medical

325 00:18:56.299 --> 00:19:00.840 appointment for diabetic does not really increase

326 00:19:00.840 --> 00:19:02.820 the economics.

327 00:19:02.820 --> 00:19:06.090 So you don't really spend extra money,

328 00:19:06.090 --> 00:19:09.630 have extra spenditures to manage your patients

329 00:19:09.630 --> 00:19:11.850 with a shared medical appointment model.

330 00:19:11.850 --> 00:19:15.960 So it looks like it is effective and it does not

331 00:19:15.960 --> 00:19:17.670 increase your expenditure.

332 00:19:17.670 --> 00:19:21.450 It is no brainer we should use SMA but unfortunately

333 00:19:21.450 --> 00:19:23.970 in China, China we don't really use it a lot

334 00:19:23.970 --> 00:19:28.778 actually it is not used at all in all across China.

335 00:19:28.778 --> 00:19:32.340 So that's why we need to go to the third step.

336 00:19:32.340 --> 00:19:35.970 We need to understand what are the determinants various

337 00:19:35.970 --> 00:19:39.480 and facilitators which are determine the implementation

338 00:19:39.480 --> 00:19:43.850 of SMA shared medical appointment in China in our setting,

339 00:19:43.850 --> 00:19:45.510 in our primary care.

340 00:19:45.510 --> 00:19:48.240 So there are two types of barriers in the facilitators

341 00:19:48.240 --> 00:19:49.110 in my view.

342 00:19:49.110 --> 00:19:53.430 One is embedded with the shared medical appointment itself.

343 00:19:53.430 --> 00:19:57.330 So the health intervention itself can be a strong barrier

344 00:19:57.330 --> 00:19:59.760 then it moves to contextual factors.

345 00:19:59.760 --> 00:20:03.930 So first let's talk about shared medical appointment itself

346 00:20:03.930 --> 00:20:07.320 and what we need to do is we need to optimize SMA

347 00:20:07.320 --> 00:20:09.153 for the context of China.

348 00:20:10.620 --> 00:20:14.100 In that we're going to use the method proposed by

349 00:20:14.100 --> 00:20:15.730 Professor Linda Conius.

350 00:20:15.730 --> 00:20:20.730 Linda Conius is proposing a method she has developed a code

351 00:20:21.180 --> 00:20:26.130 optimizing of bio behavior and biomedical interventions,

352 00:20:26.130 --> 00:20:30.003 the multi-phase optimization strategy coll it MOST.

353 00:20:31.080 --> 00:20:35.280 So according to MOST, we have to first come up with a

354 00:20:35.280 --> 00:20:39.690 conceptual model for SMA for the setting

355 00:20:39.690 --> 00:20:43.770 of China because almost the all of the health interventions

356 00:20:43.770 --> 00:20:47.520 are sort of the complex intervention for shared

357 00:20:47.520 --> 00:20:49.920 medical appointment it's the same thing,

358 00:20:49.920 --> 00:20:51.600 it has many components.

359 00:20:51.600 --> 00:20:56.240 We need to decide what individual components for SMA

360 00:20:56.240 --> 00:20:59.880 can be combined together and it can be configured in a way

361 00:20:59.880 --> 00:21:02.790 which is best suited for the setting of China.

362 00:21:02.790 --> 00:21:05.580 So we have developed this conceptual model,

363 00:21:05.580 --> 00:21:09.630 at least it has four components which are important for SMA,

364 00:21:09.630 --> 00:21:13.470 one is you put patients with similar conditions together

365 00:21:13.470 --> 00:21:15.900 so they go to see the doctor together.

366 00:21:15.900 --> 00:21:18.887 So this component can be versus individual

367 00:21:18.887 --> 00:21:20.340 one-on-one session.

368 00:21:20.340 --> 00:21:24.419 The second component is the patient can go accompanied

369 00:21:24.419 --> 00:21:26.430 by their family members.

370 00:21:26.430 --> 00:21:30.150 The third component it is a multidisciplinary team

371 00:21:30.150 --> 00:21:33.570 from the clinicians come to see the patient.

372 00:21:33.570 --> 00:21:37.470 The fourth is the education for diabetes can

373 00:21:37.470 --> 00:21:40.440 be either online or offline, so we have at least

374 00:21:40.440 --> 00:21:41.580 four components.

375 00:21:41.580 --> 00:21:44.280 So in this conceptual model, those campaign,

376 00:21:44.280 --> 00:21:48.330 those components works through one of those nine mechanisms,

377 00:21:48.330 --> 00:21:52.380 through those two types of mediators finally it can

378 00:21:52.380 --> 00:21:55.740 improve self-management of the patients in theory

379 00:21:55.740 --> 00:22:00.740 and finally to improve primary outcome of glucose control.

380 00:22:01.020 --> 00:22:04.740 So for the conceptual model it is good in a view,

381 00:22:04.740 --> 00:22:09.060 you have your components layout clearly and also have

382 00:22:09.060 --> 00:22:11.130 your mediators layout clearly.

383 00:22:11.130 --> 00:22:14.640 But mostly important, you have all of the mechanisms

384 00:22:14.640 --> 00:22:17.340 which are supposed to work to connecting each

385 00:22:17.340 --> 00:22:20.130 of the individual component to the mediators

386 00:22:20.130 --> 00:22:23.110 and in the end to the outcome health outcome

387 00:22:24.178 --> 00:22:26.370 and the clinical outcome you are trying to achieve.

388 00:22:26.370 --> 00:22:29.970 So with the development of this SMA conception model,

389 00:22:29.970 --> 00:22:33.030 we can develop with the information from literature

390 00:22:33.030 --> 00:22:35.670 and also with consultation with clinicians

391 00:22:35.670 --> 00:22:39.255 and the stakeholders, we need to really have optimization

392 00:22:39.255 --> 00:22:42.540 trial to really understand whether or not

393 00:22:42.540 --> 00:22:45.750 those individual components can work and whether

394 00:22:45.750 --> 00:22:49.260 you combine those individual components together,

395 00:22:49.260 --> 00:22:52.020 they can be working together rather than canceling

396 00:22:52.020 --> 00:22:53.250 each other out.

397 00:22:53.250 --> 00:22:57.690 So in order to do that we are going to do a factorial design

398 00:22:57.690 --> 00:22:59.970 while we are going to do a factorial design,

399 00:22:59.970 --> 00:23:01.890 because we have four components.

400 00:23:01.890 --> 00:23:05.250 Let's say if we only have three components

401 00:23:05.250 --> 00:23:08.430 with the three components you can have eight different

402 00:23:08.430 --> 00:23:11.970 configuration of those components and making them into

403 00:23:11.970 --> 00:23:13.560 an complex intervention.

404 00:23:13.560 --> 00:23:18.210 If we are going to do in the individual two arm trial,

405 00:23:18.210 --> 00:23:22.320 we need to do three separate randomized control study

406 00:23:22.320 --> 00:23:26.910 that is very time consuming and a very resource consuming.

407 00:23:26.910 --> 00:23:29.760 But with the factorial design as proposed by

408 00:23:29.760 --> 00:23:34.290 Professor Linda Conius, we can use one trial the same

409 00:23:34.290 --> 00:23:37.980 sample size, but we can deal with all three or four

410 00:23:37.980 --> 00:23:41.040 components, so with that study we can understand whether

411 00:23:41.040 --> 00:23:44.970 or not each individual component in your complex study

412 00:23:44.970 --> 00:23:47.343 is effective or not.

413 00:23:47.343 --> 00:23:52.020 And even better with the design of a factorial design,

414 00:23:52.020 --> 00:23:55.080 they can also test interaction between those

415 00:23:55.080 --> 00:23:56.490 individual components.

416 00:23:56.490 --> 00:23:59.280 So that is important for implementation science

417 00:23:59.280 --> 00:24:02.520 because sometimes individual component can work,

418 00:24:02.520 --> 00:24:05.433 but if you put different individual components together,

419 00:24:06.592 --> 00:24:08.250 they may cancel out the effects from each other

420 00:24:08.250 --> 00:24:12.810 or they can virtually reinforce, so one plus one may be

421 00:24:12.810 --> 00:24:16.110 larger than two or less than two, so factorial design

422 00:24:16.110 --> 00:24:19.350 can deal with all those issues, so that is very good.

423 00:24:19.350 --> 00:24:23.610 And also good to remember is most it's not only

424 00:24:23.610 --> 00:24:28.050 concerning factorial design because it is optimization,

425 00:24:28.050 --> 00:24:32.730 optimization means not the best if it is not optimization.

426 00:24:32.730 --> 00:24:36.522 We are only looking for health interventions which works

427 00:24:36.522 --> 00:24:38.670 best in terms of improving health outcomes,

428 00:24:38.670 --> 00:24:42.660 but with optimization we are looking for under the resource

429 00:24:42.660 --> 00:24:46.920 constraints which we have agreed upon with the stakeholders

430 00:24:46.920 --> 00:24:48.510 what is working best.

431 00:24:48.510 --> 00:24:53.510 So we have to set clear, something we call optimization

432 00:24:54.030 --> 00:24:57.570 criteria, which can be money, which can be time

433 00:24:57.570 --> 00:24:59.640 to implementing SMA.

434 00:24:59.640 --> 00:25:03.511 So once you we have those criteria set, we can do the

435 00:25:03.511 --> 00:25:05.910 factorial design we and the way we are going to pick up

436 00:25:05.910 --> 00:25:10.440 the configuration which best suited the resource

437 00:25:10.440 --> 00:25:12.360 concentration constraints.

438 00:25:12.360 --> 00:25:16.470 But under that umbrella, whatever configuration works best

439 00:25:16.470 --> 00:25:21.180 can be picked up for our final traditional randomized

440 00:25:21.180 --> 00:25:22.290 control study.

441 00:25:22.290 --> 00:25:26.940 So that is what we are going to do to select the components

442 00:25:26.940 --> 00:25:30.690 for our SMA in that way we can reconfigure SMA

443 00:25:30.690 --> 00:25:33.166 to the context of China.

444 00:25:33.166 --> 00:25:37.890 So suppose after we have optimized SMA itself

445 00:25:37.890 --> 00:25:40.800 for the context of China, we still need to understand

446 00:25:40.800 --> 00:25:45.760 this reconfigured and optimized SMA and what are the

447 00:25:46.795 --> 00:25:49.560 other contextual factors which can determine

448 00:25:49.560 --> 00:25:53.763 the implementation of this optimized SMA.

449 00:25:54.900 --> 00:25:59.880 In order to do that we will use a lot of the frameworks.

450 00:25:59.880 --> 00:26:03.570 You know, implementation science is inundated by frameworks,

451 00:26:03.570 --> 00:26:06.510 but use of frameworks is really the essence

452 00:26:06.510 --> 00:26:08.280 of implementation research.

453 00:26:08.280 --> 00:26:11.490 I very much use this when I'm talking about

454 00:26:11.490 --> 00:26:15.244 implementation science theories, models and a framework

455 00:26:15.244 --> 00:26:16.662 without a theory.

456 00:26:16.662 --> 00:26:19.680 Think about if you have many pieces of clothing, shoes,

457 00:26:19.680 --> 00:26:23.755 juries and you do not have really a very nichey

458 00:26:23.755 --> 00:26:27.360 and very neat, very nice walking closet,

459 00:26:27.360 --> 00:26:31.130 then you are buried in your clothing and if you want to

460 00:26:31.130 --> 00:26:33.990 walk up and do a interview, it's very difficult for you

461 00:26:33.990 --> 00:26:37.320 to organize your clothing and dress up very nicely.

462 00:26:37.320 --> 00:26:41.130 But if you have a very good framework, which is almost like

463 00:26:41.130 --> 00:26:43.950 your walkin closet, you can organize the things

464 00:26:43.950 --> 00:26:47.370 systematically and you can also standing on the shooters

465 00:26:47.370 --> 00:26:49.470 of many giants because other people have done

466 00:26:49.470 --> 00:26:52.440 the work of for you what are the items that you need

467 00:26:52.440 --> 00:26:53.283 to looking at.

468 00:26:54.303 --> 00:26:56.850 So frameworks provide us with more systematic

469 00:26:56.850 --> 00:26:59.850 and comprehensive way of looking at it, the things you want

470 00:26:59.850 --> 00:27:00.730 to look at.

471 00:27:02.517 --> 00:27:07.517 And we have very good taxonomy of series models

472 00:27:07.710 --> 00:27:11.280 and the frameworks and for the PEDALs we are going

473 00:27:11.280 --> 00:27:15.270 to use a determinants frameworks for the understanding

474 00:27:15.270 --> 00:27:17.880 of barriers and the facilitators and we will use

475 00:27:17.880 --> 00:27:21.840 process models and implementation series to understand

476 00:27:21.840 --> 00:27:24.420 how to develop implementation strategy.

477 00:27:24.420 --> 00:27:27.000 Then we are going to use evaluation frameworks

478 00:27:27.000 --> 00:27:30.720 for the evaluation of your implementation strategy

479 00:27:30.720 --> 00:27:32.073 for health outcomes.

480 00:27:34.678 --> 00:27:36.930 So for specifically for SMA, we are going to use

481 00:27:36.930 --> 00:27:40.200 a concern related framework for implementation research.

482 00:27:40.200 --> 00:27:43.173 Why we use this very commonly used framework,

483 00:27:43.173 --> 00:27:47.253 CFIR is probably most widely used implementation framework.

484 00:27:48.150 --> 00:27:51.000 Why we choose it, one of the biggest reason

485 00:27:51.000 --> 00:27:53.747 is it is very comprehensive and the second is

486 00:27:53.747 --> 00:27:57.570 it has a really nice website which has layout all of the

487 00:27:57.570 --> 00:28:00.930 tools and options and the literature concerning

488 00:28:00.930 --> 00:28:04.500 this framework and also the tutorials available,

489 00:28:04.500 --> 00:28:07.080 so it's very easy to find resources.

490 00:28:07.080 --> 00:28:10.920 So once we have a implementation team and the research team

491 00:28:10.920 --> 00:28:15.390 if we use safer is much easier to teach the entire team

492 00:28:15.390 --> 00:28:16.680 how to use CFIR.

493 00:28:18.535 --> 00:28:21.183 But CFIR is a framework, it is not a model.

494 00:28:22.234 --> 00:28:25.890 So by that it does not really suggest causal linkage

495 00:28:25.890 --> 00:28:28.980 between the components and the outcome.

496 00:28:28.980 --> 00:28:32.910 So we are also considering use normalization process theory

497 00:28:32.910 --> 00:28:37.890 NPT as a complementary framework to CFIR.

498 00:28:39.877 --> 00:28:42.450 However, I have to say, even though normalization process

499 00:28:42.450 --> 00:28:45.180 theory is very nice in terms of illustrating

500 00:28:45.180 --> 00:28:50.180 the causal linkage of implementing process and the outcome,

501 00:28:51.030 --> 00:28:53.790 sometimes it is not so easy to use.

502 00:28:53.790 --> 00:28:58.590 For instance, in this picture is one of our

503 00:28:58.590 --> 00:29:02.850 reconfiguration of the domains and the constructs

504 00:29:02.850 --> 00:29:05.574 from normalization process theory.

505 00:29:05.574 --> 00:29:07.470 We have spent quite a bit of time in studying

506 00:29:07.470 --> 00:29:11.520 and understanding NPT and organize it in a way our students

507 00:29:11.520 --> 00:29:13.800 and the research team can understand better.

508 00:29:13.800 --> 00:29:17.665 But even with that we still found some of the constructs

509 00:29:17.665 --> 00:29:21.090 of this model is a little difficult to distinguish

510 00:29:21.090 --> 00:29:25.480 like inter action workability relational integration

511 00:29:25.480 --> 00:29:30.030 and skillset workability, those constructs can be very

512 00:29:30.030 --> 00:29:34.140 easily like confusing for our researchers.

513 00:29:34.140 --> 00:29:37.290 However, it is still one of the rare implementation

514 00:29:37.290 --> 00:29:39.960 science theories specifically for implementation,

515 00:29:39.960 --> 00:29:42.960 so we are considering using it for SMA as well.

516 00:29:42.960 --> 00:29:45.600 So how we are going to use it, this is a picture

517 00:29:45.600 --> 00:29:48.660 from the journey to the west, one of the very famous

518 00:29:48.660 --> 00:29:50.430 Chinese classic.

519 00:29:50.430 --> 00:29:54.124 It has many of the stakeholders for the journey to the West

520 00:29:54.124 --> 00:29:58.985 from China to India to fit the classic scripts for Buddhism,

521 00:29:58.985 --> 00:30:02.190 so you can get the Buddhism back to China

522 00:30:02.190 --> 00:30:04.050 and implementing that.

523 00:30:04.050 --> 00:30:07.140 So essentially we want to do stakeholder analysis

524 00:30:07.140 --> 00:30:11.310 to determine and engage the community.

525 00:30:11.310 --> 00:30:14.508 We want to have community engagement involvement

526 00:30:14.508 --> 00:30:16.740 and engage in your stakeholders so we can determine

527 00:30:16.740 --> 00:30:21.740 what are possible the facilitators and the barriers

528 00:30:22.055 --> 00:30:27.055 for your implementation of SMA, so in this process

529 00:30:27.660 --> 00:30:31.950 we will use CFIR and NPT and use them to design

530 00:30:31.950 --> 00:30:33.003 or survey form.

531 00:30:33.860 --> 00:30:37.350 So those can be used as a quantitative survey form,

532 00:30:37.350 --> 00:30:40.620 but we will also use them to design interview guides.

533 00:30:40.620 --> 00:30:45.324 So we can use them to do in-depth interview or even use it

534 00:30:45.324 --> 00:30:48.750 for focus group and we'll also use those frameworks

535 00:30:48.750 --> 00:30:50.400 to analyze data.

536 00:30:50.400 --> 00:30:54.150 So implementation science framework, CFIR and NPT.

537 00:30:54.150 --> 00:30:57.870 We actually guide us throughout the entire process

538 00:30:57.870 --> 00:30:58.803 of our study.

539 00:31:00.012 --> 00:31:03.780 This is the barriers and the facilitators we have identified

540 00:31:03.780 --> 00:31:06.960 from the literature, not from a actual study as our study

541 00:31:06.960 --> 00:31:08.313 is currently ongoing.

542 00:31:10.663 --> 00:31:13.860 But now think if we have already determined the barriers

543 00:31:13.860 --> 00:31:18.673 and the facilitators to normalize EBP of SMA

544 00:31:19.710 --> 00:31:22.230 in our clinical setting in primary healthcare,

545 00:31:22.230 --> 00:31:25.830 now we need to develop implementation strategies to deal

546 00:31:25.830 --> 00:31:27.753 with each of the barriers.

547 00:31:28.770 --> 00:31:31.890 In order to identify implementation techniques,

548 00:31:31.890 --> 00:31:36.280 then you can package those individual techniques into the

549 00:31:36.280 --> 00:31:39.330 package we call implementation strategy,

550 00:31:39.330 --> 00:31:43.170 which can deal with the implementation barriers effectively

551 00:31:43.170 --> 00:31:45.450 so we can improve uptake.

552 00:31:45.450 --> 00:31:50.450 We already have good studies in developing taxonomy

553 00:31:50.460 --> 00:31:54.600 of implementation strategies which are expert recommendation

554 00:31:54.600 --> 00:31:55.950 for implementation change.

555 00:31:55.950 --> 00:31:59.790 The ERIC, so ERIC is one of the popular framework

556 00:31:59.790 --> 00:32:04.020 which have categorized all the available implementation

557 00:32:04.020 --> 00:32:05.970 technique they can identify.

558 00:32:05.970 --> 00:32:09.420 But the key is really to, I identify those

559 00:32:09.420 --> 00:32:13.407 available implementation technique which very often

560 00:32:13.407 --> 00:32:15.690 have already some evidence-based and match them

561 00:32:15.690 --> 00:32:17.610 to your implementation barrier.

562 00:32:17.610 --> 00:32:21.613 So this is a step critical in developing your action,

563 00:32:21.613 --> 00:32:25.020 which means developing your implementation strategy.

564 00:32:25.020 --> 00:32:28.980 But the key, the big challenge is what are the methods

565 00:32:28.980 --> 00:32:33.980 you can use to match entertainer implementation strategies

566 00:32:35.880 --> 00:32:38.730 to your barriers in your setting.

567 00:32:38.730 --> 00:32:41.430 This is a really a under-researched area in

568 00:32:41.430 --> 00:32:42.840 implementation science.

569 00:32:42.840 --> 00:32:47.820 However, one of the researcher has suggest four methods

570 00:32:47.820 --> 00:32:51.330 we can consider, one is called concept mapping,

571 00:32:51.330 --> 00:32:54.693 which is a visual mapping using mixed and methods.

572 00:32:55.920 --> 00:33:00.920 The map here is one of the visualization of the barriers

573 00:33:01.439 --> 00:33:06.063 in implementing some EBP.

574 00:33:07.274 --> 00:33:09.750 Then the second method is group model building,

575 00:33:09.750 --> 00:33:13.882 which is sort of the a causal loop diagram of complex

576 00:33:13.882 --> 00:33:15.300 problems.

577 00:33:15.300 --> 00:33:19.530 The third is a conjoint analysis, conjoint analysis

578 00:33:19.530 --> 00:33:21.090 has different forms.

579 00:33:21.090 --> 00:33:24.120 One of the most popular form is called a discrete choice

580 00:33:24.120 --> 00:33:27.960 experiment, which we are going to talk a little later

581 00:33:27.960 --> 00:33:31.800 because we have opted for DCE Discrete Choice Experiment

582 00:33:31.800 --> 00:33:33.570 for our study.

583 00:33:33.570 --> 00:33:35.760 The last one is intervention mapping,

584 00:33:35.760 --> 00:33:39.120 which is a systematic and multi-step development

585 00:33:39.120 --> 00:33:41.040 of interventions.

586 00:33:41.040 --> 00:33:45.090 All of those four methods have been extensively used in

587 00:33:45.090 --> 00:33:48.450 other fields but not as much in implementation research.

588 00:33:48.450 --> 00:33:50.790 So I'm really highly encouraging all of us

589 00:33:50.790 --> 00:33:54.270 in doing implementation research to use some of those

590 00:33:54.270 --> 00:33:57.810 methods in systematically match and retainer implementation

591 00:33:57.810 --> 00:34:00.630 strategies to the barriers you have identified

592 00:34:00.630 --> 00:34:01.950 in your study.

593 00:34:01.950 --> 00:34:05.460 So for us, we are going to use a difficult choice experiment

594 00:34:05.460 --> 00:34:08.137 to tailor implementation strategies for SMA,

595 00:34:09.063 --> 00:34:11.880 DCE is widely used in health economics,

596 00:34:11.880 --> 00:34:14.880 but not as much in implementation science.

597 00:34:14.880 --> 00:34:18.030 DCE belongs to the method in conjoin analysis,

598 00:34:18.030 --> 00:34:23.030 DCE in our team we have used the DCE before

599 00:34:23.160 --> 00:34:27.030 in understanding healthcare professionals preference

600 00:34:27.030 --> 00:34:31.142 for working in the primary care setting job preferences.

601 00:34:31.142 --> 00:34:34.440 According to review, they have identified

602 00:34:34.440 --> 00:34:38.340 22 DCE studies comparing different implementation

603 00:34:38.340 --> 00:34:39.243 strategies.

604 00:34:40.320 --> 00:34:45.320 So it is not so much used as as much in other field of work.

605 00:34:46.770 --> 00:34:51.240 So use of DCE in our SMA study is like this

606 00:34:51.240 --> 00:34:55.980 in basically in DC you it's a combination of a quantitative

607 00:34:55.980 --> 00:34:57.690 and a quantitative work.

608 00:34:57.690 --> 00:35:02.690 You first it's most likely we'll use a quantitative work

609 00:35:02.730 --> 00:35:06.930 and also literature review to identify what are the

610 00:35:06.930 --> 00:35:11.190 possible implementation techniques to be developed.

611 00:35:11.190 --> 00:35:14.370 So we develop those implementation strategies,

612 00:35:14.370 --> 00:35:18.571 the techniques through initial review of literature

613 00:35:18.571 --> 00:35:20.910 and expert consensus.

614 00:35:20.910 --> 00:35:25.060 So for instance, if we have identified through this process

615 00:35:26.070 --> 00:35:30.000 audit and feedback is one of the major implementation

616 00:35:30.000 --> 00:35:32.550 strategy to deal with this barriers,

617 00:35:32.550 --> 00:35:36.840 we have identified the DCE then can do the work of

618 00:35:36.840 --> 00:35:40.240 painter audit and feedback to the specific setting

619 00:35:41.190 --> 00:35:44.940 to implementing SMA, because why we are going to do this,

620 00:35:44.940 --> 00:35:49.320 because even it is called audit and feedback,

621 00:35:49.320 --> 00:35:51.810 it actually has many components.

622 00:35:51.810 --> 00:35:56.160 This is very much like EBP of SMA can be complex

623 00:35:56.160 --> 00:35:57.480 as many components.

624 00:35:57.480 --> 00:36:00.930 Our implementation strategy can also have many components.

625 00:36:00.930 --> 00:36:05.910 So we can develop these different components of audit

626 00:36:05.910 --> 00:36:09.060 and feedback including format of feedback.

627 00:36:09.060 --> 00:36:12.750 Is it a verbal or written recipients of feedback?

628 00:36:12.750 --> 00:36:15.870 Do we feedback to individual clinician or feedback

629 00:36:15.870 --> 00:36:18.450 to the entire group the source of feedback,

630 00:36:18.450 --> 00:36:21.580 is the feedback coming from that influential source

631 00:36:22.600 --> 00:36:25.590 like their peers or supervisor or is it coming from

632 00:36:25.590 --> 00:36:26.910 the researchers?

633 00:36:26.910 --> 00:36:29.790 How we are going to deliver the feedback by emails,

634 00:36:29.790 --> 00:36:32.370 by letter or in person?

635 00:36:32.370 --> 00:36:34.810 How frequent your feedback should be monthly

636 00:36:36.393 --> 00:36:37.637 or every four months.

637 00:36:37.637 --> 00:36:41.430 Now how the instruction for feedback need to be developed.

638 00:36:41.430 --> 00:36:46.430 Will it be explicit, measurable, targeted but no action plan

639 00:36:46.620 --> 00:36:50.310 or should it be accompanied with action plan,

640 00:36:50.310 --> 00:36:55.200 but no explicit target or in addition to audit and feedback,

641 00:36:55.200 --> 00:36:57.060 do we need to copy that with another

642 00:36:57.060 --> 00:36:58.500 implementation strategy?

643 00:36:58.500 --> 00:37:01.110 Say giving people financial incentive.

644 00:37:01.110 --> 00:37:04.890 If we are going to do the SMA, we give them extra money

645 00:37:04.890 --> 00:37:05.730 to do that.

646 00:37:05.730 --> 00:37:09.810 Okay, so the audit and feedback and our implementation

647 00:37:09.810 --> 00:37:13.350 strategy have all those individual attributes

648 00:37:13.350 --> 00:37:16.705 and all those attributes have levels.

649 00:37:16.705 --> 00:37:21.705 So we can based on those, we can develop different choices

650 00:37:22.227 --> 00:37:26.610 have one to many, many, many, many choices for.

651 00:37:26.610 --> 00:37:31.610 So we present those choices side by side to our respondents,

652 00:37:31.943 --> 00:37:35.496 to our stakeholders to so they can choose between those

653 00:37:35.496 --> 00:37:36.329 two choices.

654 00:37:36.329 --> 00:37:40.830 Which set would you prefer is our approach to improve SMA

655 00:37:40.830 --> 00:37:43.230 in your organization So they can make the choice,

656 00:37:43.230 --> 00:37:46.800 so after the respondents the stakeholders have

657 00:37:46.800 --> 00:37:51.800 making all those choices from those choices then we can do a

658 00:37:53.100 --> 00:37:54.780 statistical analysis.

659 00:37:54.780 --> 00:37:58.590 With that we can determine how preference are influenced

660 00:37:58.590 --> 00:38:01.530 by each attributes and we can also give the

661 00:38:01.530 --> 00:38:05.580 relative importance of those attributes.

662 00:38:05.580 --> 00:38:08.970 And in particular, once we give a financial incentive here

663 00:38:08.970 --> 00:38:13.530 have a dollar amount, we can actually measure and transform

664 00:38:13.530 --> 00:38:15.960 all those attributes into something called

665 00:38:15.960 --> 00:38:17.520 the willingness to pay.

666 00:38:17.520 --> 00:38:21.742 So we can precisely quantify the value of all those

667 00:38:21.742 --> 00:38:24.300 individual attributes.

668 00:38:24.300 --> 00:38:27.120 So after we have done this exercise,

669 00:38:27.120 --> 00:38:31.291 we can understand the preference of our stakeholders,

670 00:38:31.291 --> 00:38:36.291 what kind of audit and feedback they think might work best

671 00:38:36.930 --> 00:38:39.333 even though this is pre-implementation,

672 00:38:40.573 --> 00:38:44.430 so after doing this we can develop a complete package

673 00:38:44.430 --> 00:38:47.010 of implementation strategy.

674 00:38:47.010 --> 00:38:50.490 So after we have done this, the important thing

675 00:38:50.490 --> 00:38:52.920 before we can move this to sustain the use

676 00:38:52.920 --> 00:38:56.940 is to come up with very good monitoring and evaluation plan,

677 00:38:56.940 --> 00:39:01.020 which will entail to develop evaluation designs

678 00:39:01.020 --> 00:39:04.747 implementation outcomes and measurement tools.

679 00:39:04.747 --> 00:39:07.863 So let's focus on this S part of the S model.

680 00:39:09.000 --> 00:39:12.820 First we need to understand what kind of design we want to

681 00:39:14.220 --> 00:39:15.930 tailor this into.

682 00:39:15.930 --> 00:39:18.660 There are something called a hybrid design.

683 00:39:18.660 --> 00:39:22.830 Hybrid design is sort of the design you are trying

684 00:39:22.830 --> 00:39:26.310 to balance to what extent you want to have this study

685 00:39:26.310 --> 00:39:30.390 as a effectiveness study of your EBP, which is SMA

686 00:39:30.390 --> 00:39:33.420 or to what extent you want to test the implementation

687 00:39:33.420 --> 00:39:36.210 outcome of your implementation strategy,

688 00:39:36.210 --> 00:39:39.510 which in our case can be audited the feedback.

689 00:39:39.510 --> 00:39:44.400 So depending on the priority of set to those two outcomes,

690 00:39:44.400 --> 00:39:49.320 it can be type one, type two or type three hybrid design.

691 00:39:49.320 --> 00:39:52.860 For type two hybrid design, you are going to test

692 00:39:52.860 --> 00:39:55.770 both the effectiveness of the EBP

693 00:39:55.770 --> 00:40:00.480 and also to test the effectiveness of your implementation

694 00:40:00.480 --> 00:40:05.400 strategy, because SMA has not yet been done in China before.

695 00:40:05.400 --> 00:40:10.400 So it's very important for us to test the factories of SMA,

696 00:40:10.950 --> 00:40:13.290 but it is also important for us as an

697 00:40:13.290 --> 00:40:17.250 implementation scientist to test the implementation strategy

698 00:40:17.250 --> 00:40:20.790 of audit and feedback in implementing SMA.

699 00:40:20.790 --> 00:40:25.470 So we opted for type two hybrid design for implementation

700 00:40:25.470 --> 00:40:30.470 for implementing SMA in our setting, but what type of design

701 00:40:31.589 --> 00:40:35.610 we are going to use for our trial, we are considering to use

702 00:40:35.610 --> 00:40:39.510 something called the step wedge design, step wedge design

703 00:40:39.510 --> 00:40:42.690 is a unique type of randomized control study,

704 00:40:42.690 --> 00:40:47.690 but it allow gradual implementation of SMA across

705 00:40:48.420 --> 00:40:53.160 the primary care institutions centers in our sample.

706 00:40:53.160 --> 00:40:57.798 So for the use of a step wedge design, eventually everybody

707 00:40:57.798 --> 00:41:02.798 in your setting in your S participants will receive SMA.

708 00:41:03.764 --> 00:41:08.764 So this give the gradual implementation of SMA

709 00:41:09.060 --> 00:41:14.060 has some advantage, because then we can facing our manpower

710 00:41:14.340 --> 00:41:18.750 so we can ensure we really implement SMA in our institutions

711 00:41:18.750 --> 00:41:20.610 step by step gradually.

712 00:41:20.610 --> 00:41:25.260 And also all sites eventually receive SMA means ethically it

713 00:41:25.260 --> 00:41:28.920 is better than some people only serving as controls

714 00:41:28.920 --> 00:41:32.100 without the benefits of the SMA.

715 00:41:32.100 --> 00:41:36.690 Also it says the step wedge design has a great statistical

716 00:41:36.690 --> 00:41:40.380 property so with the same sample size,

717 00:41:40.380 --> 00:41:44.070 normally it has a much higher statistical power

718 00:41:44.070 --> 00:41:47.340 than conventional two (indistinct) control study.

719 00:41:47.340 --> 00:41:51.930 But the complications of step wedge design is the analysis

720 00:41:51.930 --> 00:41:56.310 plan is much more complicated than the two randomized

721 00:41:56.310 --> 00:41:59.940 control study and also the length of your study

722 00:41:59.940 --> 00:42:02.073 is much longer than your study.

723 00:42:03.017 --> 00:42:06.750 So in our specific for SMA study in the study we are going

724 00:42:06.750 --> 00:42:10.110 to do the effectiveness trial for SMA.

725 00:42:10.110 --> 00:42:14.661 So five counties in China, each county have two

726 00:42:14.661 --> 00:42:17.404 primary healthcare centers.

727 00:42:17.404 --> 00:42:22.404 So we will randomize those five counties in those six steps,

728 00:42:22.560 --> 00:42:27.240 randomize them into receiving SMA gradually until in the end

729 00:42:27.240 --> 00:42:29.820 all of them are receiving SMA.

730 00:42:29.820 --> 00:42:34.820 But for each of the county, one of the primary care centers,

731 00:42:34.961 --> 00:42:38.700 one of them will receive the audit and the feedback

732 00:42:38.700 --> 00:42:40.620 as a implementation strategy.

733 00:42:40.620 --> 00:42:43.920 The other will receive another type of usual implementation

734 00:42:43.920 --> 00:42:46.800 strategy, so we can compare in this study

735 00:42:46.800 --> 00:42:51.800 both the effectiveness of SMA but also can use experimental

736 00:42:53.160 --> 00:42:56.880 design to compare the effectiveness

737 00:42:56.880 --> 00:43:00.690 for implementation outcomes for audit and feedback

738 00:43:00.690 --> 00:43:04.353 versus usually of implementation.

739 00:43:07.145 --> 00:43:09.600 <v Maur>I just wanted to let you know we have less</v>

740 00:43:09.600 --> 00:43:12.480 than 15 minutes, so I just wanted to make sure.

741 00:43:12.480 --> 00:43:13.740 <v Roman>Sure, sure, sure.</v>

742 00:43:13.740 --> 00:43:16.530 I only need two more minutes to wrap this up.

743 00:43:16.530 --> 00:43:19.380 I have a big timer on my side.

744 00:43:19.380 --> 00:43:20.213 <v Maur>Oh perfect.</v>

745 00:43:20.213 --> 00:43:22.280 <v Roman>Reminding of that.</v>

746 00:43:22.280 --> 00:43:24.699 So we also have implementation outcomes,

747 00:43:24.699 --> 00:43:26.730 which I think people are already familiar with.

748 00:43:26.730 --> 00:43:29.910 The one thing I want to emphasize is for implementation

749 00:43:29.910 --> 00:43:32.820 outcomes and also for patient and the service outcomes,

750 00:43:32.820 --> 00:43:36.960 they all have two dimensions, the absolute obtainment

751 00:43:36.960 --> 00:43:39.660 and also the equity which is the distribution

752 00:43:39.660 --> 00:43:42.573 of your outcomes among your stakeholders.

753 00:43:43.620 --> 00:43:47.863 We're going to use the RE-AIM as well, but there are many

754 00:43:47.863 --> 00:43:51.570 challenges actually in using a RE-AIM, RE-AIM

755 00:43:51.570 --> 00:43:55.350 is not as simple as it appears, because it is sometimes

756 00:43:55.350 --> 00:43:57.930 it's difficult to operationalize say

757 00:43:57.930 --> 00:44:01.920 the implementation outcome for RE-AIM framework,

758 00:44:01.920 --> 00:44:06.000 say how do you measure fidelity of delivering SMA?

759 00:44:06.000 --> 00:44:09.571 One of the things we're considering the measurement tool

760 00:44:09.571 --> 00:44:11.329 is to use standardized patient.

761 00:44:11.329 --> 00:44:13.260 We have not yet decided on this yet, but because

762 00:44:13.260 --> 00:44:18.060 we have already been the conducting a very massive study

763 00:44:18.060 --> 00:44:23.060 of using standardized patients in assess quality of care

764 00:44:23.130 --> 00:44:26.160 in China, which is a fake patients, but they are trained

765 00:44:26.160 --> 00:44:29.970 so they control the case mix and there is no

766 00:44:29.970 --> 00:44:33.510 Hawthorne effects compared with other direct observation

767 00:44:33.510 --> 00:44:38.510 of your clinical practice and using standardized patients

768 00:44:40.620 --> 00:44:43.980 can also enable quick audit and feedback work.

769 00:44:43.980 --> 00:44:47.670 So we are considering seriously because of our experiences

770 00:44:47.670 --> 00:44:50.490 and the expertise in using this method

771 00:44:50.490 --> 00:44:54.510 in assessing primary care quantity, we are considering

772 00:44:54.510 --> 00:44:58.320 using this as a quantity outcome collecting tool

773 00:44:58.320 --> 00:45:03.320 to understand the fidelity and implementation process

774 00:45:03.510 --> 00:45:06.570 of SMA for our settings.

775 00:45:06.570 --> 00:45:08.790 If we are interested in this method further,

776 00:45:08.790 --> 00:45:12.180 you can check out two of the papers that we have published

777 00:45:12.180 --> 00:45:16.050 to illustrating how this can be used in other setting.

778 00:45:16.050 --> 00:45:20.820 So that is what I am trying to talk about this PEADLs model.

779 00:45:20.820 --> 00:45:24.630 So basically this is the model is to give researchers

780 00:45:24.630 --> 00:45:27.810 and students to think about your thought implementation

781 00:45:27.810 --> 00:45:31.650 research from identifying the problem in your work.

782 00:45:31.650 --> 00:45:35.670 Then you need to identify EBP to address that problem,

783 00:45:35.670 --> 00:45:38.787 but you really need to understand what might be the barriers

784 00:45:38.787 --> 00:45:41.640 and the facilitators and based on that to develop

785 00:45:41.640 --> 00:45:45.090 your implementation strategy in order to achieve

786 00:45:45.090 --> 00:45:46.260 sustained use.

787 00:45:46.260 --> 00:45:50.460 But all across this process you have to have a very sound

788 00:45:50.460 --> 00:45:55.460 and a good evaluation design plans and measurement tools.

789 00:45:56.520 --> 00:45:59.717 So thank you so much, I hope this presentation

790 00:45:59.717 --> 00:46:04.717 can motivating some people to come for our program

791 00:46:05.384 --> 00:46:08.700 for postdoctoral fellows in implementation science

792 00:46:08.700 --> 00:46:11.970 in our Acacia lab and our center for

793 00:46:11.970 --> 00:46:13.800 Institute for Global Health.

794 00:46:13.800 --> 00:46:17.580 We give very nice benefits for people coming to China

795 00:46:17.580 --> 00:46:20.880 to do two to three year postdoctoral fellowship

796 00:46:20.880 --> 00:46:24.360 in implementation science, all of you are welcome to apply.

797 00:46:24.360 --> 00:46:25.533 Thank you so much.

798 00:46:26.667 --> 00:46:29.553 <v Maur>Great, thank you Roman, that was fantastic,</v>

799 00:46:30.930 --> 00:46:33.090 really a terrific presentation.

800 00:46:33.090 --> 00:46:35.190 I'll go ahead and open it up to questions.

801 00:46:36.150 --> 00:46:39.982 If you have any questions feel free to just unmute yourself,

802 00:46:39.982 --> 00:46:42.660 introduce yourself and ask or I see Donna

803 00:46:42.660 --> 00:46:43.493 has raised her hand.

804 00:46:43.493 --> 00:46:45.000 Donna, why don't please go ahead.

805 00:46:46.160 --> 00:46:50.262 <v Donna>Hi everybody, sorry I'm on the train actually,</v>

806 00:46:50.262 --> 00:46:52.740 I had to go into New York City today for an appointment,

807 00:46:52.740 --> 00:46:56.070 so there's some background noise I apologize for.

808 00:46:56.070 --> 00:46:58.590 But Roman, I just wanna say that this was just an

809 00:46:58.590 --> 00:47:02.640 absolutely brilliant talk where you walked us through all

810 00:47:02.640 --> 00:47:06.540 of the essential aspects of implementation science

811 00:47:06.540 --> 00:47:09.300 from the beginning to end and connected.

812 00:47:09.300 --> 00:47:12.540 How these various theories and frameworks where they jump in

813 00:47:12.540 --> 00:47:16.440 where we need 'em, what might be a recommended approach.

814 00:47:16.440 --> 00:47:20.160 I mean just absolutely fantastic and I'm sure

815 00:47:20.160 --> 00:47:23.274 the audience learned very much from this talk.

816 00:47:23.274 --> 00:47:26.490 I know all of us struggle with the confusions

817 00:47:26.490 --> 00:47:29.670 of these theories and models and frameworks and where they

818 00:47:29.670 --> 00:47:33.420 fit in what is implementation science and the steps of it.

819 00:47:33.420 --> 00:47:36.360 You just laid it out so clearly it's just,

820 00:47:36.360 --> 00:47:39.210 I'm just floored at how nice this was.

821 00:47:39.210 --> 00:47:43.854 So thank you so much and on behalf of all of us for this,

822 00:47:43.854 --> 00:47:45.860 I have two questions actually.

823 00:47:45.860 --> 00:47:49.731 One comment you mentioned, you know I'm somebody who's

824 00:47:49.731 --> 00:47:53.790 done research on developing statistical methods

825 00:47:53.790 --> 00:47:57.360 for step wedge design, you mentioned two drawbacks.

826 00:47:57.360 --> 00:48:00.540 One is that it takes longer, which I completely agree with

827 00:48:00.540 --> 00:48:03.720 and I think it's worth documenting that better,

828 00:48:03.720 --> 00:48:06.000 because I'm not sure there's any kind of papers

829 00:48:06.000 --> 00:48:09.150 or publications that actually show that trade off.

830 00:48:09.150 --> 00:48:11.397 And then the other is, and people ask me

831 00:48:11.397 --> 00:48:13.590 and I know it's longer but I can't really say

832 00:48:13.590 --> 00:48:15.453 how much longer exactly.

833 00:48:16.320 --> 00:48:18.870 So I think it probably gets the longer,

834 00:48:18.870 --> 00:48:20.370 the more step times you have.

835 00:48:20.370 --> 00:48:22.650 But anyway, I'm not gonna speculate right now.

836 00:48:22.650 --> 00:48:26.029 But the other thing you mentioned was that the analysis

837 00:48:26.029 --> 00:48:27.780 was more complicated and it's true that in

838 00:48:27.780 --> 00:48:30.210 a parallel cluster randomized design,

839 00:48:30.210 --> 00:48:32.670 which is usually the other alternative,

840 00:48:32.670 --> 00:48:36.150 you can just basically compare the mean outcome rates,

841 00:48:36.150 --> 00:48:39.585 whether they're continuous or binary at the end of the study

842 00:48:39.585 --> 00:48:43.470 using a two sample tests, but you do have to account

843 00:48:43.470 --> 00:48:45.450 for clustering even there.

844 00:48:45.450 --> 00:48:48.780 And then with the step wedge design, it's only one step

845 00:48:48.780 --> 00:48:52.890 more complicated in that that comparison has to adjust

846 00:48:52.890 --> 00:48:54.090 the time effect.

847 00:48:54.090 --> 00:48:58.110 But there's very standard statistical methods

848 00:48:58.110 --> 00:49:02.100 that basically every kind of software to do a

849 00:49:02.100 --> 00:49:04.500 generalized linear model or a regression model

850 00:49:04.500 --> 00:49:07.200 that accounts for clustering and allows for

851 00:49:07.200 --> 00:49:10.860 a binary intervention effect and then indicator variables

852 00:49:10.860 --> 00:49:13.980 for every time effect and then perform the test

853 00:49:13.980 --> 00:49:16.950 of the difference between the two groups based

854 00:49:16.950 --> 00:49:20.990 on the regression coefficient using either a robust wall

855 00:49:20.990 --> 00:49:23.422 or a robust square tests.

856 00:49:23.422 --> 00:49:27.570 So I'm not sure why you felt it was like an actual barrier,

857 00:49:27.570 --> 00:49:31.020 I just don't feel that that should be so,

858 00:49:31.020 --> 00:49:34.241 and then my last comment, because we've been chatting about

859 00:49:34.241 --> 00:49:37.365 this is the issue of quality and how that fits into,

860 00:49:37.365 --> 00:49:41.490 especially in low and middle income countries,

861 00:49:41.490 --> 00:49:43.950 I think it's sort of assumed in the United States

862 00:49:43.950 --> 00:49:46.860 all you have to do is get the service out to somebody

863 00:49:46.860 --> 00:49:48.750 and the quality is already very high,

864 00:49:48.750 --> 00:49:51.200 we don't have to worry about that.

865 00:49:51.200 --> 00:49:53.010 It's probably not true, but that's the assumption.

866 00:49:53.010 --> 00:49:55.110 But in low and middle income countries may be,

867 00:49:55.110 --> 00:49:57.270 and it may not even be true, the quality issue

868 00:49:57.270 --> 00:50:00.510 is even bigger and it doesn't seem to be something,

869 00:50:00.510 --> 00:50:03.060 it seems to be addressed in the health systems

870 00:50:03.060 --> 00:50:07.680 research field but not, I haven't heard any chatter about it

871 00:50:07.680 --> 00:50:09.030 implementation science.

872 00:50:09.030 --> 00:50:13.350 So anyway, my question was complexity of step wedge design

873 00:50:13.350 --> 00:50:15.810 analysis and then this issue of quality.

874 00:50:15.810 --> 00:50:18.840 And just thank you so much again for an absolutely

875 00:50:18.840 --> 00:50:21.393 like fantastic crystal clear talk.

876 00:50:22.980 --> 00:50:24.510 <v Roman>Thank you Donna.</v>

877 00:50:24.510 --> 00:50:29.040 I think I'm not a statistician, but I think this is

878 00:50:29.040 --> 00:50:32.850 precisely where statisticians like Donna,

879 00:50:32.850 --> 00:50:36.660 you can play a really big role in help strengthening

880 00:50:36.660 --> 00:50:38.790 the methods in implementation science.

881 00:50:38.790 --> 00:50:41.580 Step wedge design has a lot of potential

882 00:50:41.580 --> 00:50:43.560 for implementation science, I think that

883 00:50:43.560 --> 00:50:46.649 is my understanding, but statistician can correct me.

884 00:50:46.649 --> 00:50:51.649 I think it's generally longer than traditional two RCT.

885 00:50:51.960 --> 00:50:55.770 The reason is for the steps, like the step here,

886 00:50:55.770 --> 00:50:59.010 we allow it three months for one phase, one step

887 00:50:59.010 --> 00:51:03.257 because for each step you have to have long enough

888 00:51:03.257 --> 00:51:08.257 a duration to allow SMA effect to be fully released

889 00:51:09.840 --> 00:51:14.130 if the effect cannot be fully released during one step,

890 00:51:14.130 --> 00:51:17.820 you have to use even more complicated statistical

891 00:51:17.820 --> 00:51:19.740 method for analysis.

892 00:51:19.740 --> 00:51:24.703 So because in theory if it is a two arm RCT

893 00:51:27.085 --> 00:51:29.610 in three months you can wrap up this study.

894 00:51:29.610 --> 00:51:33.900 But for implementation for step wedge it is much longer,

895 00:51:33.900 --> 00:51:35.490 so that is one reason.

896 00:51:35.490 --> 00:51:38.190 In terms of analysis, I agree with

897 00:51:38.190 --> 00:51:41.597 Donna now compared with the several years ago

898 00:51:41.597 --> 00:51:46.597 there now have been many software R package coming out,

899 00:51:47.220 --> 00:51:50.400 which can enable analysis much easier.

900 00:51:50.400 --> 00:51:53.340 But still sometimes it's difficult for researchers

901 00:51:53.340 --> 00:51:57.030 which have no statistical background to understand

902 00:51:57.030 --> 00:51:59.670 why they need to do this and why not.

903 00:51:59.670 --> 00:52:04.670 Sometimes it's always good to embed some good statistician

904 00:52:04.830 --> 00:52:07.950 in your team even though the software can do a lot of

905 00:52:07.950 --> 00:52:09.300 work for you.

906 00:52:09.300 --> 00:52:11.010 In terms of quality of care,

907 00:52:11.010 --> 00:52:13.958 I agree with Donna, it's a severe issue,

908 00:52:13.958 --> 00:52:17.760 increasing coverage is not the only thing to do

909 00:52:17.760 --> 00:52:19.980 in low income countries.

910 00:52:19.980 --> 00:52:23.798 The coverage without a quality service can be harmful

911 00:52:23.798 --> 00:52:26.527 and the risk of your resources.

912 00:52:26.527 --> 00:52:31.380 So that's why our research team case study focus,

913 00:52:31.380 --> 00:52:34.200 a lot of our study we use as standardized patient

914 00:52:34.200 --> 00:52:38.400 to assess quality of care across seven provinces in China,

915 00:52:38.400 --> 00:52:41.987 which is unprecedented, because of the implementation

916 00:52:41.987 --> 00:52:46.650 of standardized patients is really very difficult

917 00:52:46.650 --> 00:52:50.045 to that scale, but we have demonstrated it's possible even

918 00:52:50.045 --> 00:52:52.784 using in that setting.

919 00:52:52.784 --> 00:52:55.740 So we now have a precise understanding of the quality

920 00:52:55.740 --> 00:52:59.040 in China, which is, I have to say very, very poor.

921 00:52:59.040 --> 00:53:01.020 We have not yet get this paper out,

922 00:53:01.020 --> 00:53:03.933 but once it is out we'll share, thank you so much.

923 00:53:07.629 --> 00:53:09.540 <v Maur>Great, thank you.</v>

924 00:53:09.540 --> 00:53:11.940 I don't know if there, we have a couple minutes left.

925 00:53:11.940 --> 00:53:15.693 I don't know if anyone has any last comment or question.

926 00:53:25.230 --> 00:53:26.970 Go ahead, I see your hand raised.

927 00:53:26.970 --> 00:53:30.025 <v Attendee 1>Yeah, thank you Dr. Xi</v>

928 00:53:30.025 --> 00:53:31.893 and it's very great to meet you here.

929 00:53:32.940 --> 00:53:35.403 Yeah, I think this is a great talk.

930 00:53:36.451 --> 00:53:39.210 I really learned a lot about implementation science

931 00:53:39.210 --> 00:53:43.555 and as I can see, I actually have a question about

932 00:53:43.555 --> 00:53:47.700 the third stage in PEDALs, the third stage is determinants.

933 00:53:47.700 --> 00:53:51.090 So I can see you list health intervention factors

934 00:53:51.090 --> 00:53:53.823 and also contextual factors.

935 00:53:54.887 --> 00:53:58.120 So I would like to know whether you have insights on

936 00:53:59.196 --> 00:54:04.196 how to analyze or disentangle the relationship between

937 00:54:04.200 --> 00:54:09.200 health intervention factors and contextual factors,

938 00:54:09.746 --> 00:54:12.090 how would you consider their relationship?

939 00:54:12.090 --> 00:54:15.090 Like whether contextual factors can be considered

940 00:54:15.090 --> 00:54:20.090 as mediators or whether it's hierarchical design

941 00:54:20.610 --> 00:54:25.260 that contextual factors need to be on a higher level

942 00:54:25.260 --> 00:54:30.260 and whether it involve very complex analysis

943 00:54:30.720 --> 00:54:35.720 and yeah, like what we want to get out of this analysis.

944 00:54:38.520 --> 00:54:42.750 <v Roman>Thank you Pungfe, actually in most of the</v>

945 00:54:42.750 --> 00:54:47.220 implementation science framework, they put the

946 00:54:47.220 --> 00:54:52.220 barriers associated with health intervention

947 00:54:53.370 --> 00:54:57.407 itself and the contextual factors together

948 00:54:57.407 --> 00:55:02.407 in the framework like CFIR and TDF, many other frameworks,

949 00:55:03.660 --> 00:55:08.660 which already wrapped both elements in one framework,

950 00:55:10.560 --> 00:55:15.560 but I have tear them apart because in our SMA study,

951 00:55:16.770 --> 00:55:21.540 we essentially have decided to do this in two steps.

952 00:55:21.540 --> 00:55:26.540 One is to optimize SMA so it can work better

953 00:55:29.280 --> 00:55:30.750 in the Chinese setting,

954 00:55:30.750 --> 00:55:34.360 as I have described in the past SMA, although there are many

955 00:55:35.400 --> 00:55:38.460 RCTs to prove its effectiveness,

956 00:55:38.460 --> 00:55:41.040 but most of them are in high income countries

957 00:55:41.040 --> 00:55:45.270 and almost none of them have compare head to head

958 00:55:45.270 --> 00:55:50.220 the individual components in that complex SMA study,

959 00:55:50.220 --> 00:55:53.370 so we don't really know what individual components

960 00:55:53.370 --> 00:55:54.903 can work best.

961 00:55:55.860 --> 00:55:59.220 So after we have done that, then we goes to understand

962 00:55:59.220 --> 00:56:02.700 for the optimized package complex intervention,

963 00:56:02.700 --> 00:56:05.670 what are the contextual factors which can contribute in

964 00:56:05.670 --> 00:56:10.050 to the implementation of that health intervention SMA.

965 00:56:10.050 --> 00:56:14.610 So in our study we sort of have clearly divided those

966 00:56:14.610 --> 00:56:19.610 into two steps even though the optimized SMA

967 00:56:19.710 --> 00:56:22.680 can still be a factor, which can create barriers

968 00:56:22.680 --> 00:56:25.830 in our final study I have to say.

969 00:56:25.830 --> 00:56:28.740 The other thing is it's very difficult to distinguish

970 00:56:28.740 --> 00:56:31.830 sometimes, sometimes people use contextual factors,

971 00:56:31.830 --> 00:56:34.140 environmental factors, settings.

972 00:56:34.140 --> 00:56:37.560 Sometimes it is very difficult to distinguish

973 00:56:37.560 --> 00:56:39.480 the difference be between them.

974 00:56:39.480 --> 00:56:42.660 I tend to not to distinguish them, because different people

975 00:56:42.660 --> 00:56:45.420 have different ideas whether one off to use

976 00:56:45.420 --> 00:56:50.420 other hierarchical analysis for the intervention factor

977 00:56:51.180 --> 00:56:54.930 and the contextual factor, I can't answer that

978 00:56:54.930 --> 00:56:57.150 because I need more time to think about that.

979 00:56:57.150 --> 00:57:01.590 I don't yet have a clear answer to that yet,

980 00:57:01.590 --> 00:57:05.130 but I tend to think it may not be a hierarchical

981 00:57:05.130 --> 00:57:07.230 analytical question here.

982 00:57:07.230 --> 00:57:08.520 Thank you Pungfe.

983 00:57:08.520 --> 00:57:10.343 <v Pungfe>Yeah, thank you very much.</v>

984 00:57:14.131 --> 00:57:16.350 <v Maur>Great, I see a couple of other hands raised.</v>

985 00:57:16.350 --> 00:57:18.660 I think Gloria was next.

986 00:57:18.660 --> 00:57:20.070 <v Gloria>Yes.</v> <v Maur>Go ahead.</v>

987 00:57:20.070 --> 00:57:22.470 <v Gloria>Thank you very much Maur, thank you very much.</v>

988 00:57:22.470 --> 00:57:24.903 Very nice talk, I really enjoyed.

989 00:57:26.400 --> 00:57:29.670 You mentioned several techniques in order to choose

990 00:57:29.670 --> 00:57:32.708 the implementation strategies.

991 00:57:32.708 --> 00:57:34.260 And this is, you know very complex issue

992 00:57:34.260 --> 00:57:38.457 because you have a lot of implementation strategies

993 00:57:38.457 --> 00:57:42.763 that how to use them in the context or with the problem

994 00:57:42.763 --> 00:57:45.393 that you have and how to choose them, right?

995 00:57:45.393 --> 00:57:49.050 Is a like a real point in implementation process.

996 00:57:49.050 --> 00:57:51.063 Can you please elaborate on that?

997 00:57:52.023 --> 00:57:52.856 Thank you.

998 00:57:54.990 --> 00:57:59.990 <v Roman>I have some challenges of understand the question.</v>

999 00:58:00.339 --> 00:58:03.540 Maur, can you paraphrase the question?

1000 00:58:03.540 --> 00:58:04.452 <v Gloria>Yeah.</v>

1001 00:58:04.452 --> 00:58:06.990 So basically, you know, you mentioned that you use

1002 00:58:06.990 --> 00:58:11.990 several techniques to choose the implementation strategies.

1003 00:58:12.120 --> 00:58:15.810 So can you please elaborate on those techniques

1004 00:58:15.810 --> 00:58:17.940 or methods that you use to choose

1005 00:58:17.940 --> 00:58:19.530 the implementation strategies?

1006 00:58:19.530 --> 00:58:20.891 <v Roman>Oh, okay.</v>

1007 00:58:20.891 --> 00:58:22.020 Okay, thank you.

1008 00:58:22.020 --> 00:58:23.460 Thank you, sorry for that.

1009 00:58:23.460 --> 00:58:25.200 <v Gloria>That's okay, thank you.</v>

1010 00:58:25.200 --> 00:58:29.790 <v Roman>Yeah, there are many implementation,</v>

1011 00:58:29.790 --> 00:58:34.472 there are many methods which can be used to map

1012 00:58:34.472 --> 00:58:38.070 your strategies to barriers.

1013 00:58:38.070 --> 00:58:43.070 I would say the simplest strategy is not one of those four.

1014 00:58:44.040 --> 00:58:48.213 The simplest strategy is simply stakeholder consensus.

1015 00:58:49.650 --> 00:58:54.259 For many time, if people do not have a higher level of

1016 00:58:54.259 --> 00:58:59.259 methods, you can simply have a group consensus

1017 00:59:00.360 --> 00:59:05.360 to be achieved through a Delphi process or a nominal group

1018 00:59:06.120 --> 00:59:07.950 process.

1019 00:59:07.950 --> 00:59:12.950 There are many simple way of achieving stakeholder

1020 00:59:13.200 --> 00:59:17.820 consensus on what type of implementation techniques,

1021 00:59:17.820 --> 00:59:20.820 which you can select from the ERIC framework

1022 00:59:20.820 --> 00:59:24.480 to match each of the barriers you have identified,

1023 00:59:24.480 --> 00:59:28.470 but the four methods here listed on this slide

1024 00:59:28.470 --> 00:59:33.270 are more methods driven and I have never used

1025 00:59:33.270 --> 00:59:36.527 a concept mapping group model building

1026 00:59:36.527 --> 00:59:39.253 and intervention mapping, but we have used

1027 00:59:39.253 --> 00:59:42.930 a conjoint analysis in a way to use difficult

1028 00:59:42.930 --> 00:59:44.550 choice experiments.

1029 00:59:44.550 --> 00:59:47.940 So as I've discussed earlier, which is the sort of

1030 00:59:47.940 --> 00:59:51.270 the questionnaire you have developed (indistinct).

1031 00:59:51.270 --> 00:59:54.930 So you present those products, each product consists

1032 00:59:54.930 --> 00:59:59.160 of different attributes of your implementation strategy.

1033 00:59:59.160 --> 01:00:02.760 So you'll present those products side by side

1034 01:00:02.760 --> 01:00:04.140 to your stakeholders.

1035 01:00:04.140 --> 01:00:07.620 They make a choice out of the two, but you have

1036 01:00:07.620 --> 01:00:08.610 many of them.

1037 01:00:08.610 --> 01:00:11.760 So once they have complete data, all of the choices,

1038 01:00:11.760 --> 01:00:14.250 then you can perform a logistical regression

1039 01:00:14.250 --> 01:00:18.960 and other statistical methods to really evaluate

1040 01:00:18.960 --> 01:00:23.960 and quantify the value of those individual attributes.

1041 01:00:24.000 --> 01:00:27.420 So then you can choose the attributes with the highest

1042 01:00:27.420 --> 01:00:32.081 valuation and package them into the packaging

1043 01:00:32.081 --> 01:00:35.760 of your implementation strategy, I hope this helps a bit.

1044 01:00:35.760 --> 01:00:37.763 <v Gloria>A lot if you, thank you.</v>

1045 01:00:37.763 --> 01:00:40.098 <v Roman>There are lots of literature.</v>

1046 01:00:40.098 --> 01:00:45.098 I'm using DCE in health economics and health service

1047 01:00:45.690 --> 01:00:48.270 literature, it is not really a very difficult method

1048 01:00:48.270 --> 01:00:53.270 to understand, so I can send out some of the literature

1049 01:00:54.954 --> 01:00:56.210 as well.

1050 01:00:56.210 --> 01:00:57.792 <v Maur>Okay, you thank you very much.</v>

1051 01:00:57.792 --> 01:01:00.032 <v Roman>Thank you. (indistinct)</v>

1052 01:01:00.032 --> 01:01:02.090 <v Maur>Roman, thank you.</v>

1053 01:01:02.090 --> 01:01:05.220 I know it's very late where you're now in China,

1054 01:01:05.220 --> 01:01:08.100 but we have one last question if you wouldn't mind.

1055 01:01:08.100 --> 01:01:10.050 Mariana, go ahead.

1056 01:01:10.050 --> 01:01:12.570 <v Mariana>Yes, thank you so much for these great talk.</v>

1057 01:01:12.570 --> 01:01:15.360 Mariano Kaori from the University of Miami Miller

1058 01:01:15.360 --> 01:01:16.310 School of Medicine.

1059 01:01:17.732 --> 01:01:18.990 I just have a quick question.

1060 01:01:18.990 --> 01:01:22.920 Can you implement this very comprehensive study

1061 01:01:22.920 --> 01:01:24.093 in five years?

1062 01:01:26.400 --> 01:01:28.250 <v Roman>Ah, that's a good question.</v>

1063 01:01:29.880 --> 01:01:34.880 That's our hope in five years, but let me share the story.

1064 01:01:36.000 --> 01:01:40.690 I used to do a study using texting as a reminder

1065 01:01:42.150 --> 01:01:45.660 for people with schizophrenia in the rural Chinese

1066 01:01:45.660 --> 01:01:47.523 village to take medication.

1067 01:01:48.856 --> 01:01:51.990 The implementation is for six months and we thought

1068 01:01:51.990 --> 01:01:55.173 we are going to have that done simply within eight months,

1069 01:01:56.083 --> 01:01:57.660 but it takes us three years.

1070 01:01:57.660 --> 01:02:01.950 So implementation of those trials always take longer

1071 01:02:01.950 --> 01:02:06.950 than we thought, but I have to say we are exactly trying

1072 01:02:08.160 --> 01:02:11.253 to do this within four years time.

1073 01:02:12.390 --> 01:02:17.390 But with, I think one of the element is the pandemic.

1074 01:02:18.662 --> 01:02:23.185 A (indistinct) know China is fortunate in a way.

1075 01:02:23.185 --> 01:02:26.528 We are not very much affected by the pandemic

1076 01:02:26.528 --> 01:02:28.110 for the past two years.

1077 01:02:28.110 --> 01:02:31.032 Our life here in China is essentially normal

1078 01:02:31.032 --> 01:02:32.370 for majority of the people, so we are able to done

1079 01:02:32.370 --> 01:02:33.840 a lot of the field work.

1080 01:02:33.840 --> 01:02:38.840 But now with the omicron all the other part of the world

1081 01:02:38.940 --> 01:02:42.021 are opening up, China has some challenges.

1082 01:02:42.021 --> 01:02:44.175 So we don't know whether in the future years

1083 01:02:44.175 --> 01:02:45.803 whether this will be playing a part,

1084 01:02:45.803 --> 01:02:48.270 but even without pandemic, sometimes it's difficult

1085 01:02:48.270 --> 01:02:49.980 to get the implementation done.

1086 01:02:49.980 --> 01:02:54.980 However, what I have to say is we have develop it

1087 01:02:55.350 --> 01:03:00.060 and really excellent consortium of collaborators in China.

1088 01:03:00.060 --> 01:03:03.030 We have 12 research teams in China.

1089 01:03:03.030 --> 01:03:05.250 We have always been working together

1090 01:03:05.250 --> 01:03:08.670 and many of the health service and implementation research,

1091 01:03:08.670 --> 01:03:11.610 even without any grant support, our teams are

1092 01:03:11.610 --> 01:03:14.880 working together, so we know each other extremely well.

1093 01:03:14.880 --> 01:03:18.000 So when we are doing those multi-site trial,

1094 01:03:18.000 --> 01:03:21.933 it's almost much easier now to set up your team,

1095 01:03:24.243 --> 01:03:26.690 because it's communication is a simple and how to divide up

1096 01:03:26.690 --> 01:03:29.250 your work is already established and how to share

1097 01:03:29.250 --> 01:03:33.810 your intellectual property is prior grade upon

1098 01:03:33.810 --> 01:03:36.300 and how to mobilize your resources and what are

1099 01:03:36.300 --> 01:03:40.830 the statistical data management platform,

1100 01:03:40.830 --> 01:03:43.800 all this has already been been constructed

1101 01:03:43.800 --> 01:03:45.330 in our prior studies.

1102 01:03:45.330 --> 01:03:48.990 So very easy for us to conduct multi-site study in China

1103 01:03:48.990 --> 01:03:52.530 because of our existing work of the Acacia Labs

1104 01:03:52.530 --> 01:03:55.008 with those a dozen research teams always

1105 01:03:55.008 --> 01:03:56.670 be working together.

1106 01:03:56.670 --> 01:04:00.690 We also have very strong support from the clinical centers,

1107 01:04:00.690 --> 01:04:03.600 because we work with some of the clinical centers

1108 01:04:03.600 --> 01:04:06.520 in many other ways, so we get to know them much better

1109 01:04:07.595 --> 01:04:10.290 and we can get a support from them as well.

1110 01:04:10.290 --> 01:04:12.660 So hopefully we can get this done within four years.

1111 01:04:12.660 --> 01:04:15.840 But I have to say things happens, it may get longer

1112 01:04:15.840 --> 01:04:17.493 than we thought, thank you.

1113 01:04:21.817 --> 01:04:22.870 <v Maur>Great.</v>

1114 01:04:22.870 --> 01:04:24.438 Great, well thank you again.

1115 01:04:24.438 --> 01:04:28.020 I don't wanna cut off the discussion and the comments,

1116 01:04:28.020 --> 01:04:29.770 but I know it's getting late there.

1117 01:04:31.080 --> 01:04:35.220 If there are no other questions, I'll just end by thanking

1118 01:04:35.220 --> 01:04:36.990 you again, Roman, for being with us today,

1119 01:04:36.990 --> 01:04:41.130 it was a fantastic presentation, really enjoyed it

1120 01:04:41.130 --> 01:04:44.724 and learned a lot as I know everybody else did on the call.

1121 01:04:44.724 --> 01:04:46.710 So thanks so much for being with us

1122 01:04:46.710 --> 01:04:51.710 and see you all again soon, thanks everyone.

1123 01:04:52.140 --> 01:04:54.132 <v Roman>Thank you, bye-Bye</v>

1124 01:04:54.132 --> 01:04:55.098 <v Donna>bye.</v>

1125 01:04:55.098 --> 01:04:57.319 <v Roman>Thank you, bye-Bye, bye-Bye.</v>

1126 01:04:57.319 --> 01:04:58.152 <v Maur>Bye everyone.</v>