WEBVTT

1 00:00:00.170 --> 00:00:03.050 <v ->Welcome everyone, I'm Robert Dubrow.</v>

2 00:00:03.050 --> 00:00:05.670 I'm a professor of Epidemiology

3 00:00:05.670 --> 00:00:09.310 and also the Faculty Director of the Yale Center

4 00:00:09.310 --> 00:00:10.750 on Climate Change and Health

5 00:00:10.750 --> 00:00:13.150 at the Yale School of Public Health.

6 00:00:13.150 --> 00:00:18.150 And welcome to this Yale Lancet Countdown launch event.

7 00:00:19.100 --> 00:00:22.370 So the Lancet Countdown on Health and Climate Change

8 00:00:22.370 --> 00:00:24.640 is an international collaboration

9 00:00:24.640 --> 00:00:27.280 that's been monitoring the health consequences

10 00:00:27.280 --> 00:00:30.350 of climate change through an annual report

11 00:00:30.350 --> 00:00:31.320 that's been published

12 00:00:31.320 --> 00:00:35.910 in the medical journal, The Lancet since 2015.

13 00:00:35.910 --> 00:00:37.980 The collaboration includes researchers

14 00:00:37.980 --> 00:00:42.980 from 43 academic institutions and UN agencies.

15 00:00:43.600 --> 00:00:45.030 And researchers from Yale

16 00:00:45.030 --> 00:00:47.963 have been part of the collaborations since 2019.

17 00:00:49.730 --> 00:00:52.600 The 2021 report was published

18 00:00:52.600 --> 00:00:55.730 in the Lancet this year on October 20th

19 00:00:56.660 --> 00:00:57.540 and that was followed

20 00:00:57.540 --> 00:01:00.700 by a Global Launch Event the following day,

21 00:01:00.700 --> 00:01:03.020 but subsequently there've also been

22 00:01:03.020 --> 00:01:05.410 regional launch events around the world.

23 00:01:05.410 --> 00:01:07.603 And this is one of those regional events.

24 00:01:08.960 --> 00:01:12.430 Given the COP26, that was just completed,

25 00:01:12.430 --> 00:01:16.080 the 2021 report which is organized around

26 00:01:16.080 --> 00:01:21.080 five domains and 44 indicators was particularly timely

27 00:01:21.220 --> 00:01:25.500 in framing the climate crisis as a public health crisis.

28 00:01:25.500 --> 00:01:30.500 So today we're gonna have five speakers

29 00:01:32.120 --> 00:01:34.240 and I'm gonna introduce them now

30 00:01:34.240 --> 00:01:36.770 and let you know what they'll talk about.

31 00:01:36.770 --> 00:01:39.770 So the first speaker is, Marina Romanello,

32 00:01:39.770 --> 00:01:43.090 who's the Research Director at the Lancet Countdown

33 00:01:43.090 --> 00:01:46.560 and the first author of the 2021 Report.

34 00:01:46.560 --> 00:01:49.400 And she's gonna give an overview and highlights

35 00:01:49.400 --> 00:01:50.993 of the Global Report.

36 00:01:51.980 --> 00:01:56.270 Then Dr. Jodi Sherman, who is a professor here at Yale,

37 00:01:56.270 --> 00:02:00.053 of both Anesthesiology and Environmental Health Sciences,

38 00:02:00.890 --> 00:02:03.070 and also the director of the Yale Program

39 00:02:03.070 --> 00:02:05.550 on Healthcare, Environmental Sustainability

40 00:02:05.550 --> 00:02:07.550 will talk about one of the indicators

41 00:02:08.720 --> 00:02:10.993 which is Healthcare Sector Emissions.

42 00:02:12.010 --> 00:02:15.470 Then I'm gonna talk about another indicator,

43 00:02:15.470 --> 00:02:18.880 which is air conditioning, benefits and harms.

44 00:02:18.880 --> 00:02:20.890 Yes sir, it's interesting Jeremy

45 00:02:20.890 --> 00:02:23.610 is a professor in the Department of Environmental

46 00:02:23.610 --> 00:02:25.220 and Occupational Health Sciences,

47 00:02:25.220 --> 00:02:28.050 Global Health and Emergency Medicine.

48 00:02:28.050 --> 00:02:30.940 And he's also the Director of the Center for Health

49 00:02:30.940 --> 00:02:34.230 and the Global Environment at the University of Washington.

50 00:02:34.230 --> 00:02:36.920 And he's gonna give an overview and highlights

51 00:02:36.920 --> 00:02:40.370 of the Lancet Countdown U.S. Policy Brief,

52 00:02:40.370 --> 00:02:44.250 which was a very important ancillary report

53 00:02:44.250 --> 00:02:47.360 that was done in conjunction with the Global Report.

54 00:02:47.360 --> 00:02:49.810 And then finally, Dr. Laura Bozzi,

55 00:02:49.810 --> 00:02:51.570 who's the Director of Programs

56 00:02:51.570 --> 00:02:53.960 at the Yale Center on Climate Change and Health

57 00:02:53.960 --> 00:02:57.140 will give an overview and highlights of

58 00:02:57.140 --> 00:02:58.900 a report that our center did

59 00:02:58.900 --> 00:03:02.160 on Climate Change and Health in Connecticut 2020 Report

60 00:03:02.160 --> 00:03:05.200 that was not associated with the Lancet Countdown,

61 00:03:05.200 --> 00:03:09.150 but nevertheless used it as a model in terms

62 00:03:09.150 --> 00:03:12.490 of organizing the report around the indicators.

63 00:03:12.490 --> 00:03:17.490 So without further ado, let me turn it over to Marina.

64 00:03:19.760 --> 00:03:20.910 Let's see (indistinct).

65 00:03:24.010 --> 00:03:27.020 <v ->Thank you Rob, thank you so much.</v>

66 00:03:27.020 --> 00:03:29.943 Let me see if I can share screen.

67 00:03:31.250 --> 00:03:33.917 Can you see my performance screen there?

68 00:03:36.197 --> 00:03:39.070 <v All>Yes.</v>

69 00:03:39.070 --> 00:03:43.910 <v ->Awesome, so I'm gonna try</v>

70 00:03:43.910 --> 00:03:46.170 to give you a very brief overview

71 00:03:46.170 --> 00:03:48.740 of the report and (mumbles)

72 00:03:48.740 --> 00:03:50.100 what the Lancet Countdown means

73 00:03:50.100 --> 00:03:51.230 but first of all,

74 00:03:51.230 --> 00:03:55.020 I really wanted to thank Yale for hosting this event.

75 00:03:55.020 --> 00:03:59.646 As Rob said, Yale is one of our key partners

76 00:03:59.646 --> 00:04:02.743 (mumbles) says it's really an honor to be here with you.

77 00:04:03.970 --> 00:04:06.808 So we are 43 partners around the world.

78 00:04:06.808 --> 00:04:07.926 The Lancet Countdown is patients

79 00:04:07.926 --> 00:04:09.800 and UN agencies around the world.

80 00:04:09.800 --> 00:04:10.800 And as Rob just said,

81 00:04:10.800 --> 00:04:13.020 we produce indicators tracking progress

82 00:04:13.020 --> 00:04:15.450 on health and climate change across impacts

83 00:04:15.450 --> 00:04:18.527 and what their response to climate change means for health

84 00:04:18.527 --> 00:04:20.267 and the data is published every year

85 00:04:20.267 --> 00:04:22.230 in a medical journal, The Lancet.

86 00:04:22.230 --> 00:04:26.730 The report that you see last year is the latest report

87 00:04:26.730 --> 00:04:28.470 that is labeled a code red for health.

88 00:04:28.470 --> 00:04:29.980 So I'm gonna tell you a bit about why that is,

89 00:04:29.980 --> 00:04:32.890 but this is just the latest of the series

90 00:04:32.890 --> 00:04:34.710 of the Lancet Countdowns Reports

91 00:04:35.860 --> 00:04:38.390 with our 5th year of iterations

92 00:04:38.390 --> 00:04:41.333 of this tracking and monitoring exercise.

93 00:04:42.650 --> 00:04:45.000 So I'll report to say that

94 00:04:45.000 --> 00:04:48.030 it's entitled a code red for a healthy future.

95 00:04:48.030 --> 00:04:51.640 And this is because across all of the indicators,

96 00:04:51.640 --> 00:04:54.330 we're tracking the impacts of climate change on health.

97 00:04:54.330 --> 00:04:56.800 We're seeing trends rapidly worsening

98 00:04:56.800 --> 00:04:58.950 and affecting particularly the most vulnerable

99 00:04:58.950 --> 00:05:03.330 in every society in every country exacerbating in this way,

100 00:05:03.330 --> 00:05:06.246 the inequities around the world.

101 00:05:06.246 --> 00:05:07.450 When we think about climate change

102 00:05:07.450 --> 00:05:08.720 the first thing that comes to mind

103 00:05:08.720 --> 00:05:11.360 is increase of heat waves, increased temperatures.

104 00:05:11.360 --> 00:05:13.350 And we're seeing that the very vulnerable population,

105 00:05:13.350 --> 00:05:16.890 people over 65 years of age are increasingly being exposed

106 00:05:16.890 --> 00:05:19.333 to life-threatening heat waves.

107 00:05:20.715 --> 00:05:22.150 (mumbles) silent killers

108 00:05:22.150 --> 00:05:24.050 they're more than just uncomfortable

109 00:05:24.050 --> 00:05:25.450 and we're seeing very vulnerable groups

110 00:05:25.450 --> 00:05:26.460 increasingly affected.

111 00:05:26.460 --> 00:05:29.620 As you can see here mainly starting the year 2010,

112 00:05:29.620 --> 00:05:32.313 really rapid increase in exposure to heat waves.

113 00:05:33.660 --> 00:05:37.410 And heat waves not only affect our health directly

114 00:05:38.310 --> 00:05:40.610 in terms of morbidity or mortality,

115 00:05:40.610 --> 00:05:42.247 but they also affect our health indirectly

116 00:05:42.247 --> 00:05:44.540 by undermining our capacity to work.

117 00:05:44.540 --> 00:05:46.900 We also monitor the extent to which heat exposure

118 00:05:46.900 --> 00:05:49.250 is reducing our labor capacity

119 00:05:49.250 --> 00:05:51.350 particularly in the agricultural sector

120 00:05:51.350 --> 00:05:54.040 we're seeing big impacts in terms of hours of labor loss

121 00:05:54.040 --> 00:05:56.030 in countries that are very vulnerable,

122 00:05:56.030 --> 00:05:58.270 the low Human Development Index country group

123 00:05:58.270 --> 00:06:00.832 and the medium Human Developments in this country group

124 00:06:00.832 --> 00:06:02.433 seeing particularly big losses.

125 00:06:02.433 --> 00:06:04.545 Especially in the agricultural sectors

126 00:06:04.545 --> 00:06:05.897 we estimate that the losses

127 00:06:05.897 --> 00:06:08.110 in the low Human Developments Index country group

128 00:06:08.110 --> 00:06:11.120 amount to 4-8% of the total GDP of those countries

129 00:06:11.120 --> 00:06:13.190 being lost due to heat exposure.

130 00:06:13.190 --> 00:06:16.020 So social determinants of health also being put at risk

131 00:06:16.020 --> 00:06:18.910 and obviously increase heat-related mortality.

132 00:06:18.910 --> 00:06:22.385 We've seen the heat waves this year in Canada,

133 00:06:22.385 --> 00:06:25.010 in (mumbles) Kazakhstan.

134 00:06:27.600 --> 00:06:30.030 And here's for sure is increasing

135 00:06:30.030 --> 00:06:32.850 as is heat-related mortality as well.

136 00:06:32.850 --> 00:06:35.040 On increased heat and increased temperatures,

137 00:06:35.040 --> 00:06:37.130 our capacity to grow crops is also reducing.

138 00:06:37.130 --> 00:06:39.920 So we're seeing crop (indistinct)

139 00:06:40.840 --> 00:06:43.520 reducing across all major staple crops,

140 00:06:43.520 --> 00:06:47.060 anywhere from three to 6% of reduction

141 00:06:47.060 --> 00:06:49.960 of crop yield potential of the 1950s baseline,

142 00:06:49.960 --> 00:06:54.080 which is even getting exacerbated by the increased land area

143 00:06:54.080 --> 00:06:56.560 being affected by extreme drought.

144 00:06:56.560 --> 00:06:57.954 The percentage of land area

145 00:06:57.954 --> 00:07:00.430 affected by extreme drought exposure

146 00:07:00.430 --> 00:07:04.652 risk about 20% of record in 2019.

147 00:07:04.652 --> 00:07:06.340 And with dry weather, hot weather

148 00:07:06.340 --> 00:07:09.217 also coming in with incidents of wildfires in the U.S.

149 00:07:09.217 --> 00:07:12.619 who have been suffering a horrendous wildfire seasons

150 00:07:12.619 --> 00:07:13.758 as a result of climate change,

151 00:07:13.758 --> 00:07:15.810 much of which we have detection attribution study

152 00:07:15.810 --> 00:07:19.140 that bring down the cause to climate change.

153 00:07:19.140 --> 00:07:21.600 As temperatures change, precipitations patterns change

154 00:07:21.600 --> 00:07:22.803 and humidity changes.

155 00:07:23.700 --> 00:07:26.160 So to does the environmental suitability

156 00:07:26.160 --> 00:07:28.416 for the transmission of infectious diseases.

157 00:07:28.416 --> 00:07:29.800 And we're seeing particular increases

158 00:07:29.800 --> 00:07:33.280 in the suitability for transmission of dengue, of malaria,

159 00:07:33.280 --> 00:07:35.354 of vibrio pathogen and vibrio cholerae

160 00:07:35.354 --> 00:07:38.029 and other vibrio bacteria as well all around the world,

161 00:07:38.029 --> 00:07:39.067 particular vibrio bacteria

162 00:07:39.067 --> 00:07:43.460 in the Pacific, North Eastern Atlantic, North-east as well.

163 00:07:44.550 --> 00:07:46.750 So all of our indicators are flashing red,

164 00:07:46.750 --> 00:07:48.420 really raising an alarm

165 00:07:48.420 --> 00:07:52.190 to the health risks of climate change,

166 00:07:52.190 --> 00:07:54.850 but perhaps the most concerning thing is that

167 00:07:54.850 --> 00:07:58.480 not only climate change is exacerbating health impacts,

168 00:07:58.480 --> 00:08:00.100 particularly on the most vulnerable,

169 00:08:00.100 --> 00:08:01.570 but our response to climate change

170 00:08:01.570 --> 00:08:04.410 is also increasing the inequities camp.

171 00:08:04.410 --> 00:08:06.140 Also we have failed to deliver

172 00:08:06.140 --> 00:08:07.970 adjust response to COVID-19,

173 00:08:07.970 --> 00:08:12.640 we're seeing an unjust response to climate change.

174 00:08:12.640 --> 00:08:14.030 The main thing that we need to do

175 00:08:14.030 --> 00:08:16.510 in order to reduce the impacts of climate changes

176 00:08:16.510 --> 00:08:20.300 obviously to quickly adapt and decarbonize.

177 00:08:20.300 --> 00:08:21.133 And when we talk about

178 00:08:21.133 --> 00:08:23.370 climate change mitigation, decarbonization,

179 00:08:23.370 --> 00:08:24.880 the energy system is the center (indistinct),

180 00:08:24.880 --> 00:08:28.490 it is the main contributor to greenhouse gas emissions.

181 00:08:28.490 --> 00:08:31.800 As you can see in this black line,

182 00:08:31.800 --> 00:08:35.350 the carbon intensity of the global energy system,

183 00:08:35.350 --> 00:08:39.670 that is the amount of carbon dioxide produced

184 00:08:39.670 --> 00:08:41.760 per unit of energy generated,

185 00:08:41.760 --> 00:08:44.557 has not changed practically since the '70s.

186 00:08:44.557 --> 00:08:46.450 And at the pace of slow reduction

187 00:08:46.450 --> 00:08:48.740 that we've seen from 2014 to 2018,

188 00:08:48.740 --> 00:08:50.770 it would take us roughly 150 years

189 00:08:50.770 --> 00:08:53.560 to fully decarbonize our energy systems.

190 00:08:53.560 --> 00:08:55.660 The other thing that is notable here is that

191 00:08:55.660 --> 00:08:57.960 it is the high Human Development Index countries,

192 00:08:57.960 --> 00:09:00.230 the ones that are adopting technologies to decarbonize

193 00:09:00.230 --> 00:09:02.101 and to benefit from the health permanently

194 00:09:02.101 --> 00:09:03.533 to perverse decarbonization

195 00:09:03.533 --> 00:09:05.730 whereas the high Human Development Index

196 00:09:05.730 --> 00:09:08.030 and the medium Human Development Index country groups

197 00:09:08.030 --> 00:09:10.800 are still growing at a carbon intensive way,

198 00:09:10.800 --> 00:09:13.150 not benefiting from a low carbon transition.

199 00:09:13.150 --> 00:09:15.070 And the low Human Development Index country groups

200 00:09:15.070 --> 00:09:18.790 still has to do that development

201 00:09:18.790 --> 00:09:21.560 and industrialization there.

202 00:09:21.560 --> 00:09:23.390 And what this mean for health

203 00:09:23.390 --> 00:09:26.780 is that exposure to air pollution is still incredibly high.

204 00:09:26.780 --> 00:09:28.530 We have not managed to reduce exposure

205 00:09:28.530 --> 00:09:31.970 to air pollution since 2015 significantly.

206 00:09:31.970 --> 00:09:34.870 In 2019, we saw roughly 3 million deaths

207 00:09:34.870 --> 00:09:37.840 attributed to ambient PM2.5 air pollution

208 00:09:37.840 --> 00:09:40.400 the most harmful form of air pollution

209 00:09:40.400 --> 00:09:42.353 and 1/3 that came from fossil fuels.

210 00:09:43.439 --> 00:09:44.540 And as we can see here,

211 00:09:44.540 --> 00:09:47.361 this is disproportionately affecting

212 00:09:47.361 --> 00:09:52.361 the high and medium Human Development Index country groups

213 00:09:52.450 --> 00:09:54.740 that are very carbon intensive,

214 00:09:54.740 --> 00:09:56.570 but the low Human Development country groups

215 00:09:56.570 --> 00:09:57.940 is being particularly affected

216 00:09:57.940 --> 00:09:59.700 by indoor exposure to air pollution,

217 00:09:59.700 --> 00:10:02.450 to the use of dirty fuels for cooking and for heating.

218 00:10:02.450 --> 00:10:04.810 So also big inequities in the transition

219 00:10:04.810 --> 00:10:06.283 to a cleaner source of fuels.

220 00:10:07.560 --> 00:10:09.380 However, there is still some hope

221 00:10:09.380 --> 00:10:10.280 that comes from our reports

222 00:10:10.280 --> 00:10:11.823 and that's really worthwhile noting.

223 00:10:11.823 --> 00:10:14.150 When we talk again about energy system,

224 00:10:14.150 --> 00:10:15.550 while we're still lagging behind,

225 00:10:15.550 --> 00:10:17.450 we are seeing a very fast adoption

226 00:10:17.450 --> 00:10:19.040 increase in the use of renewable,

227 00:10:19.040 --> 00:10:21.910 clean, new, renewable energies for energy production,

228 00:10:21.910 --> 00:10:24.470 particularly in the U.S. and in China,

229 00:10:24.470 --> 00:10:26.660 the biggest contributors to greenhouse gas emissions,

230 00:10:26.660 --> 00:10:28.440 which is really positive.

231 00:10:28.440 --> 00:10:30.850 Total energy produced from clean sources

232 00:10:30.850 --> 00:10:34.260 has reached 7.2% in 2018, and this is still growing.

233 00:10:34.260 --> 00:10:35.890 So we do have the technology.

234 00:10:35.890 --> 00:10:37.860 And one other thing that is really worth noting

235 00:10:37.860 --> 00:10:42.090 is that the health sector that is crucial in protecting

236 00:10:42.090 --> 00:10:44.730 our health from climate change and we acknowledged that

237 00:10:44.730 --> 00:10:46.350 a climate change is a health crisis.

238 00:10:46.350 --> 00:10:47.640 They must be at the forefront

239 00:10:47.640 --> 00:10:50.610 of the fight against climate change.

240 00:10:50.610 --> 00:10:52.450 Health sector is now taking the lead

241 00:10:52.450 --> 00:10:56.130 and we've seen many commitments made during COVID

242 00:10:56.130 --> 00:10:59.120 of national health systems that have committed

243 00:10:59.120 --> 00:11:01.320 to reaching net zero by 2050,

244 00:11:01.320 --> 00:11:02.843 and over 50 health systems around the world

245 00:11:02.843 --> 00:11:04.880 committing to become more sustainable

246 00:11:04.880 --> 00:11:07.843 and more resilient to climate change.

247 00:11:09.860 --> 00:11:11.950 So just to finish off,

248 00:11:11.950 --> 00:11:14.260 I find a reflection that comes from our report,

249 00:11:14.260 --> 00:11:17.080 but also from what happened at COP26,

250 00:11:17.080 --> 00:11:20.890 we're currently exiting the COVID-19 pandemic.

251 00:11:20.890 --> 00:11:22.210 And as the world tries to recover

252 00:11:22.210 --> 00:11:24.860 around rolling trillions of funds

253 00:11:24.860 --> 00:11:28.410 towards economic reactivation and reframing.

254 00:11:28.410 --> 00:11:32.400 However, so far we see that only 18% of those trillion,

255 00:11:32.400 --> 00:11:35.940 almost $2 trillion allocated to COVID recovery

256 00:11:35.940 --> 00:11:40.240 would lead to reduction in greenhouse gas emissions.

257 00:11:40.240 --> 00:11:44.320 All the rest will have negative effects on climate change.

258 00:11:44.320 --> 00:11:47.100 So we're here at five or 10 points where we have to decide

259 00:11:47.100 --> 00:11:49.670 whether we're gonna go through a carbon intensive route

260 00:11:49.670 --> 00:11:51.360 that will lead us to a new crisis.

261 00:11:51.360 --> 00:11:53.767 A crisis of climate change impacts on health,

262 00:11:53.767 --> 00:11:56.214 and that will undermine our progress against the targets

263 00:11:56.214 --> 00:11:57.319 that we (mumbles) nationally

264 00:11:57.319 --> 00:11:58.940 determined contributions,

265 00:11:58.940 --> 00:12:01.240 or whether the world will act together

266 00:12:01.240 --> 00:12:03.930 to deliver adjust transition and make use of this moment

267 00:12:03.930 --> 00:12:08.710 to deliver a world of environmental sustainability,

268 00:12:08.710 --> 00:12:11.590 economic sustainability and growth,

269 00:12:11.590 --> 00:12:13.683 better health and reducing inequities.

270 00:12:14.870 --> 00:12:16.160 And with that, I will just close

271 00:12:16.160 --> 00:12:18.360 and invite you to visit lancetcountdown.org

272 00:12:18.360 --> 00:12:20.760 where you can explore a bit more of our indicators

273 00:12:20.760 --> 00:12:23.253 that I just gave you a very brief overview of.

274 00:12:25.500 --> 00:12:27.321 <v ->Thanks very much Marina.</v>

275 00:12:27.321 --> 00:12:28.780 <v ->(mumbles).</v>

276 00:12:28.780 --> 00:12:33.780 <v ->So next we'll have Dr. Jodi Sherman talking about</v>

277 00:12:33.830 --> 00:12:36.343 the indicator that she took the lead on.

278 00:12:39.000 --> 00:12:41.870 <v ->Thanks, can you hear me and see the screen okay?</v>

279 00:12:41.870 --> 00:12:43.084 <v All>Yes.</v>

280 00:12:43.084 --> 00:12:46.170 <v ->So my talk is going to focus</v>

281 00:12:46.170 --> 00:12:48.470 on the role of the healthcare sector,

282 00:12:48.470 --> 00:12:51.010 its contribution to climate change.

283 00:12:51.010 --> 00:12:53.700 Now, as Dr. Romanello was saying,

284 00:12:53.700 --> 00:12:56.640 we have increased demands for health services

285 00:12:56.640 --> 00:12:58.490 because of the problem,

286 00:12:58.490 --> 00:13:00.780 the myriad of health impacts of climate change,

287 00:13:00.780 --> 00:13:05.780 health care itself is ironically a significant contributor

288 00:13:05.810 --> 00:13:08.370 to global greenhouse gas emissions

289 00:13:08.370 --> 00:13:09.750 and non-greenhouse gas emissions.

290 00:13:09.750 --> 00:13:14.090 We've got a very high resource consumption industry,

291 00:13:14.090 --> 00:13:15.660 hospitals run 24/7,

292 00:13:15.660 --> 00:13:18.570 high-tech diagnostic therapeutic equipment,

293 00:13:18.570 --> 00:13:20.530 high energy intensive buildings.

294 00:13:20.530 --> 00:13:25.530 And health care is a unique risk for unique infection risks

295 00:13:25.810 --> 00:13:27.280 and prevention requirements

296 00:13:27.280 --> 00:13:29.020 that drive a lot of disposability

297 00:13:29.020 --> 00:13:30.380 and utilization of resource

298 00:13:31.240 --> 00:13:34.920 both in our energy as well as materials.

299 00:13:34.920 --> 00:13:38.520 We also live in a complex regulatory environment

300 00:13:39.420 --> 00:13:42.090 designed to protect our patients,

301 00:13:42.090 --> 00:13:44.520 patients and also occupational health,

302 00:13:44.520 --> 00:13:46.280 but we also have business models

303 00:13:46.280 --> 00:13:48.240 and that regulatory compliance and business models

304 00:13:48.240 --> 00:13:50.833 drive low volume consumption of resource.

305 00:13:51.700 --> 00:13:53.540 We also particularly in high-income nations

306 00:13:53.540 --> 00:13:55.720 and especially in the U.S. have the culture of excess

307 00:13:55.720 --> 00:13:57.813 and where disposability is normalized.

308 00:13:59.000 --> 00:14:01.580 And how can particularly, because we have a social mission

309 00:14:01.580 --> 00:14:03.870 to protect individual patients,

310 00:14:03.870 --> 00:14:05.320 we've really been neglecting about

311 00:14:05.320 --> 00:14:09.870 the impact of how care delivery affects public health

312 00:14:09.870 --> 00:14:12.040 and we can't really do that anymore.

313 00:14:12.040 --> 00:14:16.200 So the key results of the Lancet Countdown

314 00:14:16.200 --> 00:14:19.070 latest publication of 2021,

315 00:14:19.070 --> 00:14:21.890 globally health care emits 4.9%

316 00:14:21.890 --> 00:14:24.210 of total global greenhouse gas emissions.

317 00:14:24.210 --> 00:14:28.640 And this is rising at a rate of five to 6% annually.

318 00:14:28.640 --> 00:14:29.530 This is the most recent.

319 00:14:29.530 --> 00:14:30.880 There are several international studies.

320 00:14:30.880 --> 00:14:32.593 This is the most recent result.

321 00:14:33.660 --> 00:14:36.790 U.S. healthcare is an outlier and not in a good way.

322 00:14:36.790 --> 00:14:37.930 We spend twice as much

323 00:14:37.930 --> 00:14:40.590 on health care as any industrialized nation,

324 00:14:40.590 --> 00:14:44.860 18% of our GDP, health care globally is 10% of the economy.

325 00:14:44.860 --> 00:14:45.890 So if we can not want,

326 00:14:45.890 --> 00:14:49.050 should health care be leading as an industry

327 00:14:49.050 --> 00:14:52.630 and health care and all policies of protecting health,

328 00:14:52.630 --> 00:14:55.800 because we intersect with so many areas

329 00:14:55.800 --> 00:14:58.230 within the global economy,

330 00:14:58.230 --> 00:15:02.113 we have the opportunity to help drive change globally.

331 00:15:04.022 --> 00:15:07.500 Of that 4.9% emissions of health care in the U.S.

332 00:15:07.500 --> 00:15:11.720 is responsible for a 1/4 of those emissions globally,

333 00:15:11.720 --> 00:15:15.343 despite only having 4% of the global population.

334 00:15:16.970 --> 00:15:18.450 And we have the highest per capita

335 00:15:18.450 --> 00:15:21.060 health care greenhouse gas emissions.

336 00:15:21.060 --> 00:15:24.500 Now, if we have the best health outcomes for that impact,

337 00:15:24.500 --> 00:15:29.500 for those expenditures, there might be some justification,

338 00:15:29.830 --> 00:15:33.400 at least till we transition our energy sources

339 00:15:33.400 --> 00:15:38.400 and our embodied emissions but that's not really the case.

340 00:15:38.610 --> 00:15:41.280 So what we did is we associated

341 00:15:41.280 --> 00:15:44.050 per capita healthcare greenhouse gas emissions,

342 00:15:44.050 --> 00:15:45.740 along with the global burden of diseases,

343 00:15:45.740 --> 00:15:47.133 health care access, and quality index.

344 00:15:47.133 --> 00:15:50.050 This is from the 2020 paper of 2021.

345 00:15:50.050 --> 00:15:53.020 We did the same association with the Human Development Index

346 00:15:53.020 --> 00:15:54.690 and the results are the same.

347 00:15:54.690 --> 00:15:59.650 So we wanna have as low greenhouse gas emissions

348 00:15:59.650 --> 00:16:03.460 per health care capita as possible and as high performance

349 00:16:03.460 --> 00:16:05.660 in terms of health care, quality and access.

350 00:16:05.660 --> 00:16:07.190 And we can see the highest performers

351 00:16:07.190 --> 00:16:11.610 here in Europe particularly France is a notable outline

352 00:16:12.610 --> 00:16:14.880 performer in a good way versus the U.S.

353 00:16:14.880 --> 00:16:16.140 So not only do we have the highest

354 00:16:16.140 --> 00:16:19.200 per capita greenhouse gas emissions, we do not perform

355 00:16:19.200 --> 00:16:21.830 the best in terms of health care access and quality.

356 00:16:21.830 --> 00:16:24.930 And we're about 1700 kilograms of CO2

357 00:16:24.930 --> 00:16:27.740 equivalent emissions per capita for health care

358 00:16:28.680 --> 00:16:30.330 versus 450 in France.

359 00:16:30.330 --> 00:16:33.110 So 450 is around the break-even point.

360 00:16:33.110 --> 00:16:34.200 The good news is what that means

361 00:16:34.200 --> 00:16:35.470 is we can reduce our emissions

362 00:16:35.470 --> 00:16:37.970 without sacrificing quality of care.

363 00:16:37.970 --> 00:16:42.970 And in fact 11% of U.S. population is presently uninsured.

364 00:16:44.230 --> 00:16:46.300 About 1/3 of U.S. healthcare resources

365 00:16:46.300 --> 00:16:48.100 are deemed low value and inappropriate,

366 00:16:48.100 --> 00:16:50.220 it's about 1/4 globally.

367 00:16:50.220 --> 00:16:51.870 What that means is that we have room

368 00:16:51.870 --> 00:16:54.880 to improve our environmental performance

369 00:16:54.880 --> 00:16:57.180 without sacrificing quality of care

370 00:16:57.180 --> 00:17:01.560 and preserving resources to improve our access to care.

371 00:17:01.560 --> 00:17:03.160 I'm gonna shift gears

372 00:17:03.160 --> 00:17:06.260 in terms of where this information comes from.

373 00:17:06.260 --> 00:17:07.660 In order for us to understand

374 00:17:07.660 --> 00:17:10.350 where the levels of influence are,

375 00:17:10.350 --> 00:17:12.130 I'm gonna turn to the greenhouse gas protocol.

376 00:17:12.130 --> 00:17:13.120 This is from the U.K.

377 00:17:13.120 --> 00:17:15.640 National Health Service Net Zero report.

378 00:17:15.640 --> 00:17:17.110 The National Health Service in England

379 00:17:17.110 --> 00:17:18.810 is leading the world in its commitment

380 00:17:18.810 --> 00:17:21.460 to net zero emissions in health care.

381 00:17:21.460 --> 00:17:23.530 The virtue of the greenhouse gas protocol

382 00:17:23.530 --> 00:17:26.320 is it allows us to group emissions

383 00:17:26.320 --> 00:17:27.960 in terms of our influence

384 00:17:27.960 --> 00:17:30.090 so we understand the levels for change.

385 00:17:30.090 --> 00:17:32.624 So scope one, direct emissions are coming from a facility

386 00:17:32.624 --> 00:17:37.480 from burning fuel to heat the building for example,

387 00:17:37.480 --> 00:17:39.280 or release of inhaled anesthetic gases,

388 00:17:39.280 --> 00:17:42.460 so direct emissions on our scope one.

389 00:17:42.460 --> 00:17:44.850 Scope two is indirect coming from the supply chain.

390 00:17:44.850 --> 00:17:48.190 So whether or not, excuse me, is coming from electricity.

391 00:17:48.190 --> 00:17:51.000 So whether or not that is renewable or not

392 00:17:51.000 --> 00:17:53.270 affects our calculations.

393 00:17:53.270 --> 00:17:54.730 And scope three is everything else,

394 00:17:54.730 --> 00:17:58.090 most notably the supply chain and also travel.

395 00:17:58.090 --> 00:18:00.683 So applying that to the U.S. healthcare system,

396 00:18:01.700 --> 00:18:04.940 we see the most recent results

397 00:18:04.940 --> 00:18:08.390 are absolute emissions from health care in the U.S.,

398 00:18:08.390 --> 00:18:10.380 554 million metric tons

399 00:18:10.380 --> 00:18:13.100 or 8.5% of our nation's greenhouse gases

400 00:18:13.100 --> 00:18:16.060 coming just from U.S. healthcare.

401 00:18:16.060 --> 00:18:18.560 And emissions are on the rise.

402 00:18:18.560 --> 00:18:20.450 We see a slight difference in 2012

403 00:18:20.450 --> 00:18:24.740 with improvements of renewable energy in our system,

404 00:18:24.740 --> 00:18:28.210 but overall we're rising at a faster rate

405 00:18:29.230 --> 00:18:31.650 than other nations globally this far.

406 00:18:31.650 --> 00:18:33.540 And as you can see the breakdown by scopes,

407 00:18:33.540 --> 00:18:36.210 the vast majority of emissions are coming from scope three,

408 00:18:36.210 --> 00:18:37.970 which we'll come back to in a moment.

409 00:18:37.970 --> 00:18:39.390 The other thing that we did in the U.S.

410 00:18:39.390 --> 00:18:40.920 is we associated greenhouse gas

411 00:18:40.920 --> 00:18:43.570 and non-greenhouse gas emissions with disease burden

412 00:18:43.570 --> 00:18:46.360 and found that harm from health care pollution

413 00:18:46.360 --> 00:18:48.080 from U.S. healthcare pollution

414 00:18:48.080 --> 00:18:50.210 is equivalent to 388,000

415 00:18:50.210 --> 00:18:52.630 disability adjusted life years annually.

416 00:18:52.630 --> 00:18:56.500 Most of that is due to particulate matter or air pollution

417 00:18:56.500 --> 00:18:58.990 and both air pollution and greenhouse gas emissions

418 00:18:58.990 --> 00:19:00.690 come from combustion of fossil fuels.

419 00:19:00.690 --> 00:19:03.987 So cleaning up our energy system

420 00:19:03.987 --> 00:19:06.280 is one of the most important things we can do

421 00:19:06.280 --> 00:19:08.340 to reduce health care's impacts.

422 00:19:08.340 --> 00:19:10.460 And then this is similar in magnitude

423 00:19:10.460 --> 00:19:13.300 to deaths due to medical errors,

424 00:19:13.300 --> 00:19:15.900 which were first reported by this (mumbles) in 2000,

425 00:19:17.310 --> 00:19:20.390 the 44-98,000 deaths annually

426 00:19:20.390 --> 00:19:22.220 were lost due to medical errors,

427 00:19:22.220 --> 00:19:23.990 about 10 years of life loss for age

428 00:19:23.990 --> 00:19:25.140 so if you multiply by 10,

429 00:19:25.140 --> 00:19:26.910 you see we're in the same order of magnitude.

430 00:19:26.910 --> 00:19:28.530 And why that matters is that

431 00:19:28.530 --> 00:19:30.160 this harmful medical errors sparked

432 00:19:30.160 --> 00:19:31.450 the patient safety movement

433 00:19:31.450 --> 00:19:32.660 that everything we do in healthcare

434 00:19:32.660 --> 00:19:34.570 is through the lens of patient safety.

435 00:19:34.570 --> 00:19:36.440 And what we're trying to say is that this problem

436 00:19:36.440 --> 00:19:38.660 is just as big and just as serious,

437 00:19:38.660 --> 00:19:39.900 and that pollution prevention

438 00:19:39.900 --> 00:19:41.440 is a new patient safety movement

439 00:19:41.440 --> 00:19:43.370 that needs to be taken seriously.

440 00:19:43.370 --> 00:19:45.050 And so where those emissions come from

441 00:19:45.050 --> 00:19:47.450 in terms of levels of impact?

442 00:19:47.450 --> 00:19:48.910 About 4/5ths in the U.S.

443 00:19:48.910 --> 00:19:51.360 and this is similar in other health,

444 00:19:51.360 --> 00:19:52.750 this National Health (mumbles) Forfeits

445 00:19:52.750 --> 00:19:54.520 is coming from the supply chain.

446 00:19:54.520 --> 00:19:57.260 So notably, pharmaceuticals, chemicals,

447 00:19:57.260 --> 00:19:59.370 medical devices, and food.

448 00:19:59.370 --> 00:20:01.440 And these are things we have direct influence over

449 00:20:01.440 --> 00:20:03.810 as health care administrators and clinicians and regulators,

450 00:20:03.810 --> 00:20:07.060 because we determine how resources are consumed,

451 00:20:07.060 --> 00:20:10.240 manufacturers and regulators control what's embedded,

452 00:20:10.240 --> 00:20:12.080 what the emissions are that are embedded,

453 00:20:12.080 --> 00:20:13.530 what goes to marketplace.

454 00:20:13.530 --> 00:20:15.010 So this helps us to understand

455 00:20:15.010 --> 00:20:16.750 the different levels of influence.

456 00:20:16.750 --> 00:20:19.510 And ultimately the question is what is best practice

457 00:20:19.510 --> 00:20:22.140 both for patients and public health?

458 00:20:22.140 --> 00:20:25.440 And really there are three direct approaches

459 00:20:25.440 --> 00:20:28.920 to try and influence.

460 00:20:28.920 --> 00:20:31.680 One is reducing emissions embodied in healthcare service,

461 00:20:31.680 --> 00:20:33.610 so electrification of our buildings

462 00:20:33.610 --> 00:20:35.380 and our capital equipment,

463 00:20:35.380 --> 00:20:39.390 but they must be paired with cleaning up our energy sources.

464 00:20:39.390 --> 00:20:42.280 Moving to a circular economy we're using materials,

465 00:20:42.280 --> 00:20:44.070 reducing waste resource stewardship,

466 00:20:44.070 --> 00:20:47.300 which could not be more clearly needed

467 00:20:47.300 --> 00:20:49.803 as evidenced by the pandemic.

468 00:20:51.120 --> 00:20:52.460 Matching supply with the demand

469 00:20:52.460 --> 00:20:56.550 meaning we have to address inappropriate or low value care,

470 00:20:56.550 --> 00:21:00.040 care that is unwanted, unneeded, ineffective.

471 00:21:00.040 --> 00:21:03.240 All those things need to be addressed, and we can do it.

472 00:21:03.240 --> 00:21:04.450 And then reducing,

473 00:21:04.450 --> 00:21:06.370 moving all the way upstream to reducing

474 00:21:06.370 --> 00:21:07.930 the need for health care to begin with

475 00:21:07.930 --> 00:21:09.830 health promotion, disease prevention,

476 00:21:09.830 --> 00:21:11.930 addressing the social determinants of health,

477 00:21:11.930 --> 00:21:15.860 and certainly mitigating all those causes of climate change

478 00:21:15.860 --> 00:21:18.570 and ultimately value in health care, high values,

479 00:21:18.570 --> 00:21:22.210 maximizing the best benefits for patients and populations,

480 00:21:22.210 --> 00:21:25.370 minimizing costs as well as environmental and social harms.

481 00:21:25.370 --> 00:21:26.370 Thank you very much.

482 00:21:27.450 --> 00:21:28.363 <v ->Thanks, Jodi.</v>

483 00:21:40.190 --> 00:21:42.310 <v ->I think just share the screen.</v>

484 00:21:50.970 --> 00:21:54.250 <v ->Yes, everyone see?</v>

485 00:21:54.250 --> 00:21:55.270 Okay, great.

486 00:21:55.270 --> 00:21:58.420 So I'm gonna talk about indicator 2.3.2,

487 00:21:59.290 --> 00:22:02.360 which is air conditioning benefits and harms.

488 00:22:02.360 --> 00:22:04.390 I'd like to acknowledge my collaborator

489 00:22:04.390 --> 00:22:09.300 on this Lingzhi Chu and also the International Energy Agency

490 00:22:09.300 --> 00:22:11.090 for providing essential

491 00:22:11.090 --> 00:22:13.543 and published data for this indicator.

492 00:22:14.930 --> 00:22:17.330 And so let me get right to the headline finding.

493 00:22:18.650 --> 00:22:21.527 Use of air conditioning averted an estimated

494 00:22:21.527 --> 00:22:24.960 195,000 heat-related deaths

495 00:22:24.960 --> 00:22:29.960 among people 65 years or older in 2019, that's globally.

496 00:22:31.390 --> 00:22:36.140 AC however, AC also contributed to greenhouse gas emissions,

497 00:22:36.140 --> 00:22:39.130 air pollution, peak electricity demand,

498 00:22:39.130 --> 00:22:41.570 and urban heat islands.

499 00:22:41.570 --> 00:22:45.660 So we could see that on the one hand indoor cooling,

500 00:22:45.660 --> 00:22:47.730 you're represented by air conditioning

501 00:22:47.730 --> 00:22:50.290 provides great benefits.

502 00:22:50.290 --> 00:22:53.000 On the other hand there is significant harms.

503 00:22:53.000 --> 00:22:58.000 So I'll elaborate, but first let's look at this graph

504 00:22:58.300 --> 00:22:59.483 on the right-hand side.

505 00:23:00.740 --> 00:23:05.110 The blue is proportion of households with air conditioning.

506 00:23:05.110 --> 00:23:06.360 This is global.

507 00:23:06.360 --> 00:23:11.360 So you can see a steady rise and in 2019, it was about 33%.

508 00:23:12.610 --> 00:23:14.440 So a 1/3 of the households in the world

509 00:23:14.440 --> 00:23:15.563 have air conditioning.

510 00:23:16.900 --> 00:23:20.270 The green up here is carbon dioxide emissions

511 00:23:20.270 --> 00:23:22.240 and you can see a steady increase

512 00:23:22.240 --> 00:23:24.720 in carbon dioxide emissions

513 00:23:24.720 --> 00:23:26.610 as a result of air conditioning

514 00:23:26.610 --> 00:23:28.430 using more and more electricity

515 00:23:28.430 --> 00:23:30.910 because they're being more and more air conditioning.

516 00:23:30.910 --> 00:23:35.570 And in 2019, it was up to about one gigaton

517 00:23:35.570 --> 00:23:37.450 or a billion tons of carbon,

518 00:23:37.450 --> 00:23:39.360 which represents carbon dioxide,

519 00:23:39.360 --> 00:23:41.850 which represents about 3%

520 00:23:41.850 --> 00:23:44.957 of total anthropogenic CO2 emissions.

521 00:23:47.220 --> 00:23:50.833 Okay, so now let's take a deeper dive into some of this.

522 00:23:52.200 --> 00:23:55.383 Let's take a look at the bottom row first, which is world.

523 00:23:56.920 --> 00:24:01.250 So heat-related deaths were about 345,000.

524 00:24:01.250 --> 00:24:04.780 This was estimated in one of the other

525 00:24:04.780 --> 00:24:06.660 Lancet Countdown Indicators

526 00:24:06.660 --> 00:24:09.580 and note that it's just for people greater

527 00:24:09.580 --> 00:24:11.683 or equal to age 65 years.

528 00:24:13.250 --> 00:24:15.770 Heat-related deaths averted by air conditioning

529 00:24:15.770 --> 00:24:17.820 again was about 195,000.

530 00:24:17.820 --> 00:24:20.010 So what that means is that

531 00:24:20.010 --> 00:24:23.170 if there had been no air conditioning in the world,

532 00:24:23.170 --> 00:24:27.350 there would have been roughly 540,000 heat-related deaths

533 00:24:27.350 --> 00:24:28.920 in people over age 65,

534 00:24:28.920 --> 00:24:33.360 instead of the 345,000 that actually occurred

535 00:24:33.360 --> 00:24:35.060 and of course these are estimates.

536 00:24:36.720 --> 00:24:38.550 And that's with a proportion of house,

537 00:24:38.550 --> 00:24:43.080 overall proportion as I said is 33% with air conditioning.

538 00:24:43.080 --> 00:24:44.690 Let's look at a few of the countries.

539 00:24:44.690 --> 00:24:47.470 So first China was estimated

540 00:24:47.470 --> 00:24:50.840 to have 72,000 heat-related deaths

541 00:24:50.840 --> 00:24:54.238 and roughly the same number of heat-related deaths

542 00:24:54.238 --> 00:24:57.010 averted due to the presence of air conditioning.

543 00:24:57.010 --> 00:24:58.910 So without air conditioning,

544 00:24:58.910 --> 00:25:01.460 the number of heat-related deaths

545 00:25:01.460 --> 00:25:03.050 would have been about double.

546 00:25:03.050 --> 00:25:05.390 And you can see that proportion of households

547 00:25:05.390 --> 00:25:08.710 with air conditioning in China is fairly substantial.

548 00:25:08.710 --> 00:25:10.830 It's about two thirds.

549 00:25:10.830 --> 00:25:14.330 On the other hand, India is estimated to have

550 00:25:16.296 --> 00:25:19.420 46,500 heat-related deaths,

551 00:25:19.420 --> 00:25:24.190 but only 2,400 averted by air conditioning.

552 00:25:24.190 --> 00:25:26.960 And that of course is due to the small proportion

553 00:25:26.960 --> 00:25:28.950 of households with air conditioning in India

554 00:25:28.950 --> 00:25:30.353 which is about 6%.

555 00:25:32.470 --> 00:25:34.270 And then one more example,

556 00:25:34.270 --> 00:25:38.390 the United States which has a very high proportion

557 00:25:38.390 --> 00:25:40.230 of households with air conditioning,

558 00:25:40.230 --> 00:25:45.000 92% is estimated to have had about

559 00:25:45.000 --> 00:25:48.500 20,500 heat-related deaths,

560 00:25:48.500 --> 00:25:53.450 but almost 48,000 heat-related deaths averted by

561 00:25:53.450 --> 00:25:56.250 the presence of air conditioning meaning that

562 00:25:56.250 --> 00:25:58.860 if there had been no air conditioning in the United States,

563 00:25:58.860 --> 00:26:02.270 there would have been almost 70,000 heat-related deaths.

564 00:26:02.270 --> 00:26:05.083 This is all among people of age 65.

565 00:26:07.630 --> 00:26:09.270 So you could see that

566 00:26:09.270 --> 00:26:12.040 one of the points to take out of this is number one,

567 00:26:12.040 --> 00:26:14.460 indoor cooling is very effective,

568 00:26:14.460 --> 00:26:16.840 but number two, there're a lot of inequities right now.

569 00:26:16.840 --> 00:26:17.730 There are some countries

570 00:26:17.730 --> 00:26:19.890 with very low prevalence of air conditioning,

571 00:26:19.890 --> 00:26:21.520 others with very high prevalence

572 00:26:22.762 --> 00:26:26.363 and you could see how that's manifested in these numbers.

573 00:26:30.490 --> 00:26:33.943 So now let's go through the harms and a little more detail.

574 00:26:35.350 --> 00:26:38.049 Air conditioning represents 8%

575 00:26:38.049 --> 00:26:41.183 of global electricity consumption in 2019.

576 00:26:43.080 --> 00:26:46.430 I mentioned the greenhouse gas emissions, the CO2 emissions,

577 00:26:46.430 --> 00:26:51.430 but we also have the problem that the main refrigerants

578 00:26:51.430 --> 00:26:54.850 that use an air conditioning is hydrofluorocarbons

579 00:26:54.850 --> 00:26:57.020 and those are powerful greenhouse gases

580 00:26:57.020 --> 00:26:58.540 it turns out in themselves,

581 00:26:58.540 --> 00:27:01.670 and they often leak into the atmosphere

582 00:27:01.670 --> 00:27:02.803 and that's an issue.

583 00:27:04.340 --> 00:27:08.030 We were able to estimate 21,000 premature deaths

584 00:27:08.030 --> 00:27:11.800 due to PM2.5 and that's the fine particulate matter

585 00:27:11.800 --> 00:27:15.940 of emissions from fossil fuel powered electricity

586 00:27:15.940 --> 00:27:20.173 used for air conditioning in 2019, that's global.

587 00:27:21.740 --> 00:27:24.150 Air conditioning is a major contributor

588 00:27:24.150 --> 00:27:27.110 to peak electricity demand on hot days,

589 00:27:27.110 --> 00:27:31.320 often contributing to more than half of the demands

590 00:27:31.320 --> 00:27:33.853 and that contributes to power outages.

591 00:27:34.900 --> 00:27:38.670 And finally, it turns out that there's so much waste heat

592 00:27:38.670 --> 00:27:41.450 that goes from the inside to the outside

593 00:27:42.520 --> 00:27:45.530 as a result from using air conditioning,

594 00:27:45.530 --> 00:27:47.830 that it could actually contribute

595 00:27:47.830 --> 00:27:50.300 to the urban heat island effect

596 00:27:50.300 --> 00:27:53.513 as much as one degree centigrade at nighttime.

597 00:27:57.630 --> 00:28:02.093 So sustainable indoor cooling is urgently needed.

598 00:28:07.312 --> 00:28:09.570 The IEA projects that according

599 00:28:09.570 --> 00:28:13.040 to a business-as-usual scenario in 2050,

600 00:28:13.040 --> 00:28:18.040 air conditioning use will soar understandably

601 00:28:18.060 --> 00:28:20.160 because people in India deserve

602 00:28:20.160 --> 00:28:21.630 to have indoor cooling for example

603 00:28:21.630 --> 00:28:23.580 and there are a lot of people in India.

604 00:28:24.884 --> 00:28:27.330 16% of air conditioning will represent

605 00:28:27.330 --> 00:28:30.223 16% of global electricity consumption.

606 00:28:31.890 --> 00:28:34.370 It will be 2 gigatons of CO2 emissions

607 00:28:34.370 --> 00:28:36.543 instead of the current 1 gigaton.

608 00:28:38.120 --> 00:28:39.140 And in addition,

609 00:28:39.140 --> 00:28:42.160 we have the hydrofluoro carbon emission problem

610 00:28:42.160 --> 00:28:45.693 and that would represent 1-2 gigaton CO2 equivalent.

611 00:28:47.160 --> 00:28:49.450 So the goal we have before us

612 00:28:49.450 --> 00:28:52.170 is to make sustainable indoor cooling accessible

613 00:28:52.170 --> 00:28:55.020 to everyone in the world who needs it.

614 00:28:55.020 --> 00:28:57.703 So it needs to be accessible and also sustainable.

615 00:28:59.280 --> 00:29:03.350 And so this is an outline of a possible way forward.

616 00:29:03.350 --> 00:29:07.430 First, we need energy efficient building design

617 00:29:07.430 --> 00:29:10.260 through strong, enforced building codes.

618 00:29:10.260 --> 00:29:14.760 And a key element of that is to utilize lessons

619 00:29:14.760 --> 00:29:16.550 from traditional building designs

620 00:29:16.550 --> 00:29:18.930 and tropical and subtropical regions

621 00:29:18.930 --> 00:29:21.140 that over the period of centuries

622 00:29:21.140 --> 00:29:24.150 people lived in very hot climates,

623 00:29:24.150 --> 00:29:28.700 developed a lot of wisdom about how to build buildings

624 00:29:28.700 --> 00:29:33.700 that would remain cool, including by ways to provide shade,

625 00:29:34.370 --> 00:29:37.200 thermal mass, insulation and ventilation.

626 00:29:37.200 --> 00:29:40.840 And that wisdom has largely been ignored

627 00:29:40.840 --> 00:29:42.680 for the past few decades.

628 00:29:42.680 --> 00:29:44.933 So we need to return to that wisdom.

629 00:29:46.430 --> 00:29:48.600 We need strong weatherization programs

630 00:29:50.540 --> 00:29:53.850 and that's actually a justice issue too.

631 00:29:53.850 --> 00:29:56.340 We need low-tech solutions.

632 00:29:56.340 --> 00:30:00.623 Fans are often useful, also cool roofs.

633 00:30:01.570 --> 00:30:03.300 We need continuous strengthening

634 00:30:03.300 --> 00:30:05.350 of air conditioning performance standards

635 00:30:05.350 --> 00:30:07.050 and mandatory labeling.

636 00:30:07.050 --> 00:30:10.480 So for example if through technology,

637 00:30:10.480 --> 00:30:12.360 we could make air conditioning,

638 00:30:12.360 --> 00:30:15.310 several orders of magnitude more efficient,

639 00:30:15.310 --> 00:30:17.260 then it's not really onerous.

640 00:30:17.260 --> 00:30:18.840 We solve a lot of the problems.

641 00:30:18.840 --> 00:30:20.750 So air conditioning just because

642 00:30:20.750 --> 00:30:23.350 it's cold air conditioning isn't there,

643 00:30:23.350 --> 00:30:26.633 in its current form that has these major issues.

644 00:30:28.570 --> 00:30:30.840 The electricity that powers air conditioning

645 00:30:30.840 --> 00:30:32.913 needs to be zero-carbon electricity.

646 00:30:34.200 --> 00:30:35.810 We need to regulate the use

647 00:30:35.810 --> 00:30:37.893 and disposal of the refrigerants.

648 00:30:39.930 --> 00:30:42.030 There's progressing along those lines,

649 00:30:42.030 --> 00:30:45.370 the Montreal Protocol Kigali Amendment

650 00:30:45.370 --> 00:30:48.200 aims to phase out hydrofluorocarbons

651 00:30:48.200 --> 00:30:51.360 and so that needs to be actually implemented.

652 00:30:51.360 --> 00:30:55.450 We need to prevent leakage of refrigerants

653 00:30:55.450 --> 00:30:58.460 during air conditioning operation and maintenance.

654 00:30:58.460 --> 00:31:01.250 And finally, not finally, but we need to recycle

655 00:31:01.250 --> 00:31:03.670 or destroy refrigerants at the end of life

656 00:31:03.670 --> 00:31:08.670 often when air conditioners are disposed of improperly

657 00:31:09.120 --> 00:31:12.980 and then the refrigerants leak out into the atmosphere.

658 00:31:12.980 --> 00:31:15.620 And then we need to expand urban green

659 00:31:15.620 --> 00:31:18.360 and blue space to cool down cities

660 00:31:18.360 --> 00:31:22.480 so that we need less air conditioning in the first place.

661 00:31:22.480 --> 00:31:26.353 So with that I'll conclude and turn it over to Jeremy.

662 00:31:34.100 --> 00:31:35.930 <v ->Great, thanks Robert.</v>

663 00:31:35.930 --> 00:31:39.453 I'm gonna go ahead and try and share my screen.

664 00:31:40.890 --> 00:31:43.313 I think that's gonna kick yours off.

665 00:31:49.578 --> 00:31:52.140 <v ->Okay, good so you have yours on?</v>

666 00:31:52.140 --> 00:31:52.973 <v ->Yes.</v>

667 00:31:52.973 --> 00:31:54.140 <v ->Okay, great.</v>

668 00:31:55.660 --> 00:31:56.493 <v ->Excellent.</v>

669 00:32:00.800 --> 00:32:04.260 So I'm gonna give you a very brief overview

670 00:32:04.260 --> 00:32:09.260 of the U.S. policy brief for the Lancet Countdown

671 00:32:09.330 --> 00:32:10.783 on health and climate change.

672 00:32:13.760 --> 00:32:16.930 And I'm gonna start out by highlighting the goals.

673 00:32:16.930 --> 00:32:20.340 The goals of the global countdown are to influence

674 00:32:21.580 --> 00:32:24.960 global processes including the COP and so

675 00:32:24.960 --> 00:32:28.580 the report is released every year in advance of the COP.

676 00:32:28.580 --> 00:32:29.900 And the goal there

677 00:32:29.900 --> 00:32:32.230 is to introduce health into the conversation

678 00:32:32.230 --> 00:32:34.900 and it's been very successful at that over the years.

679 00:32:34.900 --> 00:32:38.020 The goals of the U.S. brief are related to that,

680 00:32:38.020 --> 00:32:39.770 but also different.

681 00:32:39.770 --> 00:32:44.770 And so one of our goals is to highlight trends in data

682 00:32:46.360 --> 00:32:48.140 from the global report that are relevant

683 00:32:48.140 --> 00:32:51.250 and specific to the U.S.

684 00:32:51.250 --> 00:32:53.670 We're also interested in promoting awareness

685 00:32:53.670 --> 00:32:55.200 and understanding of the intersections

686 00:32:55.200 --> 00:32:58.250 between climate change and health for a U.S. audience,

687 00:32:58.250 --> 00:33:02.440 which sometimes refracts these questions

688 00:33:02.440 --> 00:33:05.893 through a different set of considerations and experiences.

689 00:33:07.510 --> 00:33:12.060 We also are a very large country with a diverse population,

690 00:33:12.060 --> 00:33:15.300 and a diverse set of

691 00:33:15.300 --> 00:33:17.640 environmental climate sensitive hazards.

692 00:33:17.640 --> 00:33:22.640 And so the goal of the U.S. brief is to present findings

693 00:33:24.450 --> 00:33:28.720 through the lens of experience of populations in the U.S.

694 00:33:28.720 --> 00:33:31.450 and to highlight the very important,

695 00:33:31.450 --> 00:33:35.990 really fundamental considerations related to equity

696 00:33:37.170 --> 00:33:40.393 in these impacts for U.S. populations.

697 00:33:41.300 --> 00:33:44.780 Next, we are very keen on advancing collaboration

698 00:33:44.780 --> 00:33:48.060 within the health sector around this issue in the U.S.

699 00:33:48.060 --> 00:33:49.970 and that's a major goal of our effort

700 00:33:49.970 --> 00:33:51.900 is to organize that community.

701 00:33:51.900 --> 00:33:55.470 And then lastly, we wanna promote action by policy makers

702 00:33:55.470 --> 00:33:59.200 that is informed by the findings from the global report

703 00:33:59.200 --> 00:34:00.550 and the U.S. brief.

704 00:34:00.550 --> 00:34:03.640 So this year we produced our fifth report.

705 00:34:03.640 --> 00:34:07.310 It presented a suite of indicators

706 00:34:07.310 --> 00:34:09.570 from the global report specific to the United States,

707 00:34:09.570 --> 00:34:12.040 and also brought in some other scientific work

708 00:34:12.040 --> 00:34:14.820 that was relevant to the U.S. context.

709 00:34:14.820 --> 00:34:16.660 This brief represents the consensus

710 00:34:16.660 --> 00:34:20.530 of over 70 institutions domestically.

711 00:34:20.530 --> 00:34:24.793 And as I said, it brings in data from the global report.

712 00:34:26.210 --> 00:34:31.210 The brief this year brings in emphasis

713 00:34:31.340 --> 00:34:32.890 on three climate sensitive hazards

714 00:34:32.890 --> 00:34:37.870 that have plagued the United States in recent years;

715 00:34:37.870 --> 00:34:41.160 extreme heat, drought, and wildfires,

716 00:34:41.160 --> 00:34:44.840 and it calls for policy makers to make three commitments.

717 00:34:44.840 --> 00:34:47.740 One is an urgent investment in research and interventions

718 00:34:47.740 --> 00:34:51.160 to protect health and prioritize equity in the process.

719 00:34:51.160 --> 00:34:54.000 The second is to account for the health costs

720 00:34:54.000 --> 00:34:57.510 of fossil fuel combustion in their decision-making.

721 00:34:57.510 --> 00:35:00.393 And the third is to rapidly cut greenhouse gas emissions.

722 00:35:02.328 --> 00:35:03.990 I'm gonna go into each of those briefly,

723 00:35:03.990 --> 00:35:06.090 and then tell you a little bit about

724 00:35:06.090 --> 00:35:08.020 the report and the launch.

725 00:35:08.020 --> 00:35:13.020 So as Marina emphasized, we know from global data

726 00:35:14.570 --> 00:35:16.850 that health risks from extreme heat are growing

727 00:35:16.850 --> 00:35:19.500 and the trend is the same in the United States.

728 00:35:19.500 --> 00:35:23.890 And particularly we wanted to emphasize the impact on groups

729 00:35:23.890 --> 00:35:27.130 at different points in the life cycle.

730 00:35:27.130 --> 00:35:28.440 And this is the theme we've developed

731 00:35:28.440 --> 00:35:31.523 at different points in different ways over the years.

732 00:35:32.480 --> 00:35:36.250 The data for the U.S. shows that we continue to see

733 00:35:36.250 --> 00:35:41.250 a pretty dramatic rise in exposure among people over 65

734 00:35:41.660 --> 00:35:45.620 and among infants to extreme heat

735 00:35:45.620 --> 00:35:50.123 relative to this baseline here from 1986-2005.

736 00:35:51.860 --> 00:35:56.860 The second point is the droughts harm health.

737 00:35:57.527 --> 00:35:58.960 And this is something that

738 00:35:58.960 --> 00:36:01.480 a lot of people may not be as well aware of.

739 00:36:01.480 --> 00:36:05.120 And so we put some energy this year

740 00:36:05.120 --> 00:36:10.020 into clarifying the ways in which drought harms health

741 00:36:10.020 --> 00:36:13.303 and those are elaborated here in this infographic.

742 00:36:14.150 --> 00:36:15.570 Of course, some of the impacts

743 00:36:15.570 --> 00:36:18.500 are mediated through extreme heat exposure,

744 00:36:18.500 --> 00:36:20.840 but a number of others go through pathways

745 00:36:20.840 --> 00:36:22.130 that are a little more indirect,

746 00:36:22.130 --> 00:36:24.330 including changes in water quality,

747 00:36:24.330 --> 00:36:26.540 changes in infectious disease exposure

748 00:36:26.540 --> 00:36:28.550 and changes in infectious disease ecology

749 00:36:28.550 --> 00:36:31.620 associated with drought, impacts on mental health

750 00:36:31.620 --> 00:36:33.080 particularly in rural communities

751 00:36:33.080 --> 00:36:35.960 and then also respiratory disease impacts.

752 00:36:35.960 --> 00:36:40.420 And we also brought out the equity dimension highlighting

753 00:36:41.939 --> 00:36:46.100 the wide range in intensity of exposure

754 00:36:46.100 --> 00:36:47.530 to drought across the United States

755 00:36:47.530 --> 00:36:52.180 and then how drought affects different communities

756 00:36:52.180 --> 00:36:56.730 quite differently in its various impacts

757 00:36:56.730 --> 00:36:57.880 and particularly highlighting

758 00:36:57.880 --> 00:37:00.173 the impact on rural and farming communities.

759 00:37:02.070 --> 00:37:04.790 And then lastly, we focus this year on wildfires.

760 00:37:04.790 --> 00:37:06.450 And of course, as you all know,

761 00:37:06.450 --> 00:37:10.200 wildfire seasons have been very intense of late.

762 00:37:10.200 --> 00:37:14.680 So we collaborated with some colleagues at Emory

763 00:37:14.680 --> 00:37:19.680 who developed this figure showing that

764 00:37:20.130 --> 00:37:23.470 we're seeing earlier onset of the wildfire season,

765 00:37:23.470 --> 00:37:25.480 the wildfire season is becoming more intense,

766 00:37:25.480 --> 00:37:27.240 and that there's a clear correlation

767 00:37:27.240 --> 00:37:30.593 with temperature anomalies over this 20 year time series.

768 00:37:31.450 --> 00:37:33.250 We also emphasize in the report

769 00:37:33.250 --> 00:37:36.930 the fact that smoke exposure,

770 00:37:36.930 --> 00:37:38.460 it seems like it's a local issue

771 00:37:38.460 --> 00:37:40.050 and of course it is very intense locally

772 00:37:40.050 --> 00:37:42.160 when these fires occur mostly in the West,

773 00:37:42.160 --> 00:37:45.550 but that the smoke extends all the way over to you all

774 00:37:45.550 --> 00:37:48.110 in the Northeast and impacts

775 00:37:50.403 --> 00:37:53.567 your air quality quite adversely.

776 00:37:55.290 --> 00:37:57.170 And these impacts again

777 00:37:57.170 --> 00:37:59.800 are really not equitably distributed.

778 00:37:59.800 --> 00:38:02.200 And these communities here, Black, Latino,

779 00:38:02.200 --> 00:38:04.870 Latino communities, American Indian communities,

780 00:38:04.870 --> 00:38:08.620 and low income groups are all much more highly exposed

781 00:38:08.620 --> 00:38:11.213 and more adversely affected the groups.

782 00:38:12.780 --> 00:38:15.750 The report also developed some case studies

783 00:38:15.750 --> 00:38:18.150 and I don't have a chance

784 00:38:18.150 --> 00:38:20.010 to go into all of the specifics here,

785 00:38:20.010 --> 00:38:24.470 but we explored the role of climate change

786 00:38:24.470 --> 00:38:26.930 in increasing risk for dengue in the United States,

787 00:38:26.930 --> 00:38:29.000 particularly through increasing

788 00:38:29.000 --> 00:38:32.880 vectorial capacity and/or not.

789 00:38:32.880 --> 00:38:37.100 And then also throwing some analogies

790 00:38:37.100 --> 00:38:41.903 between the COVID pandemic energy issues

791 00:38:43.800 --> 00:38:48.290 and infrastructure challenges that we've seen,

792 00:38:48.290 --> 00:38:52.030 and then interactions with climate sensitive hazards,

793 00:38:52.030 --> 00:38:54.250 including extreme heat and wildfires

794 00:38:55.350 --> 00:38:57.190 that exacerbated the impacts

795 00:38:57.190 --> 00:38:59.910 of those hazards at multiple points.

796 00:38:59.910 --> 00:39:01.190 We experienced that definitely here

797 00:39:01.190 --> 00:39:02.210 in the Pacific Northwest

798 00:39:02.210 --> 00:39:06.150 with our extreme heat event this past summer,

799 00:39:06.150 --> 00:39:07.140 which was catastrophic

800 00:39:07.140 --> 00:39:09.920 and would have been really difficult on its own,

801 00:39:09.920 --> 00:39:12.670 but was that much more difficult to handle

802 00:39:12.670 --> 00:39:14.810 because of all of the capacity issues

803 00:39:14.810 --> 00:39:17.360 that we're focusing, we've experienced with COVID,

804 00:39:17.360 --> 00:39:20.440 and this is likely a glimpse of

805 00:39:20.440 --> 00:39:22.240 what we'll see in the future in terms of strain

806 00:39:22.240 --> 00:39:25.010 on the healthcare system driven

807 00:39:25.010 --> 00:39:26.810 certainly by climate sensitive hazards,

808 00:39:26.810 --> 00:39:28.960 but also interacting with a number of other

809 00:39:31.130 --> 00:39:34.400 elements of social destabilization

810 00:39:34.400 --> 00:39:35.850 that we're seeing in the U.S.

811 00:39:37.080 --> 00:39:40.300 So our policy recommendations are to focus on adaptation

812 00:39:40.300 --> 00:39:45.300 through research that really gets down to local levels

813 00:39:46.530 --> 00:39:48.870 and thinks through how to reduce exposure,

814 00:39:48.870 --> 00:39:51.370 how to implement effective interventions

815 00:39:51.370 --> 00:39:55.350 quickly and at scale, focusing on economics and finance,

816 00:39:55.350 --> 00:39:58.180 and do a more comprehensive accounting

817 00:39:58.180 --> 00:40:00.500 of the health-related costs of fossil fuels.

818 00:40:00.500 --> 00:40:02.180 So taking those externalities

819 00:40:02.180 --> 00:40:05.210 and incorporating them into decision-making, policy-making.

820 00:40:05.210 --> 00:40:06.700 And then lastly of course,

821 00:40:06.700 --> 00:40:08.830 an urgent focus on mitigation

822 00:40:08.830 --> 00:40:12.280 and an emphasis there on policies

823 00:40:12.280 --> 00:40:14.970 that will advance health equity

824 00:40:14.970 --> 00:40:17.223 rather than undermine it.

825 00:40:18.520 --> 00:40:20.770 We have a suite of additional resources

826 00:40:20.770 --> 00:40:22.980 in addition to our policy brief,

827 00:40:22.980 --> 00:40:24.320 we have executive summaries,

828 00:40:24.320 --> 00:40:28.880 we have briefs that are aimed at the general public

829 00:40:28.880 --> 00:40:32.330 both of those are in English and Spanish.

830 00:40:32.330 --> 00:40:33.620 We have a brief that

831 00:40:33.620 --> 00:40:36.080 is written specifically for health professionals,

832 00:40:36.080 --> 00:40:39.110 and we have a brief that focuses on the novel science

833 00:40:39.110 --> 00:40:41.700 that is in this year's report.

834 00:40:41.700 --> 00:40:46.670 We also have regional briefs that emphasize impacts

835 00:40:46.670 --> 00:40:49.063 for different areas of the United States.

836 00:40:50.300 --> 00:40:52.630 And we have a big launch event every year

837 00:40:52.630 --> 00:40:55.520 and it coincides with the launch of the global report

838 00:40:55.520 --> 00:41:00.520 and we really work hard with our partner Climate Nexus

839 00:41:01.430 --> 00:41:06.430 to bring in a diverse range of voices and perspectives,

840 00:41:06.600 --> 00:41:10.700 and to reach a large range

841 00:41:10.700 --> 00:41:12.540 of communities with this launch.

842 00:41:12.540 --> 00:41:14.040 And so you can see here we had

843 00:41:15.050 --> 00:41:19.290 a really nice diverse collection of speakers

844 00:41:20.130 --> 00:41:23.560 at this last year's event which was recorded,

845 00:41:23.560 --> 00:41:25.810 and you can access the recording

846 00:41:25.810 --> 00:41:29.357 and all of those other resources at this link here,

847 00:41:29.357 --> 00:41:31.670 lancetcountdownus.org.

848 00:41:31.670 --> 00:41:35.080 Thanks and I look forward to ongoing conversation

849 00:41:35.080 --> 00:41:37.580 and answering your questions later in the session.

850 00:41:38.540 --> 00:41:39.390 <v ->Thanks, Jeremy.</v>

851 00:41:41.340 --> 00:41:45.420 Okay, so last but not least is Laura Bozzi

852 00:41:45.420 --> 00:41:48.010 who's gonna talk about the Connecticut Report.

853 00:41:48.010 --> 00:41:51.013 <v ->Thank you, and I also wanna acknowledge</v>

854 00:41:53.769 --> 00:41:57.575 my (mumbles) about (indistinct)

855 00:41:57.575 --> 00:41:59.923 on the appointment I wanna talk about today.

856 00:42:01.910 --> 00:42:03.740 So last September the Yale Center

857 00:42:03.740 --> 00:42:05.140 on Climate Change and Health released

858 00:42:05.140 --> 00:42:08.170 the Climate Change and Health 2020 Report.

859 00:42:08.170 --> 00:42:09.870 I mentioned it during initial inspiration

860 00:42:09.870 --> 00:42:12.550 from the global Lancet Countdown (mumbles).

861 00:42:12.550 --> 00:42:13.880 It's one of those with the recognition

862 00:42:13.880 --> 00:42:16.420 that there was a gap and clear information

863 00:42:16.420 --> 00:42:19.220 specific to Connecticut on how climate change (mumbles).

864 00:42:20.533 --> 00:42:22.910 The report is based on 19 Indicators,

865 00:42:22.910 --> 00:42:23.830 you can see on the right,

866 00:42:23.830 --> 00:42:25.540 tracking changes to the environment

867 00:42:25.540 --> 00:42:27.390 and health outcomes.

868 00:42:27.390 --> 00:42:29.560 It's purpose is to inform policy makers,

869 00:42:29.560 --> 00:42:32.190 health professionals, advocates, and residents,

870 00:42:32.190 --> 00:42:33.530 about the impacts of climate change

871 00:42:33.530 --> 00:42:37.220 now in the future on human health in Connecticut.

872 00:42:37.220 --> 00:42:38.150 Wherever possible,

873 00:42:38.150 --> 00:42:40.550 we were printed indicator results for each county.

874 00:42:40.550 --> 00:42:42.057 There are eight counties in Connecticut.

875 00:42:42.057 --> 00:42:45.460 We talked as far back as the dataset would allow

876 00:42:45.460 --> 00:42:48.123 and some cases to the late 1800s.

877 00:42:48.123 --> 00:42:49.940 Some of our indicators

878 00:42:49.940 --> 00:42:52.240 do already demonstrate a trend consistent

879 00:42:52.240 --> 00:42:54.730 with what's expected under climate change,

880 00:42:54.730 --> 00:42:57.340 such as increasing the average temperature

881 00:42:57.340 --> 00:42:59.610 or rising number of heavy rainfall events.

882 00:42:59.610 --> 00:43:02.210 Other indicators don't yet show a trend,

883 00:43:02.210 --> 00:43:06.038 but scientific studies project such changes

884 00:43:06.038 --> 00:43:08.538 (indistinct).

885 00:43:10.478 --> 00:43:12.450 We also produced an issue for each series,

886 00:43:12.450 --> 00:43:14.110 three of what you see here.

887 00:43:14.110 --> 00:43:17.640 The issue briefs (mumbles) the 2020 reports for domains,

888 00:43:17.640 --> 00:43:19.780 summarizing key indicator findings,

889 00:43:19.780 --> 00:43:21.040 and extending the report

890 00:43:21.040 --> 00:43:23.857 to include specific policy requisitions.

891 00:43:26.570 --> 00:43:28.840 An important theme of the 2020 report

892 00:43:28.840 --> 00:43:31.290 and the issue briefs is recognition of climate change

893 00:43:31.290 --> 00:43:33.750 as an environmental justice issue.

894 00:43:33.750 --> 00:43:35.910 A climate change affects everyone we know

895 00:43:35.910 --> 00:43:38.160 but some people are hit much harder.

896 00:43:38.160 --> 00:43:41.493 It's often called a risk amplifier or a threat multiplier.

897 00:43:42.450 --> 00:43:44.130 Some people are more vulnerable than others

898 00:43:44.130 --> 00:43:47.580 because of where they live or work, their age or race,

899 00:43:47.580 --> 00:43:51.120 their health condition, their socioeconomic status.

900 00:43:51.120 --> 00:43:53.180 These underlying drivers of vulnerability

901 00:43:53.180 --> 00:43:56.240 are often tied to deep among standing inequities

902 00:43:56.240 --> 00:43:58.690 which are now made worse by climate change.

903 00:43:58.690 --> 00:44:01.980 Our issue briefs in particular elevate policy solutions

904 00:44:01.980 --> 00:44:05.823 that apply a justice or an equity lens in response.

905 00:44:07.810 --> 00:44:11.410 I'll now turn to some examples of our indicators

906 00:44:11.410 --> 00:44:13.360 following that they're ports for domains

907 00:44:13.360 --> 00:44:14.710 beginning with temperature.

908 00:44:16.900 --> 00:44:18.160 Annual average temperature

909 00:44:18.160 --> 00:44:20.450 has increased over three degrees Fahrenheit

910 00:44:20.450 --> 00:44:22.350 across Connecticut and in each county

911 00:44:22.350 --> 00:44:25.190 in the last 125 years.

912 00:44:25.190 --> 00:44:27.630 Over that time, six of the hottest years in Connecticut

913 00:44:27.630 --> 00:44:29.060 have been since 2005

914 00:44:29.980 --> 00:44:32.740 versus has very broad implications for health

915 00:44:32.740 --> 00:44:36.210 among other impacts, high heat days causing stress,

916 00:44:36.210 --> 00:44:38.170 heat stroke and even death.

917 00:44:38.170 --> 00:44:40.910 High heat days often coincide with close and alert days

918 00:44:40.910 --> 00:44:43.733 because high temperatures magnify those official levels.

919 00:44:44.620 --> 00:44:46.250 Annual winter temperatures

920 00:44:46.250 --> 00:44:49.620 that we're seeing now in here in Connecticut this year

921 00:44:49.620 --> 00:44:51.500 can create conditions for larger tick

922 00:44:51.500 --> 00:44:53.500 and mosquito populations that are active

923 00:44:53.500 --> 00:44:55.770 over a greater proportion of the year.

924 00:44:55.770 --> 00:44:57.890 A longer season for ragweed pollen,

925 00:44:57.890 --> 00:45:00.190 which causes hay fever and exacerbates asthma.

926 00:45:03.443 --> 00:45:05.393 And particular in heat-related illness,

927 00:45:06.761 --> 00:45:09.600 we tracked reported cases of heat stress in Connecticut

928 00:45:09.600 --> 00:45:14.079 and found that from 2007-2016 there were on average

929 00:45:14.079 --> 00:45:16.190 422 emergency department visits

930 00:45:16.190 --> 00:45:20.070 and 45 hospitalizations per year for heat stress

931 00:45:20.070 --> 00:45:22.020 but this is certainly an underestimate.

932 00:45:22.960 --> 00:45:26.090 Young adults were more likely to be admitted to the ED

933 00:45:26.090 --> 00:45:28.540 for heat-related illness than other age groups,

934 00:45:28.540 --> 00:45:33.220 but the risk of inpatient admission increases with age

935 00:45:33.220 --> 00:45:35.433 and is highest for those 75 and older.

936 00:45:36.610 --> 00:45:37.950 Heat risks can be confounded

937 00:45:37.950 --> 00:45:40.200 to do the urban heat island effect.

938 00:45:40.200 --> 00:45:41.990 As you can see on the right

939 00:45:41.990 --> 00:45:44.650 that cities are hotter than the surrounding area

940 00:45:44.650 --> 00:45:47.590 because of more manmade infrastructure that absorbs heat

941 00:45:47.590 --> 00:45:50.090 as well as air conditioning accepted by (mumbles).

942 00:45:52.219 --> 00:45:54.640 This health risk is magnified for those low financial

943 00:45:54.640 --> 00:45:57.080 or social resources to adapt.

944 00:45:57.080 --> 00:46:00.410 And importantly vulnerability factors are cumulative.

945 00:46:00.410 --> 00:46:01.430 Some people are associated

946 00:46:01.430 --> 00:46:03.550 with a number of the categories that are on the left,

947 00:46:03.550 --> 00:46:05.500 which puts them at people greater risk.

948 00:46:06.970 --> 00:46:08.463 As we look to the future,

949 00:46:09.920 --> 00:46:13.720 the Governor's Council on Climate Change reported five

950 00:46:13.720 --> 00:46:16.050 projected five degree very high increase

951 00:46:16.050 --> 00:46:20.690 in average temperature by 2015 in Connecticut

952 00:46:20.690 --> 00:46:25.510 compared to a 1978 and 1999 reference period.

953 00:46:25.510 --> 00:46:28.770 So we can expect more extreme heat events

954 00:46:28.770 --> 00:46:29.850 for them to become more common

955 00:46:29.850 --> 00:46:31.970 and more severe and to last longer.

956 00:46:31.970 --> 00:46:34.530 Importantly temperature increases after 2050

957 00:46:34.530 --> 00:46:37.650 depends on how quickly we stop emitting greenhouse gases.

958 00:46:37.650 --> 00:46:39.417 And thus the Governor's Council on Climate Change said,

959 00:46:39.417 --> 00:46:42.487 "Coordinated mitigation now means it is more likely

960 00:46:42.487 --> 00:46:45.267 "the temperatures will stabilize after 2050.

961 00:46:45.267 --> 00:46:49.217 "If not, warming is likely to accelerate."

962 00:46:49.217 --> 00:46:51.623 Moving to extreme events.

963 00:46:52.910 --> 00:46:57.820 We tracked national or really declared weather disasters

964 00:46:57.820 --> 00:46:59.040 that were issued for Connecticut

965 00:46:59.040 --> 00:47:01.570 and found that from 2010-2019,

966 00:47:01.570 --> 00:47:04.170 there were nine such disaster declarations

967 00:47:04.170 --> 00:47:08.550 compared to only 13 in the previous 56 years.

968 00:47:08.550 --> 00:47:11.440 In addition to direct health apart from weather disasters,

969 00:47:11.440 --> 00:47:14.790 there're important indirect effects,

970 00:47:14.790 --> 00:47:17.260 including disruptions that can occur

971 00:47:17.260 --> 00:47:19.590 to critical infrastructure, assessment of electricity,

972 00:47:19.590 --> 00:47:24.050 drinking water, food refrigeration, internet service,

973 00:47:24.050 --> 00:47:27.190 transportation is one implication of health,

974 00:47:27.190 --> 00:47:29.250 losing our electricity can be life-threatening

975 00:47:29.250 --> 00:47:32.070 for someone who uses home dialysis.

976 00:47:32.070 --> 00:47:35.790 There are mental health impacts from the trauma of disasters

977 00:47:35.790 --> 00:47:39.189 and their long-term community impacts.

978 00:47:39.189 --> 00:47:41.130 And the building staff and lower income communities,

979 00:47:41.130 --> 00:47:42.360 the doctrine that increased risk

980 00:47:42.360 --> 00:47:44.610 for damage by natural disasters,

981 00:47:44.610 --> 00:47:46.870 partly because of historic patterns

982 00:47:46.870 --> 00:47:49.610 of development in vulnerable areas,

983 00:47:49.610 --> 00:47:52.118 plus a chronic under investment in public infrastructure

984 00:47:52.118 --> 00:47:54.618 (indistinct).

985 00:48:00.340 --> 00:48:04.310 We tracked Lyme disease cases in Connecticut

986 00:48:04.310 --> 00:48:07.410 and found that the number of cases in the last decade or so

987 00:48:07.410 --> 00:48:10.340 have decreased statewide, which is good news.

988 00:48:10.340 --> 00:48:12.760 However, there are emerging concerns

989 00:48:12.760 --> 00:48:14.520 when issues we highlighted at the report

990 00:48:14.520 --> 00:48:18.343 is expansion of the lone star tick in Connecticut.

991 00:48:18.343 --> 00:48:20.320 Once a tick transmit a number of diseases

992 00:48:20.320 --> 00:48:23.580 and medical conditions that you can see on the slide,

993 00:48:23.580 --> 00:48:25.420 it's the most common human biting tick

994 00:48:25.420 --> 00:48:27.560 in the Southeastern U.S.

995 00:48:27.560 --> 00:48:30.690 It's expanding into Connecticut likely due to factors,

996 00:48:30.690 --> 00:48:33.140 including warming temperatures

997 00:48:33.140 --> 00:48:35.650 and especially warmer winters.

998 00:48:35.650 --> 00:48:38.080 Importantly established breeding populations

999 00:48:38.080 --> 00:48:40.690 were discovered in Fairfield County in 2018

1000 00:48:40.690 --> 00:48:43.613 and New Haven County where we are today in 2019,

1001 00:48:43.613 --> 00:48:46.933 meaning that ticks aren't transient but established here.

1002 00:48:49.280 --> 00:48:50.743 Finally air quality.

1003 00:48:52.050 --> 00:48:54.475 You may be aware that Connecticut has issues

1004 00:48:54.475 --> 00:48:56.520 with ground-level ozone solutions

1005 00:48:56.520 --> 00:48:58.910 which is a strong long year attempt.

1006 00:48:58.910 --> 00:49:01.824 And back to the American Lung Association gave each county

1007 00:49:01.824 --> 00:49:03.950 thinking that getting an upgrade for ozone solution

1008 00:49:03.950 --> 00:49:05.623 in its 2019 report.

1009 00:49:06.610 --> 00:49:09.273 And as you can see from this figure,

1010 00:49:11.040 --> 00:49:12.100 we found that while the number

1011 00:49:12.100 --> 00:49:15.643 of air quality alert days for ozone decreased over time,

1012 00:49:16.640 --> 00:49:18.240 the more still needs to be done.

1013 00:49:19.400 --> 00:49:20.910 Ground-level ozone is largely

1014 00:49:20.910 --> 00:49:22.810 the result of burning fossil fuels,

1015 00:49:22.810 --> 00:49:26.100 whether in our vehicles or power plants or our homes.

1016 00:49:26.100 --> 00:49:28.410 So this is where we can see the strong health benefit

1017 00:49:28.410 --> 00:49:31.690 of climate mitigation as other speakers have mentioned.

1018 00:49:31.690 --> 00:49:34.600 Switching into clean energy sources also drives,

1019 00:49:34.600 --> 00:49:37.313 also reduces fuse drivers of global air pollution.

1020 00:49:40.040 --> 00:49:41.790 And on that note I'll conclude

1021 00:49:41.790 --> 00:49:44.280 with our systems level recommendations

1022 00:49:44.280 --> 00:49:46.210 that we have in our report.

1023 00:49:46.210 --> 00:49:49.320 I invite you to read the report to learn more about those,

1024 00:49:49.320 --> 00:49:52.830 but I'll conclude with our overarching recommendation

1025 00:49:54.130 --> 00:49:55.620 for swift action to reduce

1026 00:49:55.620 --> 00:49:58.970 and eliminate greenhouse gas emissions in Connecticut

1027 00:49:58.970 --> 00:50:00.970 for our health today and for the future.

1028 00:50:07.030 --> 00:50:07.940 <v ->Thanks Laura.</v>

1029 00:50:07.940 --> 00:50:10.230 Think we could end it here.

1030 00:50:10.230 --> 00:50:12.290 Thanks to all the speakers

1031 00:50:12.290 --> 00:50:17.290 and thanks to everyone who attended and have a good day.

1032 00:50:20.190 --> 00:50:21.557 <v ->Thank you everyone.</v>