Expert Questionnaire for generation of strategic research options

Interviewer: Interview #:

Respondent: Institution: Date:

Contents

Context

To establish an effective and integrated prevention and control plan for zoonoses, the first step is to identify the knowledge gaps in a particular setting and prioritize them. A systematic research prioritization exercise was undertaken by the Public Health Foundation of India/Roadmap to Combat Zoonoses in India (PHFI/RCZI) [1] to identify the knowledge gaps and to generate research options to fulfill them using a modified adaptation of the methodology developed by the Child Health and Nutrition Research Initiative (CHNRI).[2] This methodology is now being extended to the context of South Africa as a part of a multi-country initiative as a part of the Strategic Network on Neglected Diseases and Zoonoses (SNNDZ)[3] to generate a more global understanding of knowledge gaps and research needs in zoonoses prevention and control. We are using an adaption of the CHNRI methodology (available at: http://www.chnri.org/ section/publications) developed by WHO and the Child Survival Group which has been validated in other research agenda.

The major conceptual advance in CHNRI is "the recognition that there should be a broader definition of health research option as an activity that is not only limited to producing new knowledge, but also has a vision of implementation of this knowledge which, in the end, should help to reduce disease burden present today." (CHNRI 2006)

The major methodological advance in CHNRI is two-fold. First, the systematic listing and scoring of competing research option in a structured way limits the influence of an expert's own biases on the outcome. Second, by weighing scores according to the values of a larger reference group, the "scientific assessment of the research priorities is combined with a view of the wider society in which the priorities should be implemented." (CHNRI 2006)

We adapted the CHNRI methodology to fit the needs of the setting in South Africa. First, since priority zoonotic concerns in South Africa are not pre-defined; we will solicit this information. Second, zoonotic diseases present different concerns in different disciplines and we face the task of reconciling a more diverse set of priorities.

Instructions

As a key expert on zoonoses, your input is critical for defining the Strategic Research Agenda for zoonoses prevention and control in South Africa. We are using a structured questionnaire in order to systematically collect and collate data. However, there will be ample opportunity for any input you may have which does not conform to the format of the questionnaire. The process is expected to take 45 – 90 minutes.

For the purpose of developing the initial vision of the Strategic Research Agenda, we will like you to identify the research options in the context of the national needs of South Africa for the next five years.

The questions cover a range of topics since the interview is targeted towards a diverse group of experts. It is not necessary to provide input on all topics, only where you feel comfortable in contributing.

---

[1] Available at: http://zoonoses.phfi.org

[2] Sekar, N., Shah, N. K., Abbas, S. S., & Kakkar, M. (2011). Research options for controlling zoonotic disease in India, 2010-2015. *PloS One*, *6*(2), e17120. http://doi.org/10.1371/journal.pone.0017120

[3] Available at: http://snndz.net

Research Categorisation

Instruments of Health Research categories for understanding types of research
IHR 1: Basic epidemiological research: *defines disease burden, its components, relative risks of different underlying factors and efficacy of the available interventions to reduce the burden*
A. Measuring the burden B. Understanding risk factors C. Evaluating existing interventions
IHR 2: Health policy and systems research: *generates new knowledge to enable more efficient use of available health care resources in reducing disease burden*
D. Studying system capacity to reduce exposure to proven health risks E. Studying system capacity to deliver efficacious interventions
IHR 3: Research to improve existing interventions: *aims to improve deliverability, affordability and sustainability of those interventions of proven efficacy*
F. Research to improve deliverability of existing interventions G. Research to improve affordability of existing interventions H. Research to improve sustainability of existing interventions
IH4: Research for development of new interventions: *includes approaches that leads to development of new interventions, ranging from exploring the role of possible risk factors to basic molecular and genomic research that would help understand processes leading to control of zoonotic disease*
I. Basic research J. Clinical research K. Public health research

Reference: Child Health and Nutrition Research Initiative. A new approach for systematic priority setting. 2006 Available at: http://www.chnri.org/secured/uploads/ publications/files/0535210001249198837-604_file_PRIORITY_SETTING_.pdf

Factorial	Examples
1. Genetic and Biological	microbial adaptation and change
	human susceptibility to infection
2. Physical and Environmental	climate and weather patterns
	physical events (e.g., earthquakes, flooding)
3. Ecological	changing ecosystems
	development and land use
4. Social, Political, Economic	human demographics and behavior
	technology and industry
	travel and commerce
	poverty and social inequity
	war and famine
	bioterrorism or intent to harm
	lack of political will
	breakdown of public health measures

Reference: Smolinski, M. S., Hamburg, M. A., Lederberg, J., ed. (2003). Microbial Threats to Health: Emergence, Detection, and Response. National Academic Press. http://www.nap.edu/catalog/10636.html

Section A: Identification of areas of concern

A 1. Please **identify up to five priority zoonotic diseases** that need to be addressed over the next five years in South Africa. Identify a broader class of diseases where appropriate (e.g., canine gastroenteritis may be more appropriate than canine giardia):

1. _____

2. _____

3. _____

4. _____

5. _____

A 2. Please identify **rationale** used in selecting the above diseases.

1. _____

2. _____

3. _____

4. _____

5. _____

A 3. For each disease, please list key **proven risk factors** and **interventions**

1. R:

   I:

2. R:

   I:

3. R:

   I:

4. R:

   I:

5. R:

   I:

A 4. List up to **three priority human populations** susceptible to /affected by zoonotic diseases over the next five years in [country]. Use more specificity where applicable, including age, gender, occupation, ethnicity, and location (e.g., factory farm workers in South Africa, adult males from hunter-gatherer tribes in mountainous zones)

1. _____

2. _____

3. _____

A 5. List **up to three priority commodities** important in the context of zoonoses in South Africa over the next five years. These can include domesticated animals (cats, dogs, horses, etc), farm animals and products (eg poultry, milk, leather), wildlife (eg wild birds, primates), and vectors (eg. soil, water).

1. _____

2. _____

3. _____

Section B: Identifying and classifying research options:

The next part of the questionnaire is designed to elicit specific areas of research necessary to control zoonotic diseases. The level of specificity of "research option" would be analogous to a proposal for 3-5 year research project Please answer the following questions for each of the five priority zoonotic diseases identified in Question A1.

B1: Disease 1

B1.1: Disease 1 IHR 1 (Basic Epi research)
Basic epidemiological research is defined as research related to disease burden, its components, relative risks of different underlying factors and efficacy of the available interventions to reduce the burden.

Do you think there is a need to conduct basic epidemiological research for [Disease 1] over the next five years in South Africa? (**Yes** / **No**) If YES, proceed to next question. If NO, then proceed to next IHR.

B.1.1.1. What aspects of disease burden need to be studied as a priority for this disease?

1. _____

2. _____

3. _____

4. _____

5. _____

B.1.1.2 What aspects of disease risks need to be studied as a priority for this disease?

6. _____

7. _____

8. _____

9. _____

10. _____

B.1.1.3. What priority research is needed to evaluate existing interventions for this disease?

11. _____

12. _____

13. _____

14. _____

15. _____

B1.2: Disease 1 IHR 2 (Health policy and systems research)
Health policy and systems research can be defined as research that enables more efficient use of available health care resources in reducing disease burden.

Do you think there is a need to conduct Health policy and systems research [Disease 1] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.1.2.1. Enlist priority research related to system capacity for reducing exposure to the disease.

16. _____

17. _____

18. _____

19. _____

20. _____

B.1.2.2. Enlist priority research related to understand capacity of systems to deliver efficacious interventions for disease prevention and control.

21. _____

22. _____

23. _____

24. _____

25. _____

B1.3: Disease 1 IHR 3 (Research to improve existing interventions)
Research to improve existing interventions can be defined as that which aims to improve deliverability, affordability and sustainability of those interventions of proven efficacy

Do you think there is a need to conduct Research to improve existing interventions for [Disease 1] over the next five years in South Africa? (**Yes** / **No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.1.3.1. Enlist priority research that will help improve **deliverability** of **existing** interventions.

26. _____

27. _____

28. _____

29. _____

30. _____

B.1.3.2. Enlist priority research that will help improve **affordability** of **existing** interventions.

31. _____

32. _____

33. _____

34. _____

35. _____

B.1.3.4. Enlist priority research that will help improve **sustainability** of **existing** interventions.

36. _____

37. _____

38. _____

39. _____

40. _____

B1.4: Disease 1 IHR 4 (Research for development of new interventions)

Research for development of new interventions includes approaches ranging from exploring the role of possible risk factors to basic molecular and genomic research that would help understand processes leading to control of zoonotic disease

Do you think there is a need to conduct Research for development of new interventions for [Disease 1] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.1.4.1. Enlist basic science research that needs to be conducted for development of new interventions for this disease.

41. _____

42. _____

43. _____

44. _____

45. _____

B.1.4.2. Enlist clinical research that needs to be conducted for development of new interventions for this disease.

46. _____

47. _____

48. _____

49. _____

50. _____

B.1.4.3. Enlist Public health research that needs to be conducted for development of new interventions for this disease.

51. _____

52. _____

53. _____

54. _____

55. _____

B1.5: Disease 1 Factorials

B.1.5.1. According to you, which are the priority knowledge gaps in the understanding of genetic and biological factors related to this disease? (eg. microbial adaptation and change, human susceptibility to infection)

56. _____

57. _____

58. _____

59. _____

60. _____

B.1.5.2. According to you, which are the priority knowledge gaps in the understanding of physical and environmental factors related to this disease? (Eg. climate and weather patterns; physical events such as earthquakes, flooding)

61. _____

62. _____

63. _____

64. _____

65. _____

B.1.5.3. According to you, which are the priority knowledge gaps in the understanding of ecological factors related to this disease? (eg. changing ecosystems; development and land use)

66. _____

67. _____

68. _____

69. _____

70. _____

B.1.5.4. According to you, which are the priority knowledge gaps in the understanding of social, political and economic factors related to this disease? (eg. human demographics; behavior; travel and commerce; poverty and social inequity; lack of political will; health systems issues)

71. _____

72. _____

73. _____

74. _____

75. _____

B2: Disease 2

Please answer the following questions about **[Disease 2]**

B2.1: Disease 2 IHR 1 (Basic Epi research)
Basic epidemiological research is defined as research related to disease burden, its components, relative risks of different underlying factors and efficacy of the available interventions to reduce the burden.

Do you think there is a need to conduct basic epidemiological research for [Disease 2] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.2.1.1. What aspects of disease burden need to be studied as a priority for this disease?

76. _____

77. _____

78. _____

79. _____

80. _____

B.2.1.2 What aspects of disease risks need to be studied as a priority for this disease?

81. _____

82. _____

83. _____

84. _____

85. _____

B.2.1.3. What priority research is needed to evaluate existing interventions for this disease?

86. _____

87. _____

88. _____

89. _____

90. _____

B2.2: Disease 2 IHR 2 (Health policy and systems research)
Health policy and systems research can be defined as research that generates new knowledge to enable more efficient use of available health care resources in reducing disease burden.

Do you think there is a need to conduct Health policy and systems research [Disease 2] over the next five years in South Africa? (**Yes** / **No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.2.2.1. Enlist priority research related to system capacity for reducing exposure to the disease.

91. _____

92. _____

93. _____

94. _____

95. _____

B.2.2.2. Enlist priority research related to understand capacity of systems to deliver efficacious interventions for disease prevention and control.

96. _____

97. _____

98. _____

99. _____

100._____

B2.3: Disease 2 IHR 3 (Research to improve existing interventions)
Research to improve existing interventions can be defined as that which aims to improve deliverability, affordability and sustainability of those interventions of proven efficacy

Do you think there is a need to conduct Research to improve existing interventions for [Disease 2] over the next five years in South Africa? (**Yes** / **No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.2.3.1. Enlist priority research that will help improve deliverability of existing interventions.

101._____

102._____

103._____

104._____

105._____

B.2.3.2. Enlist priority research that will help improve affordability of existing interventions.

106._____

107._____

108._____

109._____

110._____

B.2.3.4. Enlist priority research that will help improve sustainability of existing interventions.

111._____

112._____

113._____

114._____

115._____

B2.4: Disease 2 IHR 4 (Research for development of new interventions)
Research for development of new interventions includes approaches ranging from exploring the role of possible risk factors to basic molecular and genomic research that would help understand processes leading to zoonotic disease

Do you think there is a need to conduct Research for development of new interventions for [Disease 2] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.2.4.1. Enlist basic science research that needs to be conducted for development of new interventions for this disease.

116._____

117._____

118._____

119._____

120._____

B.2.4.2. Enlist clinical research that needs to be conducted for development of new interventions for this disease.

121._____

122._____

123._____

124._____

125._____

B.2.4.3. Enlist Public health research that needs to be conducted for development of new interventions for this disease.

126._____

127._____

128._____

129._____

130._____

B2.5: Disease 2 Factorials

B.2.5.1. According to you, which are the priority knowledge gaps in the understanding of genetic and biological factors related to this disease? (eg. microbial adaptation and change, human susceptibility to infection)

131._____

132._____

133._____

134._____

135._____

B.2.5.2. According to you, which are the priority knowledge gaps in the understanding of physical and environmental factors related to this disease? Eg. climate and weather patterns; physical events such as earthquakes, flooding)

136._____

137._____

138._____

139._____

140._____

B.2.5.3. According to you, which are the priority knowledge gaps in the understanding of ecological factors related to this disease? (eg. changing ecosystems; development and land use)

141._____

142._____

143._____

144._____

145._____

B.2.5.4. According to you, which are the priority knowledge gaps in the understanding of social, political and economic factors related to this disease? (eg. human demographics; behavior; travel and commerce; poverty and social inequity; lack of political will; health systems issues)

146._____

147._____

148._____

149._____

150._____

B3: Disease 3

Please answer the following questions about **[Disease 3]**

B3.1: Disease 3 IHR 1 (Basic Epi research)

Basic epidemiological research is defined as research related to disease burden, its components, relative risks of different underlying factors and efficacy of the available interventions to reduce the burden.

Do you think there is a need to conduct basic epidemiological research for [Disease 3] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.3.1.1. What aspects of disease burden need to be studied as a priority for this disease?

151._____

152._____

153._____

154._____

155._____

B.3.1.2 What aspects of disease risks need to be studied as a priority for this disease?

156._____

157._____

158._____

159._____

160._____

B.3.1.3. What priority research is needed to evaluate existing interventions for this disease?

161._____

162._____

163._____

164._____

165._____

B3.2: Disease 3 IHR 2 (Health policy and systems research)
Health policy and systems research can be defined as research that generates new knowledge to enable more efficient use of available health care resources in reducing disease burden.

Do you think there is a need to conduct Health policy and systems research [Disease 3] over the next five years in South Africa? (**Yes** / **No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.3.2.1. Enlist priority research related to system capacity for reducing exposure to the disease.

166._____

167._____

168._____

169._____

170._____

B.3.2.2. Enlist priority research related to understand capacity of systems to deliver efficacious interventions for disease prevention and control.

171._____

172._____

173._____

174._____

175._____

B3.3: Disease 3 IHR 3 (Research to improve existing interventions)
Research to improve existing interventions can be defined as that which aims to improve deliverability, affordability and sustainability of those interventions of proven efficacy

Do you think there is a need to conduct Research to improve existing interventions for [Disease 3] over the next five years in South Africa? (**Yes** / **No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.3.3.1. Enlist priority research that will help improve deliverability of existing interventions.

176._____

177._____

178._____

179._____

180._____

B.3.3.2. Enlist priority research that will help improve affordability of existing interventions.

181._____

182._____

183._____

184._____

185._____

B.3.3.4. Enlist priority research that will help improve sustainability of existing interventions.

186._____

187._____

188._____

189._____

190._____

B3.4: Disease 3 IHR 4 (Research for development of new interventions)
Research for development of new interventions includes approaches ranging from exploring the role of possible risk factors to basic molecular and genomic research that would help understand processes leading to zoonotic disease
Do you think there is a need to conduct Research for development of new interventions for [Disease 3] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.3.4.1. Enlist basic science research that needs to be conducted for development of new interventions for this disease.

191._____

192._____

193._____

194._____

195._____

B.3.4.2. Enlist clinical research that needs to be conducted for development of new interventions for this disease.

196._____

197._____

198._____

199._____

200._____

B.3.4.3. Enlist Public health research that needs to be conducted for development of new interventions for this disease.

201._____

202._____

203._____

204._____

205._____

B3.5: Disease 3 Factorials

B.3.5.1. According to you, which are the priority knowledge gaps in the understanding of genetic and biological factors related to this disease? (eg. microbial adaptation and change, human susceptibility to infection)

206._____

207._____

208._____

209._____

210._____

B.3.5.2. According to you, which are the priority knowledge gaps in the understanding of physical and environmental factors related to this disease? Eg. climate and weather patterns; physical events such as earthquakes, flooding)

211._____

212._____

213._____

214._____

215._____

B.3.5.3. According to you, which are the priority knowledge gaps in the understanding of ecological factors related to this disease? (eg. changing ecosystems; development and land use)

216._____

217._____

218._____

219._____

220._____

B.3.5.4. According to you, which are the priority knowledge gaps in the understanding of social, political and economic factors related to this disease? (eg. human demographics; behavior; travel and commerce; poverty and social inequity; lack of political will; health systems issues)

221._____

222._____

223._____

224._____

225._____

B4: Disease 4

Please answer the following questions about **[Disease 4]**

B4.1: Disease 4 IHR 1 (Basic Epi research)
Basic epidemiological research is defined as research related to disease burden, its components, relative risks of different underlying factors and efficacy of the available interventions to reduce the burden.

Do you think there is a need to conduct basic epidemiological research for [Disease 4] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.4.1.1. What aspects of disease burden need to be studied as a priority for this disease?

226._____

227._____

228._____

229._____

230._____

B.4.1.2 What aspects of disease risks need to be studied as a priority for this disease?

231._____

232._____

233._____

234._____

235._____

B.4.1.3. What priority research is needed to evaluate existing interventions for this disease?

236._____

237._____

238._____

239._____

240._____

B4.2: Disease 4 IHR 2 (Health policy and systems research)
Health policy and systems research can be defined as research that generates new knowledge to enable more efficient use of available health care resources in reducing disease burden.

Do you think there is a need to conduct Health policy and systems research [Disease 4] over the next five years in [country]? (**Yes** / **No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.4.2.1. Enlist priority research related to system capacity for reducing exposure to the disease.

241._____

242._____

243._____

244._____

245._____

B.4.2.2. Enlist priority research related to understand capacity of systems to deliver efficacious interventions for disease prevention and control.

246._____

247._____

248._____

249._____

250._____

B4.3: Disease 4 IHR 3 (Research to improve existing interventions)
Research to improve existing interventions can be defined as that which aims to improve deliverability, affordability and sustainability of those interventions of proven efficacy

Do you think there is a need to conduct Research to improve existing interventions for [Disease 4] over the next five years in South Africa? (**Yes** / **No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.4.3.1. Enlist priority research that will help improve deliverability of existing interventions.

251._____

252._____

253._____

254._____

255._____

B.4.3.2. Enlist priority research that will help improve affordability of existing interventions.

256._____

257._____

258._____

259._____

260._____

B.4.3.4. Enlist priority research that will help improve sustainability of existing interventions.

261._____

262._____

263._____

264._____

265._____

B4.4: Disease 4 IHR 4 (Research for development of new interventions)
Research for development of new interventions includes approaches ranging from exploring the role of possible risk factors to basic molecular and genomic research that would help understand processes leading to zoonotic disease

Do you think there is a need to conduct Research for development of new interventions for [Disease 4] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.4.4.1. Enlist basic science research that needs to be conducted for development of new interventions for this disease.

266._____

267._____

268._____

269._____

270._____

B.4.4.2. Enlist clinical research that needs to be conducted for development of new interventions for this disease.

271._____

272._____

273._____

274._____

275._____

B.4.4.3. Enlist Public health research that needs to be conducted for development of new interventions for this disease.

276._____

277._____

278._____

279._____

280._____

B4.5: Disease 4 Factorials

B.4.5.1. According to you, which are the priority knowledge gaps in the understanding of genetic and biological factors related to this disease? (eg. microbial adaptation and change, human susceptibility to infection)

281._____

282._____

283._____

284._____

285._____

B.4.5.2. According to you, which are the priority knowledge gaps in the understanding of physical and environmental factors related to this disease? Eg. climate and weather patterns; physical events such as earthquakes, flooding)

286._____

287._____

288._____

289._____

290._____

B.4.5.3. According to you, which are the priority knowledge gaps in the understanding of ecological factors related to this disease? (eg. changing ecosystems; development and land use)

291._____

292._____

293._____

294._____

295._____

B.4.5.4. According to you, which are the priority knowledge gaps in the understanding of social, political and economic factors related to this disease? (eg. human demographics; behavior; travel and commerce; poverty and social inequity; lack of political will; health systems issues)

296._____

297._____

298._____

299._____

300._____

B5: Disease 5

Please answer the following questions about **[Disease 5]**

B5.1: Disease 5 IHR 1 (Basic Epi research)

Basic epidemiological research is defined as research related to disease burden, its components, relative risks of different underlying factors and efficacy of the available interventions to reduce the burden.

Do you think there is a need to conduct basic epidemiological research for [Disease 5] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.5.1.1. What aspects of disease burden need to be studied as a priority for this disease?

301._____

302._____

303._____

304._____

305._____

B.5.1.2 What aspects of disease risks need to be studied as a priority for this disease?

306._____

307._____

308._____

309._____

310._____

B.5.1.3. What priority research is needed to evaluate existing interventions for this disease?

311._____

312._____

313._____

314._____

315._____

B5.2: Disease 5 IHR 2 (Health policy and systems research)
Health policy and systems research can be defined as research that generates new knowledge to enable more efficient use of available health care resources in reducing disease burden.

Do you think there is a need to conduct Health policy and systems research [Disease 5] over the next five years in South Africa? (**Yes** / **No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.5.2.1. Enlist priority research related to system capacity for reducing exposure to the disease.

316._____

317._____

318._____

319._____

320._____

B.5.2.2. Enlist priority research related to understand capacity of systems to deliver efficacious interventions for disease prevention and control.

321._____

322._____

323._____

324._____

325._____

B5.3: Disease 5 IHR 3 (Research to improve existing interventions)
Research to improve existing interventions can be defined as that which aims to improve deliverability, affordability and sustainability of those interventions of proven efficacy

Do you think there is a need to conduct Research to improve existing interventions for [Disease 5] over the next five years in South Africa? (**Yes** / **No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.5.3.1. Enlist priority research that will help improve deliverability of existing interventions.

326._____

327._____

328._____

329._____

330._____

B.5.3.2. Enlist priority research that will help improve affordability of existing interventions.

331._____

332._____

333._____

334._____

335._____

B.5.3.4. Enlist priority research that will help improve sustainability of existing interventions.

336._____

337._____

338._____

339._____

340._____

B5.4: Disease 5 IHR 4 (Research for development of new interventions)
Research for development of new interventions includes approaches ranging from exploring the role of possible risk factors to basic molecular and genomic research that would help understand processes leading to zoonotic disease
Do you think there is a need to conduct Research for development of new interventions for [Disease 5] over the next five years in South Africa? (**Yes / No**)

If YES, proceed to next question. If NO, then proceed to next IHR.

B.5.4.1. Enlist basic science research that needs to be conducted for development of new interventions for this disease.

341._____

342._____

343._____

344._____

345._____

B.5.4.2. Enlist clinical research that needs to be conducted for development of new interventions for this disease.

346._____

347._____

348._____

349._____

350._____

B.5.4.3. Enlist Public health research that needs to be conducted for development of new interventions for this disease.

351._____

352._____

353._____

354._____

355._____

B5.5: Disease 5 Factorials

B.5.5.1. According to you, which are the priority knowledge gaps in the understanding of genetic and biological factors related to this disease? (eg. microbial adaptation and change, human susceptibility to infection)

356._____

357._____

358._____

359._____

360._____

B.5.5.2. According to you, which are the priority knowledge gaps in the understanding of physical and environmental factors related to this disease? Eg. climate and weather patterns; physical events such as earthquakes, flooding)

361._____

362._____

363._____

364._____

365._____

B.5.5.3. According to you, which are the priority knowledge gaps in the understanding of ecological factors related to this disease? (eg. changing ecosystems; development and land use)

366._____

367._____

368._____

369._____

370._____

B.5.5.4. According to you, which are the priority knowledge gaps in the understanding of social, political and economic factors related to this disease? (eg. human demographics; behavior; travel and commerce; poverty and social inequity; lack of political will; health systems issues)

371._____

372._____

373._____

374._____

375._____

Section C: Stakeholder values

In the "threshold" column, please enter the minimum acceptable score (on a scale 0-100) for each criterion that should be achieved by proposed health research to receive funding support. In the "weight" column, please distribute a total of R 100 to the 5 proposed criteria to reflect how much does each criterion matter to you.

Criterion	Weight (Distribute R 100 across five criteria)
Answerability (likelihood that the research will indeed reach its proposed endpoints)	R
Deliverability, affordability & sustainability (likelihood that the results of the research will be delivered to those who need them in an affordable fashion)	R
Effectiveness (likelihood that the results of the research will have effect against the disease)	R
Equity (likelihood that the results of the research will improve health inequities in the population)	R
Maximum impact (likelihood that the research can influence reduction in a substantial share of disease cases)	R

Detailed description of scoring criteria

Criteria 1: Answerability and ethics
The research is likely to lead to discovery of new knowledge and would achieve its aims in an ethical way

Criteria 2: Deliverability, affordability and sustainability
The intervention based on proposed research will be deliverable (infrastructure: basic intervention design, communication and transport infrastructure, need for human resources), will be affordable (available resources in place to implement the intervention), and will be sustainable (government capacity and partnership requirements, ease of delivery and usage characteristics) in the given context.

Criteria 3: Efficacy and effectiveness
The research would yield information on impact of the intervention on disease/disability from zoonoses under ideal conditions, such as the randomized controlled trials and when implemented in the real world context

Criteria 4: Maximum potential for disease burden reduction
The research will lead to new knowledge that would expand the magnitude of impact of zoonotic disease interventions on human potential through the reduction of mortality, disease and promotion of health and economic development

Criteria 5: Equity in achieved disease burden reduction
The research will lead to new knowledge that would improve child health and nutrition interventions in a way that they would become more likely to benefit the most vulnerable populations (eg, the poor, visible minorities, children of female headed households, orphans) in the given context

---

Section D: Other information

What key papers or reports would you suggest to understand prior and ongoing research on zoonoses in South Africa?

Is there any information you would like to provide us about zoonotic diseases in South Africa that our questionnaire failed to solicit?