

BASELINE NARRATIVE REPORTING DOCUMENT: UNIVERSITY OF EAST ANGLIA, UK

In lieu of the full baseline data collection exercise taking place, please complete the following reporting document. One overarching document for the whole consortium is preferred. However, if it is easier, we are happy to also accept one form per consortium partner.

While the document predominately uses a narrative reporting format, we have also included space for inclusion of any quantitative data that may be available. Please try to include as much quantitative data as possible.

In addition, the final part of the form requests publication and grants data relating to co-applicants (named personnel within the original bid document). These are vital for successful review of the progress of the African Institutions Initiative and we request that you provide as much data here as possible.

Any queries regarding the forms should be sent to: r.e.hanlin@open.ac.uk

Please endeavour to return the completed form(s) to us by **30th November 2010**.

PART A: Capacity baseline

1. What was the situation with respect to scientific/ research related human resources capacity (research active staff, post-grads) within your relevant field of activity in your African partner institutions at baseline (September 2009)?

Narrative report:

Any additional supporting quantitative data:

2. What relevant training courses/ programmes (for post-graduate teaching in particular, but also professional development) were available within the partner institutions at baseline (September 2009)? Please distinguish between courses/ programmes available in Northern institutions and African institutions if possible.

Narrative report:

UEA runs a wide range of professional development courses for its research staff including:
Teaching Skills for Research Staff: Options 1 & 2
Leadership Skills for Research Staff: Options 1 & 2
An Introduction to Enterprise and Engagement for Research Staff
Creative Thinking Skills for Research Staff
Learning from Experience: Public and Community Engagement
Engagement Opportunities at UEA
Business Skills for Research Staff
'Bite-Sized' Careers Workshops

We also have a number of Masters level courses. Of particular relevance includes
Masters in Clinical Education and MSc in Clinical Research.

MED-M31D Introduction to Research Methods
MED-M32E Further Quantitative Methods: Design and Analysis
MED-M33F Further Qualitative Methods: Design and Analysis
AHP-M30D Personal Growth & Professional Development in the Workplace
AHP-M15E Self-Directed Literature Review
MED-M03E Psychosocial Aspects of Health
MED-M07D Health Economics
AHP-M29F Evidence Based Practice
MED-M28F Statistical Methods in Health Research
AHP-M10Y/MED-M10Y Research Dissertation
MED-M38F Introduction to Research Ethics and Governance

In addition we run training in Systematic review methodology

Any additional supporting quantitative data:

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| 3. What was the situation with respect to research management, governance and administration structures within your relevant field of activity in your African partner institutions at baseline (September 2009)? |
| Narrative report: |
| Any additional supporting quantitative data: |
| 4. What was the situation with respect to physical and ICT infrastructure within your relevant field of activity in your African partner institutions at baseline (September 2009)? Where any additional facilities based within Northern partner institutions regularly used by African partner institutions at baseline? |
| Narrative report: |
| Not specifically other than a stream of African PhD and Masters students |
| Any additional supporting quantitative data: |

PART B: Publication and grants situation

Please provide the following as additional annexes to this report:

- A list of co-applicants' publications (for the last 10 years). Data should relate to both African and Northern institutions.
- A list of co-applicants' grants (if possible for the last 10 years, minimum requirement is 5 years). Data should relate to both African and Northern institutions.

Co-Applicants publications 2000 onwards

Books

1. Percival S, Walker J, Hunter PR. *Microbiological Aspects of Biofilms in Drinking Water*. CRC Press, Boca Raton, 2000.
2. Hunter PR, Waite M, Ronchi E. (eds.) *Drinking Water and Infectious Disease: Establishing the Link*. CRC Press, Boca Raton, 2002.
3. Percival S, Embry M, Hunter P, Chalmers R, Sellwood J. *Microbiology of Waterborne Diseases: Microbiological Aspects and Risks*. Academic Press, 2004.
4. Lund BM, Hunter PR. *The Microbiological Safety of Food in Healthcare Settings*. Blackwell Publishing, Oxford, 2008.

Chapters

1. Payment PR, Hunter PR. Endemic and epidemic infectious intestinal disease and its relation to drinking water. In: Fewtrell L, Bartram J (eds) *Water Quality: Guidelines, Standards and Health. Risk assessment and management for water-related infectious disease*. IWA Publishing, London, 2001, pp 61-88.
2. Hunter PR, Fewtrell L. Acceptable risk. In: Fewtrell L, Bartram J (eds) *Water Quality: Guidelines, Standards and Health. Risk assessment and management for water-related infectious disease*. IWA Publishing, London 2001, pp 207-227.
3. Eisenberg J, Bartram J, Hunter PR. A Public Health perspective for establishing water-related guidelines and standards. In: Fewtrell L, Bartram J (eds) *Water Quality: Guidelines,*

- Standards and Health. Risk assessment and management for water-related infectious disease.* IWA Publishing, London, 2001, 229-256.
4. Hunter PR. Principles and components of surveillance systems. In: Hunter PR, Waite M, Ronchi E (eds). *Drinking Water and Infectious Disease: Establishing the Links*. CRC Press, Boca Raton, 2002, pp 3-11.
 5. Quigley C, Gibson JJ, Hunter PR. Local surveillance systems. In: Hunter PR, Waite M, Ronchi E (eds). *Drinking Water and Infectious Disease: Establishing the Links*. CRC Press, Boca Raton, 2002, pp 13-20.
 6. Hunter PR. International surveillance. In: Hunter PR, Waite M, Ronchi E (eds). *Drinking Water and Infectious Disease: Establishing the Links*. CRC Press, Boca Raton, 2002, pp 41-47.
 7. Quigley C, Hunter PR. A systems approach to the investigation and control of waterborne outbreaks. In: Hunter PR, Waite M, Ronchi E (eds). *Drinking Water and Infectious Disease: Establishing the Links*. CRC Press, Boca Raton, 2002, pp 53-65.
 8. Payment P, Hunter PR. Intervention studies. In: Hunter PR, Waite M, Ronchi E (eds). *Drinking Water and Infectious Disease: Establishing the Links*. CRC Press, Boca Raton, 2002, pp 191-196.
 9. Medema GJ, Payment P, Dufour A, Robertson W, Waite M, Hunter P, Kirby R, Andersson Y. Safe Drinking Water: An ongoing challenge. In: Dufour A, Snozzi M, Koster W (eds) *Assessing Microbial Safety of Drinking Water: Improving Approaches and Methods*. OECD/WHO, Paris, 2003, 11-45.
 10. Hunter P, Payment P, Bartram J, Ashbolt N. Assessment of Risk. In: Dufour A, Snozzi M, Koster W (eds). *Assessing Microbial Safety of Drinking Water: Improving Approaches and Methods*. OECD/WHO, Paris, 2003, 79-109.
 11. Hunter PR, Andersson Y, Von Bonsdorff CH, Chalmers RM, Cifuentes E, Deere D, Endo T, Kadar M, Krogh T, Newport L, Prescott A, Robertson W. Surveillance and investigation of contamination incidents and waterborne outbreaks. In: Dufour A, Snozzi M, Koster W (eds). *Assessing Microbial Safety of Drinking Water: Improving Approaches and Methods*. OECD/WHO, Paris, 2003, 205-236.
 12. Hunter PR. Epidemiological and risk assessment evidence of disease linked to HPC bacteria. In: Bartram J, Cotruvo J, Exner M, Fricker C, Glasmacher A (eds). *Heterotrophic Plate Counts and Drinking-water Safety, The Significance of HPCs for Water Quality and Human Health*. IWA publishing on behalf of the World Health Organization, London, 2003, 119-136.
 13. Nichols G, Chalmers R, Rooney R, Reacher M, Stanwell Smith R, Hunter PR, McLauchlin J, Lane C. The problem with *Cryptosporidium* in swimming pools. In: Thompson RCA (ed). *Cryptosporidium: from Molecules to Disease*. Elsevier Science, 2004, 367-368.
 14. Nichols G, McLauchlin J, Reacher M, Hunter P, Chalmers R. Surveillance of cryptosporidiosis: progressive approaches. In: Thompson RCA (ed). *Cryptosporidium: from Molecules to Disease*. Elsevier Science, 2004, 377-378.
 15. Clancy JL, Hunter PR. Monitoring of *Giardia* and *Cryptosporidium* in water in the UK and US. In: Sterling CR, Adam RD (eds) *World Class Parasites: Volume 8. The Pathogenic Enteric Protozoa: Giardia, Entamoeba, Cryptosporidium and Cyclospora*. Kluwer Academic Publishers, Norwell MA, 2004, pp. 129-139.
 16. Hunter PR, Reid M. Poor communication during a contamination event may cause more harm to public health than the actual event itself. In: Thompson KC, Gray J (eds). *Water Contamination Emergencies*. RSC Publishing, Cambridge, 2006 pp. 156-164.
 17. Hunter PR. Food hygiene in the wilderness. In: McLauchlin J, Little C (eds). *Hobbs' Food Poisoning and Food Hygiene*, 7th edn. Hodder 2007.
 18. Hunter PR. Provision of water in healthcare settings. In: Lund BM, Hunter PR (eds). *The Microbiological Safety of Food in Healthcare Settings*. Blackwell Publishing, Oxford, 2008. pp. 337-350.

19. Calderon R, Hunter P. Epidemiological studies and the association of cardiovascular disease risks with water hardness. In: *Calcium and Magnesium in Drinking Water. Public Health Significance*. World Health Organization, Geneva, 2009, pp. 110-144.
20. Hunter PR. Molecular epidemiology of Cryptosporidium and Giardia infections. In: Ortega-Pierres G, Cacciò S, Fayer R, Mank TG, Smith HV, Thompson RCA. *Giardia and Cryptosporidium from molecules to disease*. CABI, Wallingford, 2009, pp. 138-146.
21. Nichols G, Lake IR, Chalmers RM, Bentham G, Harrison FCD, Hunter PR, Kovats S, Grundy C, Anthony S, Lyons H, Agnew M, Proctor C. Intervention in waterborne disease. In: Ortega-Pierres G, Cacciò S, Fayer R, Mank TG, Smith HV, Thompson RCA. *Giardia and Cryptosporidium from molecules to disease*. CABI, Wallingford, 2009, pp. 227-237.
22. Hunter PR. The causes of waterborne disease. In: Ayres JG, Harrison RM, Nichols GL, Maynard RL. *Environmental Medicine*. Hodder Arnold, London, 2010, 373-379.

Peer-reviewed publications

1. Fitzpatrick PR, Salmon RL, Hunter PR, Roberts RJ, Palmer SR. Risk factors for carriage of epidemic and non-epidemic strains of *Neisseria meningitidis* carriage during an outbreak school. *Emerging Infectious Diseases* 2000; **6**: 65-69.
2. Santaniello-Newton A, Hunter PR. Management of an outbreak of meningococcal meningitis in a Sudanese refugee camp in Northern Uganda. *Epidemiology and Infection* 2000; **124**: 75-81.
3. Barrell RAE, Hunter PR, Nichols G. Microbiological standards for water and their relationship to health risk. *Communicable Disease and Public Health* 2000; **3**: 8-13.
4. Hunter PR. Advice on the response to reports from public and environmental health to the detection of cryptosporidial oocysts in treated drinking water *Communicable Disease and Public Health* 2000; **3**: 24-27.
5. Hunter P, Harbottle J, Smithson HC, Lindoe-Wood R. A Randomised control trial of ciprofloxacin in the management of malaria. *Travel Medicine International* 2000; **18**: 52-54.
6. Hunter PR. Waterborne outbreak of Microsporidiosis (Letter). *Journal of Infectious Diseases* 2000; **182**: 380-381.
7. McCullagh J, Evans M, McDonald P, Simpson R, Hunter P. The use of a geographical information system for managing the public health consequences of a major chemical release. *Chemical Incident Report* 2000; October: 9-12.
8. Vardhan MS, Agarwal DS, Hunter PR. Methicillin resistant *Staphylococcus aureus* in a Delhi teaching hospital (Letter). *Journal of Hospital Infection* 2000; **46**: 158-159.
9. Hunter PR. Modelling the impact of prior immunity, case misclassification and bias on case-control studies in the investigation of outbreaks of cryptosporidiosis. *Epidemiology and Infection* 2000; **125**: 713-718.
10. Hunter PR, Syed Q. Community surveys of self-reported diarrhoea can dramatically overestimate the size of outbreaks of waterborne cryptosporidiosis. *Water Science and Technology*. 2001; **43** (12): 27-30.
11. Woodhouse S, Hunter PR. Risk of invasive meningococcal disease in school workers in Cheshire, United Kingdom. *Clinical Infectious Diseases* 2001; **32**: 1795-1797.
12. Hunter PR, Syed Q, Naumova EN. Possible undetected outbreaks of cryptosporidiosis in areas of the North West of England supplied by an unfiltered surface water source. *Communicable Disease and Public Health* 2001; **4**: 136-138.
13. Hunter PR, Colford JM, LeChevallier MW, Binder S, Berger PS. Waterborne diseases. *Emerging Infectious Diseases* 2001; **7**: 544-545.
14. Hunter PR, Nichols G. The epidemiology and clinical features of cryptosporidium infection in immune-compromised patients. *Clinical Microbiology Reviews* 2002; **15**: 145-154.
15. Chalmers RM, Elwin K, Reilly WJ, Irvine H, Thomas AL, Hunter PR. Cryptosporidium in farmed animals: the detection of a novel isolate in sheep. *International Journal of Parasitology* 2002; **32**: 21-26.

16. Hunter PR. Appropriate calculation of the 95th percentile of microbiological results in determining compliance with bathing water quality standards. *Letters in Applied Microbiology*. 2002; **34**: 283-286.
17. Howe AD, Forster S, Morton S, Marshall R, Osborn K, Wright P, Hunter PR. *Cryptosporidium* oocysts in a water supply associated with an outbreak of cryptosporidiosis. *Emerging Infectious Diseases*. 2002; **8**: 619-624.
18. Hunter PR, Syed Q. Recall bias in a community survey of self-reported gastroenteritis undertaken during an outbreak of cryptosporidiosis strongly associated with drinking water after much press interest. *Epidemiology and Infection* 2002; **128**: 433-438.
19. Hunter PR. International Report: Health-related water microbiology. *Water Science and Technology: Water Supply*. 2002; **2** (3): 139-146.
20. Chalmers RM, Hughes S, Thomas A, Woodhouse S, Thomas PD, Hunter P. Laboratory ascertainment of *Cryptosporidium* and local authority public health policies for the investigation of sporadic cases of cryptosporidiosis in two regions of the United Kingdom. *Communicable Disease and Public Health* 2002; **5**: 114-118.
21. Hoveyda F, Davies WAR, Hunter PR. Cryptosporidiosis in pregnancy. *European Journal of Clinical Microbiology and Infectious Disease*. 2002; **21**: 637-638.
22. McDerment F, Hall Y, Hunter PR. Microbiological quality of drinking water from mobile food vendors. *Communicable Disease and Public Health* 2002; **5**: 299-300.
23. Hunter PR, Chalmers RM, Syed Q, Hughes LS, Woodhouse S, Swift L. Foot and Mouth disease and cryptosporidiosis: possible interaction between two emerging infectious diseases. *Emerging Infectious Diseases* 2003; **9**: 109-112.
24. Horby PW, O'Brien SJ, Adak GK, Graham C, Hawker JI, Hunter P, Lane C, Lawson AJ, Mitchell RT, Reacher MH, Threlfall EJ, Ward LR. A national outbreak of multi-resistant *Salmonella enterica* serovar Typhimurium definitive phage type (DT) 104 associated with consumption of lettuce. *Epidemiology and Infection* 2003; **130**: 169-178.
25. Hunter PR. Climate Change and Waterborne and Vector-borne Disease. *Journal of Applied Microbiology* 2003; **94**: 37S-46S.
26. Hunter PR. Drinking water and diarrhoeal disease due to *Escherichia coli*. *Journal of Water and Health* 2003; **1**: 65-72.
27. Parkin RT, Embrey MA, Hunter PR. Water-Related Health Risk Communication: Lessons Learned and Emerging Issues. *Journal of the American Water Works Association* 2003; **95(7)**: 58-66.
28. Hunter PR, Davies MA, Hill K, Whittaker M, Sufi F. The prevalence of self-reported symptoms of respiratory disease and community belief about the severity of pollution from various sources. *International Journal of Environmental Health* 2003; **13**: 227-238.
29. Hunter PR, Izsák J, Nehaul L. Changes of neoplasm concentration with geographical coordinates. *Health and Place* 2003; **9**: 305-313.
30. Hoveyda N, Yates B, Bond CR, Hunter PR. A cluster of cases of abdominal pain possibly associated with high copper levels in a private water supply. *Journal of Environmental Health* 2003; **66(2)**: 29-32.
31. Hunter PR. National disease burden due to waterborne transmission of nosocomial pathogens is substantially overestimated. *Archives of Internal Medicine* 2003; **163**: 1974.
32. Hunter PR, Bickerstaff K, Davies MA. Potential sources of bias in the use of individual's recall of the frequency of exposure to air pollution for use in exposure assessment in epidemiological studies: a cross-sectional survey. *Environmental Health: A Global Access Science Source* 2004; **3**:3.
33. Swift L, Hunter PR. What do negative associations between potential risk factors and illness in analytical epidemiological studies really mean? *European Journal of Epidemiology* 2004; **19**: 219-223.
34. Hunter PR, Hughes S, Woodhouse S, Syed Q, Verlander NQ, Chalmers RM, Morgan K, Nichols G, Beeching N, Osborn K. Case-Control Study Sporadic Cryptosporidiosis with genotyping. *Emerging Infectious Diseases*. 2004; **10**: 1241-1249.

35. Bell D, Robertson S, Hunter PR. Animal origins of SARS Coronavirus: possible links with the international trade in small carnivores. *Philosophical Transactions of the Royal Society*. 2004; **359**: 1107–1114
36. Williams CJ, Willocks L, Lake IR, Hunter PR. Geographic correlation between deprivation and risk of meningococcal disease: an ecological study. *BMC Public Health* 2004; **4**: 30
37. Hughes S, Syed Q, Woodhouse S, Lake I, Osborn K, Chalmers R, Hunter PR. Using a Geographical Information System to investigate the relationship between reported cryptosporidiosis and water supply. *International Journal of Health Geographics* 2004; **3**: 15
38. Hunter PR, Hughes S, Woodhouse S, Raj N, Syed Q, Chalmers RM, Verlander NQ, Goodacre J. Health Sequelae of Human Cryptosporidiosis in Immunocompetent Patients. *Clinical Infectious Diseases*. 2004; **39**: 504-510.
39. Hunter PR, Chalmers RM, Hughes S, Syed Q. Self Reported Diarrhea in a Control Group: A Strong Association with Reporting of Low Pressure Events in Tap Water. *Clinical Infectious Diseases*. 2005; **40**: e32-e34.
40. Bunbury N, Bell D, Jones C, Greenwood A, Hunter P. Comparison of the InPouch TF Culture System and Wet-Mount Microscopy for Diagnosis of *Trichomonas gallinae* Infections in the Pink Pigeon *Columba mayeri*. *Journal of Clinical Microbiology* 2005; **43**: 1005-1006.
41. Naumova EN, Christodouleas J, Hunter PR, Syed Q. Temporal and spatial variability in cryptosporidiosis recorded by the surveillance system in North West England in 1990 - 1999. *Journal of Water and Health* 2005; **3**: 185-196.
42. Hunter PR, Thompson RCA. The zoonotic transmission of *Giardia* and *Cryptosporidium*. *International Journal for Parasitology* 2005; **35**: 1181-1190.
43. Chawla R, Hunter PR. Classification of Bathing Water Quality based on the Parametric Calculation of Percentiles is unsound. *Water Research* 2005; **39**: 4552-4558.
44. Doria MF, Pidgeon N, Hunter P. Perception of tap water risks and quality: a structural equation model approach. *Water Science and Technology* 2005; **52**: 143-149.
45. Hunter P. Incubation at 44°C as a test for faecal coli. *Epidemiology and Infection* 2005; **133** (Suppl. 1): S17-S18.
46. Rundblad G, Chilton PA, Hunter PR. An Enquiry into Scientific and Media Discourse in the MMR Controversy: Authority and Factuality. *Communication and Medicine* 2006; **3**: 69-80.
47. Doria MF, Abubakar I, Chalmers R, Syed Q, Hughes S, Hunter PR. Perceived causes of sporadic cryptosporidiosis. *Journal of Epidemiology and Community Health*. 2006; **60**: 745-750.
48. Hunter PR, Hadfield SJ, Wilkinson D, Lake IR, Harrison FCD, Chalmers RM. Subtypes of *Cryptosporidium parvum* in humans and disease risk. *Emerging Infectious Diseases*. 2007; **13**: 82-88.
49. Abubakar I, Aliyu SH, Arumugam C, Hunter PR, Usman NK. Prevention and treatment of cryptosporidiosis in immunocompromised patients. *Cochrane Database of Systematic Reviews* 2007, Issue 1. Art. No.: CD004932. DOI: 10.1002/14651858.CD004932.pub2.
50. Abubakar I, Myhill DJ, Hart AR, Lake IR, Harvey I, Rhodes JM, Robinson R, Lobo AJ, Probert CSJ, Hunter PR. A Case Control Study of Drinking Water and Dairy Products in Crohn's Disease – Further Investigation of the Possible Role of *Mycobacterium avium* paratuberculosis. *American Journal of Epidemiology* 2007; **165**: 776-783.
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52. Swift L, Hunter PR, Lees AC, Bell DJ. The wildlife trade and the emergence of infectious diseases. *EcoHealth* 2007; **4**: 25-30.
53. Abubakar I, Aliyu SH, Arumugam C, Usman NK, Hunter PR. Treatment of Cryptosporidiosis in immunocompromised individuals: Systematic review and Meta-analysis. *British Journal of Clinical Pharmacology* 2007; **63**: 387-393.
54. Risebro HL, Hunter PR. European Surveillance Systems for the detection of waterborne disease. *Journal of Water and Health* 2007; **5** (suppl. 1): 19-38.

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56. Mons MN, van der Wielen JML, Blokkern EJM, Sinclair MI, Hulshof KFAM, Dangendorf F, Hunter PR, Medema GJ. Estimation of the consumption of cold tap water for microbiological risk assessment: an overview of studies and statistical analysis of data. *Journal of Water and Health* 2007; **5** (suppl. 1): 151-170.
57. Abubakar I, Irvine L, Aldus CF, Wyatt GM, Fordham R, Schelenz S, Shepstone L, Howe A, Peck M, Hunter PR. A systematic review of the clinical, public health and cost-effectiveness of rapid diagnostic tests for the detection and identification of bacterial intestinal pathogens in faeces and food. *Health Technology Assessment* 2007; **11**(36):1-216.
58. Nakato H, Vivancos R, Hunter PR. A systematic review and meta-analysis of the effectiveness and safety of atovaquone-proguanil (Malarone) for chemoprophylaxis against malaria. *Journal of Antimicrobial Chemotherapy*. 2007; **60**: 929-936.
59. Elwin K, Chalmers RM, Hadfield SJ, Hughes S, Hesketh LM, Rothburn MM, Muller T, Hunter PR. Serological Responses to *Cryptosporidium* in the Human Population Living in Areas Reporting High and Low Incidence of Reported Symptomatic Cryptosporidiosis. *Clinical Microbiology and Infection* 2007; **13**: 1179-1185.
60. Lake IR, Harrison FCD, Chalmers RM, Bentham G, Nichols G, Hunter PR, Kovats RS, Grundy C. Case-control study of environmental and social factors influencing cryptosporidiosis. *European Journal of Epidemiology* 2007; **22**: 805-811.
61. MacDonald C, Stenberg A, Hunter PR. A Systematic Review and Meta Analysis of Interventions Aimed at Reducing Exposure to House Dust on the Development and Severity of Asthma. *Environmental Health Perspectives*. 2007; **115**: 1691-1694.
62. Abubakar I, Myhill D, Aliyu SH, Hunter PR. Detection of *Mycobacterium avium* Subspecies *paratuberculosis* from Patients with Crohn's Disease Using Nucleic Acid-Based Techniques: A Systematic Review and Meta-analysis. *Inflammatory Bowel Disease* 2008; **14**: 401-410.
63. Stenberg A, MacDonald C, Hunter PR. How effective is good domestic kitchen hygiene at reducing diarrhoeal disease in developed countries?: a systematic review and reanalysis of the UK IID study. *BMC Public Health* 2008; **8**: 71.
64. Chalmers RM, Hadfield SJ, Jackson CJ, Elwin K, Xiao L, Hunter P. Geographic linkage and variation in *Cryptosporidium hominis*. *Emerging Infectious Diseases*. 2008; **14**: 496-498.
65. Hashizume M, Wagatsuma Y, Faruque ASG, Hayashi T, Hunter PR, Armstrong B, Sack DA. Factors determining vulnerability to diarrhoea during and after severe floods in Bangladesh. *Journal of Water and Health*. 2008; **6**: 323-332.
66. Catling LA, Abubakar I, Lake IR, Swift L, Hunter PR. A systematic review of analytical observational studies investigating the association between cardiovascular disease and drinking water hardness. *Journal of Water and Health*. 2008; **6**: 433-442.
67. Vivancos R, Abubakar I, Hunter PR. Sex, drugs and sexually transmitted infections in British university students. *International Journal of STD and AIDS*. 2008; **19**: 370-377.
68. Hunter PR, Wilkinson DC, Catling LA, Barker GC. A meta-analysis of experimental data on antimicrobial resistance gene transfer rates during conjugation. *Applied and Environmental Microbiology*. 2008; **74**: 6085-6090.
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71. MacDonald C, Stenberg A, Hunter P. Revisão sistemática e meta-análise de intervenções para reduzir a exposição à poeira doméstica e seu efeito sobre o desenvolvimento e severidade da asma. A Systematic Review and Meta Analysis of Interventions Aimed at Reducing Exposure to House Dust on the Development and Severity of Asthma. *Ciência & Saúde Coletiva* 2008; **13**: 1907-1915.

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73. Lake IR, Nichols G, Harrison FCD, Graham Bentham G, Kovats RS, Grundy C, Hunter PR. Using infectious intestinal disease surveillance data to explore illness aetiology; a cryptosporidiosis case study. *Health and Place* 2009; **15**: 333-339.
74. Hunter PR. Bibliometrics, research quality and neglected tropical diseases. *Lancet* 2009; **373**: 630-631.
75. Hunter PR, Zmirou-Navier D, Hartemann P. Estimating the impact on health of poor reliability of drinking water interventions in developing countries. *Science of the Total Environment* 2009; **407**: 2621-2624
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80. Al-Ghamdi MA, Bentham G, Hunter PR. Environmental risk factors for diarrhoea among male schoolchildren in Jeddah City, Saudi Arabia. *Journal of Water and Health* 2009; **7**: 380-391.
81. Vivancos R, Abubakar I, Hunter PR. Sexual behaviour, drugs and alcohol use of international students at a British university: Cross-sectional survey. *International Journal of STD and AIDS*. 2009; **20**: 619-22.
82. Doria MT, Hunter PR, Pidgeon N. Perceptions of drinking water quality and risk and its effect on behaviour: A cross-national study. *Science of the Total Environment*. 2009; **407**: 5455-5464.
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85. Hunter PR. House-hold water treatment in developing countries comparing different intervention types using meta-regression. *Environmental Science & Technology* 2009; **43**: 8991-8997.
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87. Vivancos R, Abubakar I, Hunter PR. Foreign Travel associated with increased sexual risk taking, alcohol and drug use among UK university students, a cohort study. *International Journal of STD and AIDS* 2010; **21**: 46-51.
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101. Hunter PR, Anderle de Saylor M, Risebro HL, Nichols GL, Kay D, Hartemann P. Quantitative microbial risk assessment of Cryptosporidiosis and Giardiasis from very small private water supplies. *Risk Analysis* In press
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Co-Applicants Grants 2000 onwards

| Awarding Organization | Status | Brief title/description | Amount awarded | Dates |
|---|--------|--|----------------|-----------|
| Department for the Environment, Transport and the Regions | PI | Prevalence of <i>Mycobacterium avium</i> and <i>Mycobacterium paratuberculosis</i> in a variety of water distribution systems. | £145,000 | 1999-2001 |

| Awarding Organization | Status | Brief title/description | Amount awarded | Dates |
|---|--------|--|----------------|-----------------------|
| Department for the Environment, Transport and the Regions, United Utilities & NW Region NHSME | PI | Epidemiology and risk factors for sporadic cryptosporidiosis | £145,000 | Mar 2000-2003 |
| EU 5 th Framework | CoApp | Microbiological risk assessment: a scientific basis for managing drinking water safety from source to tap MICRORISK EVK1-CT-2002-00123 | €1.5 mill | Oct 2002 – Sep 2005 |
| Department of Environment, Food and Rural Affairs | PI | A study of sources of drinking water and Crohn's disease. A possible role for <i>Mycobacterium paratuberculosis</i> . | £138,237 | Dec 2002 – Dec 2004 |
| Department of Environment, Food and Rural Affairs | CoApp | Sub-genotyping of <i>Cryptosporidium</i> and linking this to epidemiological data DWI/70/2/125-II | £99,800 | April 2002 – Jun 2004 |
| NHS – Eastern Region | PI | Clinical Lectureship in Health Protection | £158,079 | Jan 2003 – Dec 2005 |
| Health Protection Agency | PI | Risk and private water supplies – PhD Studentship | £49,807 | Oct 2003 – Sep 2006 |
| Wellcome Trust | CoApp | The impact of environment and Water Supply Management upon Cryptosporidiosis in the UK 073122/Z/03/Z | £130,350 | Dec 2003 – Nov 2005 |
| Leverhulme Trust | CoApp | Identifying the drivers of <i>Cryptosporidium</i> concentration in drinking water F/00204/S | £66,466 | May 2004 – Oct 2005 |
| Chambre Syndicale des Eaux Minérales | PI | Quantitative Risk Assessment of the transmission of antimicrobial drug resistance associated with consumption of water | £65,441 | May 2004 - Apr 2005 |
| The Wolfson Foundation | CoApp | Start-up for a new Centre for Emerging Infectious Disease | £250,000 | July 2004 - |
| NCCHTA | CoApp | Systematic review of the clinical, public health and cost effectiveness of rapid diagnostic tests for the detection and identification of intestinal pathogens in faeces, food and water | £86,589 | Feb 2005 – June 2006 |
| Department of Environment, Food and Rural Affairs | PI | Water hardness and cardiovascular mortality | £21,486 | Dec 2004 – April 2006 |

| Awarding Organization | Status | Brief title/description | Amount awarded | Dates |
|---|--------|--|--------------------------|-----------------------|
| Southern Water | PI | Risk assessment of point source contamination of bathing waters | £12,000 | Sep 2005 – Feb 2006 |
| EU 6 th Framework | CoApp | Epibathe – Assessment of Human Health Effects caused by bathing waters 022618 | €1,999,829 (£51,766) | Dec 2005 – Dec 2007 |
| EU 6 th Framework | CoApp | Assessment of human health impacts from emerging microbial pathogens in drinking water by molecular and epidemiological studies (Healthy-Water) 36306 | €2,908,065 (€440,000) | Oct 2006 – Dec 2009 |
| Department of Environment, Food and Rural Affairs | CoApp | Water hardness and cardiovascular mortality | £21,486 | Dec 2004 – April 2006 |
| Department of Environment, Food and Rural Affairs | CoApp | Investigation of Genetic variation within <i>Cryptosporidium hominis</i> for epidemiological purposes DWI70/2/PM | £24,190 | Dec 2004 – April 2006 |
| World Health Organization | CoApp | Evaluation of the Costs & Benefits of Water and Sanitation Improvements VS/06/UEA/A3 | US\$251,933 | Jul 2006 – Sep 2007 |
| Food Standards Agency & Department of Health | CoApp | The second study of infectious intestinal disease in the community - determining disease burden and calibrating national surveillance systems in the United Kingdom B18021 | £5.7 million | Apr 2006 – Jun 2010 |
| Food Standards Agency | CoApp | Risk assessment of irrigation practices | £48,674 | Sep 2006 – Mar 2007 |
| NERC | CoApp | Seasonal environmental hazards: a multi-disciplinary approach to the analysis of health risks in lower-income countries NE/E009042/1 | £93,673.64 | Sep 2007 – |
| NERC | CoApp | Human health risks from contaminated tap water. Can we use microbial ecology to assess the integrity of water distribution systems? | £124,945.01 | Sep 2007 – |
| Health Protection Agency | CoApp | Use of facemasks in pandemic influenza control – can they be reused? | £26,871 | ? |
| Leverhulme Trust | CoApp | The impact of language and cognition on compliance during a natural disaster F/07040/AM | £98,240 | Sep 2008 – June 2010 |
| EU 7 th Framework | CoApp | Responses – European responses to climate change: deep emissions reductions and mainstreaming of mitigation and adaptation | €3,149,659 | Jan 2010 – Dec 2012 |

| Awarding Organization | Status | Brief title/description | Amount awarded | Dates |
|-----------------------|--------|---|----------------|----------------------|
| Wellcome Trust | CoApp | SNOWS-Strengthening Environmental Health Research in Africa | £1,000,000 | Oct 2009 – Sept 2014 |
| DEFRA | PI | Review of the current monitoring to support the position on <i>E. coli</i> O157 | £92,000 | Oct 2010 – Sept 2011 |
