

Institution: University of Surrey
Unit of Assessment: UOA 4 Psychology, Psychiatry and Neuroscience
Title of case study: Changing Risk Behaviours and Practices in Relation to Zoonotic Diseases
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>Lyme borreliosis (LB) is on the increase with over 3000 clinically or serologically diagnosed cases/pa in the UK. Alerting the public to LB risk has to be balanced against encouraging or undermining countryside use for health and recreational benefits.</p> <p>The reach and significance of impact was initially built into the research with end-user stakeholders involved in the study design, interpretation and application of the results to change public and organisations' risk communication practices.</p> <p>End-user impact has been acknowledged in an independent Economic and Social Research Council (ESRC) evaluation as well as a local authority tick awareness campaign.</p>
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>This research is part of a wider programme investigating how policies (e.g. preventative health) and practices (e.g. risk communication) can be improved to respond more effectively to both new and established plant and animal diseases. The aim was to investigate how risk communication to the public and countryside workers about one zoonotic disease, Lyme borreliosis (LB, aka Lyme disease), could be made more effective. The project included social and natural scientists. The objectives of the psychology component were</p> <ol style="list-style-type: none"> a) to understand the prior awareness, preventative knowledge and actions of various stakeholders including members of the public, workforce, land managers, and those who have contracted the disease, b) to propose alternative management and communication strategies and evaluate them for acceptability to public users of the forest, efficacy in encouraging preventative action, and practicality of implementation by land managers, c) to propose communication strategies targeted at the different audiences, and propose the management strategies that would facilitate a proportionate response. <p>Risk perception and communication were explored through individual interviews, questionnaires, focus groups, and analysis of existing precautionary information. The risk perceptions of members of the public diagnosed with LB were explored by means of</p> <ol style="list-style-type: none"> i) Cross-sectional postal questionnaire survey with participants recruited in collaboration with the Lyme Borreliosis Unit, Health Protection Agency, Southampton. 333 participants were identified following positive serological blood tests for LB antibodies, of which 145 were recruited and received a questionnaire when their positive tests for LB were returned to their GP; ii) Qualitative interview study to explore patient understandings of contracting LB using a random sub-sample of 32 respondents; iii) 66 face-to-face interviews and focus groups investigating the risk perceptions of countryside residents and visitors exposed to the hazard of tick bites; iv) Risk perceptions of countryside, forest staff through focus groups; v) Postal questionnaire survey of 250 Forestry Commission staff (office and forest-based); vi) Telephone interviews with 21 FC District Managers to explore their experiences of

communicating forest hazards and LB risk to the public and of dealing with public concerns.

Those who had contracted LB and recreationalists made a clear distinction between precautions taken during the countryside visit and those taken after. There was a clear preference for those taken *after* the visit, an option that is consistent with the delayed transference of bacteria from tick to humans, but which would be less appropriate with some other zoonotic diseases. Frequent countryside users were least likely to endorse 'during visit' precautions. This is in marked contrast to much precautionary advice, and suggests that such advice is likely to encounter resistance.

A new strategy encouraging post-visit precautionary behaviour is likely to be more effective. There were significant differences in the way organisations such as the Forestry Commission communicate risk to their staff (i.e. excellent) and visitors (i.e. more variable). The duty of care towards visitors was less well understood and the legal term, "*volenti non fit injuria*" was cited. This has important implications for risk communication and precautionary advice.

3. References to the research (indicative maximum of six references)

1. O'Brien, L., Marzano, M. and White, R.H. (2013) 'Participatory interdisciplinarity': Towards the integration of disciplinary diversity with stakeholder engagement for new models of knowledge production', *Science and Public Policy*, 40, 1, 1–11
2. O'Brien, L., Marcu, A., Marzano, M., Barnett, J., Quine, C. and Uzzell, D. (2012) Situating risk in the context of a woodland visit: a case study on Lyme Borreliosis, *Scottish Forestry*, 66, 4, 14-24.
3. Uzzell, D., Marcu, A., and Barnett, J (2012) Whose Lyme is it Anyway? Subject Positions and the Construction of Responsibility for Managing the Health Risks from Lyme Disease, *Health and Place*, 18, 5, 1101 - 1109 (IF: 2.694) (<http://dx.doi.org/10.1016/j.healthplace.2012.04.012>)
4. Marcu, A., Uzzell, D. & Barnett, J. (2011) Making sense of unfamiliar risks in the countryside: the case of Lyme disease, *Health and Place*, 17, 3, 843-850. (IF: 2.694)
5. Quine, CP; Barnett, J; Dobson, ADM; Marcu, A; Marzano, M; Moseley, D; O'Brien, L; Randolph, SE; Taylor, JL; Uzzell, D. (2011) 'Frameworks for risk communication and disease management: the case of Lyme disease and countryside users', *Philosophical Transactions of the Royal Society B*, (2011) 366, 1573, 2010–2022 (IF: 6.05)

4. Details of the impact (indicative maximum 750 words)

Impact in terms of both *reach* and *significance* was designed into the project from the outset. This involved the establishment of a *Practitioner Panel* (PrP) whose purpose was to test the feasibility and practicality of risk communication proposals. The PrP comprised representatives from more than twenty public, private and third sector organisations (e.g. National Parks, Natural England, Woodland Trust, Deer Commission for Scotland, Royal Parks, Country Land and Business Association, Health Protection Scotland). The research was also aided by a *Project Advisory Board* (PAB) comprising public health protection, wildlife, visitor and land management perspectives to provide expert advice. Both the PrP and the PAB commented on the research design, the interpretation and application of the results.

Engagement with end-user stakeholders included a workshop for animal health staff at Defra, a RELU Risk Workshop at York, a Forest Research publication for professional foresters, a RELU Policy and Practice Note (27, 2011) '*Protecting countryside users against zoonotic diseases: the scope for influencing behaviour?*' and a contribution to the Health Protection Agency *Zoonoses*

Network Newsletter (11, Jan 2011). The latter resulted in an invitation to address the UK Public Health Network for Zoonoses (UKPHNZ) in June 2011. The project website is maintained by the Forestry Commission (www.forestry.gov.uk/fr/animaldiseaserisks) to ensure that GPs, countryside landowners/managers and the public have on-going access to the research reports, academic papers and conference presentations. This includes an 'FAQ' section as a tool for information dissemination in response to questions received. The Visitor Safety in the Countryside Group (consortium of governmental, NGO, landowning and advisory bodies) has drawn on our research to communicate risk management information on LB.

In addition to presentations at national and international scientific conferences, nine presentations in 2010 were made to stakeholder groups including the Defra Food and Farming Group, landowners/managers, representatives of medical/veterinary organisations, and delegates to the annual Health Protection Agency conference. Presentations were made to the public at the ESRC Festival of Social Science and at the National Science and Engineering Week at Alice Holt Forest.

The practical management actions (detailed below in PrP Evaluation Survey) were founded in our multidisciplinary approach, which led to new ways of thinking about and developing strategies for communicating about, and managing, zoonotic diseases. On the recommendation of the PrP two conceptual frameworks (Quine et al., 2011) were developed into decision tools to a) assist stakeholders' organisations make decisions about how to manage environmentally acquired risks, by delineating five categories of organisational response to disease incidence (i.e., targeted control of hazard; medical intervention; influencing behaviour; research and surveillance; lobbying for action), and b) aid decision-making as to how stakeholders should be part of this decision-making process in order to influence behaviour. One PrP member (i.e., Royal Parks, Richmond) used the organisational response framework to structure their responses to zoonotic threats. This was specifically noted in the ESRC Impact Evaluation of the RELU programme (Meagher, 2012, 18; 22): "Conceptual impacts infiltrated localised or individual thinking.... helping stakeholders to think through complexity, as with the Royal Parks' use of a project's framework to help with Lyme disease risk communication led to a wider appreciation amongst stakeholders, practitioners and experts of "the multi-faceted nature of risk communication, and specifically that the information deficit model of framing health advice should be challenged", along with understanding of how to influence people's behaviour to help manage the issues."

The PrP completed a Practitioner Panel Evaluation Survey to explore their engagement with, and evaluation of the benefits of the project (O'Brien *et al*, 2013). They identified three key impacts of the project on their work:

1. *Understanding and thinking.* A better understanding about LB and how their participation had changed the way they worked or thought about LB, e.g., by suggesting opportunities to influence current practice in the management of zoonoses within their organisation, to raise awareness of visitors, schools, and in wildlife ranger training; it contributed to a public health approach to LB.
2. *Participation.* Their ability to express their views to others, learn from others, and make a positive contribution to the discussions and project.
3. *Methods and issues.* The interdisciplinary mix of methods in the project enabled them to take a more holistic approach to their understanding of LB and facilitated their identification of key issues surrounding LB.

Guildford Borough Council are implementing a tick awareness campaign on the high-risk North Downs, drawing on the behaviour change strategies advocated by our research which challenge conventional risk management approaches. Wellsphere, a US Health information and support

group have encouraged their members to consult our research findings, publicly saying “Thank you David Uzzell, here is hoping that in time this will encourage organisations to take a proactive approach to warning the public of the possibilities of tick borne diseases.”

5. Sources to corroborate the impact (indicative maximum of 10 references)

- a) Richmond Park Superintendent, Royal Parks (Member of the PrP) (Contact details provided)
- b) Forest Research (Member of the PrP): <http://www.forestry.gov.uk/fr/INFD-635FCP> (Contact details provided)
- c) Principal Environmental Health Officer, Guildford Borough (Contact details provided)
- d) O'Brien, L. , Marzano, M. and White, R.M. (2013) ‘Participatory interdisciplinarity’: Towards the integration of disciplinary diversity with stakeholder engagement for new models of knowledge production , *Science and Public Policy*, 40, 1, 1–11 doi:10.1093/scipol/scs120
- e) Meagher, L. R. (2012) *Report on Rural Economy and Land Use Programme (RELU): Societal and Economic Impact Evaluation (Ref: PS110020) Submitted 20th June 2012.* (Available from <http://www.nerc.ac.uk/research/programmes/relu/documents/relu-final-report.pdf> Accessed 12 February 2013)
- f) Visitor Safety in the Countryside Group - <http://vscg.co.uk/good-practice/published/ticks-and-lyme-disease>
- g) Wellsphere/Remedy Health Media - <http://www.wellsphere.com/lyme-disease-article/research-by-surrey-university-could-help-people-in-guildford-as-it-encourages-authorities-to-raise-awareness-of-the-dangers-of/1646569>