Institution: University of Warwick

Unit of Assessment: Law

Title of case study: Putting health outcomes at the heart of housing law and policy

Period when the underpinning research was undertaken: 2004 - 2016

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
David Ormandy	Professor (Emeritus)	1996 - 2018

Period when the claimed impact occurred: August 2013 - July 2020

Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact (indicative maximum 100 words)

Ormandy's research into housing conditions in the UK has led to a fundamental change in law and policy that shapes housing standards in the UK today and is also having a significant effect globally. Ormandy's research has demonstrated the fundamental importance of placing health outcomes at the heart of housing policy. Ormandy led the development of the UK Housing Health and Safety Rating System (HHSRS) which has been an integral part of English law on assessing housing conditions for 13 years and has had profound and demonstrable impacts on health outcomes in the current REF period - saving hundreds of millions to the NHS and billions of pounds to wider society each year. HHSRS has also now been adapted for use in New Zealand (2017) and the US (2014). Ormandy has also "strongly contributed to elevating housing and health on the World Health Organisation and international public health agenda" (**5.7)**.

2. Underpinning research (indicative maximum 500 words)

Ormandy has, for more than 20 years, been at the forefront of international research into the impact of housing on health outcomes. Commissioned by the Department of the Environment, Professor Ormandy and his project team, in collaboration with the UK Building Research Establishment and the London School of Hygiene and Tropical Medicine, conducted research which proposed a major reform of the way in which conditions in housing were assessed and controlled (**3.5**). The project culminated in the Housing Health and Safety Rating System (HHSRS), made law in 2006 and still in operation today.

Research leading to the development of the HHSRS included extensive literature reviews that enabled the identification of 29 potential housing hazards that could threaten the health and/or safety of residents. Hazards include, but are not limited to, damp and mould growth, excess cold, excess heat, and entry by intruders (**3.5** and **3.6**). The hazards cover all aspects of health and safety, including both physiological and psychological requirements, and protection against infection and against accidents. For example, Ormandy identifies that dampness in housing not only causes threats to physical health through mould spores and mites, but also threats to psychological wellbeing through residents becoming ashamed of their home and thus socially isolated, making it a crucial aspect of 'healthy housing' that requires regulation (**3.1**).

The HHSRS represents a critical change in the focus of housing assessment. Previously, assessment in England and Wales had focused on the defects present in buildings, whereas Ormandy's research and the HHSRS shifted the focus to the potential threats to residents' health and/or safety attributable to these defects. The HHSRS also introduced assessment of risks previously not accounted for and increased attention on other critical issues. For example, research by Ormandy (**3.2**) identified that there are threats to health when ambient temperatures in housing are above 24°C or below 18°C and identified the factors which can increase

susceptibility to these health threats. Research on this topic has led to the inclusion in the HHSRS of health risks associated with thermal efficiency (relating to 'cold homes' and associated respiratory conditions and Excess Winter Deaths) which had not been covered before.

Ormandy's work has continued to highlight the human, social, and economic costs of poor housing. A 2010 study "clearly demonstrates that money invested in improving poor housing could have a significant impact in improving health and reducing the financial burden on the NHS" (**3.4**, p.v), while a study in 2015 demonstrated the serious impacts of low/high temperatures caused by poor housing and the legal and other action that should be taken to protect those who are vulnerable to the serious health impacts that can occur as a result (**3.2**). The latter study led Ormandy to be awarded the President of the Chartered Institute of Environmental Health's Researcher of the Year Award (**3.2** and **5.14**) on the basis that it "demonstrated [Ormandy's] continuing passion and commitment to addressing the real needs of those living in poor housing, and providing the evidence base for colleagues to take action" (**5.14**).

Ormandy has also undertaken research which has investigated housing and health issues internationally. In 2011 he co-produced a report which creates a methodology for estimating the disease burden caused by inadequate housing conditions for European countries (**3.3**). He has also partnered with the Medical Studies and Research Development Departments of EDF, the second biggest energy company in the world, where he used the legal framework utilised in the HHSRS to show that cost savings for the French health system exceeded costs of upgrading energy inefficient dwellings (**3.1**).

Ormandy's research has clearly demonstrated that housing conditions have a significant effect on health, particularly on the very young, the elderly, and other vulnerable individuals, and that a legal system which ensures safe and healthy housing can significantly reduce illness and injury. It also demonstrates significant benefits for society, including local and national economies, educational achievement, and social inclusion (**3.4**).

On pieces **3.1-3.4** Ormandy was lead author and produced the initial drafts of the research. On **3.5** he co-ordinated the group who produced the research and had overall responsibility for the final research output. On **3.6** he was second author providing expertise based on previous research undertaken.

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

3.1 Ormandy, D. and Ezratty V. (2016) 'Housing, Health and the Domestic Environment', in Clay's *Handbook of Environmental Health* (21st edition), ed. Battersby, S, Oxford, UK: Routledge. ISBN 9780415716710.

3.2 Ormandy, D. and Ezratty, V. (2015), 'Thermal discomfort and health: protecting the susceptible from excess cold and excess heat in housing', *Advances in Building Energy Research*, DOI: 10.1080/17512549.2015.1014845.

3.3 Braubach, M., Jacobs, D.E., and **Ormandy, D.** (2011) *Environmental Burden of Disease associated with Inadequate Housing*, Copenhagen, Denmark: WHO Europe.

3.4 Roys, M., Davidson, M., Nicol, S., **Ormandy, D.** and Ambrose, P. (2010) *The Real Cost of Poor Housing*, Bracknell: IHS BRE Press.

3.5 Ormandy, D., Battersby, S., Moore, R., and Court R. (2006) *Housing Health and Safety Rating System: Operating Guidance*, London, UK: Office of the Deputy Prime Minister (A4, 188pp plus CD with *Worked Examples* pdf, 148pp).

3.6 Moore, R. and **Ormandy, D.** (2004) *Home Safety in the UK: Review of the Influence of Human and Housing Factors*, in Reviews on Environmental Health, 19 (3-4) 253-270.

On the basis of (**3.2**), Ormandy was awarded the President of the Chartered Institute of Environmental Health's Researcher of the Year Award. **3.6** is a peer reviewed article in a leading

international interdisciplinary journal. **3.3, 3.4 and 3.5** are all based on funded research from the World Health Organisation, a prestigious charitable trust and the UK government.

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

Throughout the current REF impact period, Ormandy's research has been of vital importance in putting health at the heart of housing law and policy in the UK and in other countries across the world. This has resulted in significant economic impacts, through savings in healthcare costs, and significant social impacts, through improving the living conditions of people in the UK and beyond.

A. NATIONAL IMPACT

The HHSRS was introduced in 2006 and has had an important impact since that date, especially in the current REF period. It has been described by the Former Head of Extreme Events and Health Protection, at Public Health England, who was in post from 2013-18 as "invaluable in providing a systematic approach to assessing housing conditions and explicitly linking hazards in the home to health outcomes." (**5.1**).

The current importance of the HHSRS can be gauged from its fundamental role as the first criterion in the contemporary definition of the Government's Decent Homes Standard - a minimum government standard which all council and housing association homes should meet. In England and Wales, the HHSRS is used on a daily basis as the statutory method for assessment of housing conditions. Local authorities are required by the Housing Act (2004) to use the tool to determine whether enforcement action is necessary to ensure that potential housing hazards are removed or minimised.

The HHSRS categorizes hazards, with the most serious hazards (category 1) requiring local authorities to take action to make the property safe. Many local authorities report finding and acting upon category 1 hazards, leading to health-enhancing improvements in living conditions for many renters. The English Housing Survey reports that in 2019 (the latest figures available), 10% of the housing stock had a HHSRS Category 1 hazard, down from 21% in 2009 (**5.2**, p.4). Minister for Housing and Homelessness, Heather Wheeler MP in 2018 attributed recent declines in these hazards directly to the HHSRS, confirming that the HHSRS was working "really, really well" to achieve this goal (**5.3**, p.23).

We can quantify the impact of these improvements. The existence of the HHSRS has allowed studies to be undertaken (Ormandy co-authored the first of these studies – **3.4**) which make it possible to estimate the cost of unsatisfactory housing. Poor quality housing leads to health problems that cost the NHS GBP1,400,000,000 and wider society GBP18,600,000,000 (**5.4**, p.1). Since the majority of the cost (around 70%) is associated with Category 1 hazards, the reduction achieved in these hazards due to the HHSRS is saving hundreds of millions to the NHS and billions of pounds to wider society per year. More importantly, it is ensuring that many thousands of tenants avoid serious injury and illness.

Ormandy's research has also been "instrumental in driving action across a range of national and local governmental and non-governmental organisations to tackle issues of fuel poverty and cold homes." (**5.1**). For example, Liverpool City Council's Healthy Homes Programme (2014 to present) has led to over 6,000 HHSRS inspections being undertaken, resulting in "over 4,410 category 1 hazards being identified and removed […] with over GBP5,450,000 in investment by private sector landlords generated […] and 47,278 occupants benefitting from these referrals." (**5.5**, p.4). These types of programmes utilise the HHSRS to make significant improvements to housing and to seriously improve health outcomes for many thousands of tenants across the country.

Building on his work on the serious impacts of low/high temperatures caused by poor housing (**3.2**), Ormandy worked with Public Health England to establish minimum indoor temperature

thresholds for winter (which are then communicated to the UK population, with a focus on the elderly and other vulnerable people) as part of the national Heatwave and Cold Weather Plans (HCWPs) from 2015 onwards. These have now been adopted by the World Health Organization (**5.1**). In 2016, he was also commissioned by the UK Building Research Establishment (BRE), the largest UK charity dedicated to research in the built environment, to co-produce guidance and assessment procedures on overheating in dwellings (**5.6**) which is vitally important in the context of longer and more intense heatwaves.

B. INTERNATIONAL IMPACT

"Professor Ormandy has strongly contributed to elevating housing and health on the WHO and international public health agenda." (Technical Officer, World Health Organisation, **5.7**). He worked with the WHO to produce and extensively test a methodology for assessing the impacts of housing on health which was then used to develop housing and health action plans in Portugal and Krygystan (**5.7**). He was then a key member of the WHO working group which produced the International Housing and Health Guidelines (IHHG) published in 2018, in particular playing a leading role in relation to guidelines on energy issues and home injuries (**5.7**). The IHHG is the first international instrument to set out principles and practices to inform housing law and policy around the world (**5.7**). They provide practical recommendations to support national governments in developing strategies for reducing the health burden due to unsafe and substandard housing conditions and are designed to inform housing policies and regulations at the national, regional and local level on the impact of housing on health.

Ormandy has also undertaken work in many individual countries. In New Zealand, Ormandy played a key role in developing the University of Otago's Healthy Housing Index (2009) and this was then translated (with Ormandy again advising) into the subsequent Rental Warrant of Fitness (2017) which adapted the UK's HHSRS for use in New Zealand (**5.1, 5.8, 5.9**). New Zealand's housing has well recognised quality problems that affect the health and safety of occupants. Housing in the private-rental sector is in worse condition than in the owner-occupier housing sector with "mould, poor maintenance, and insufficient insulation and ventilation widespread" (**5.9**, p.2). Those on low incomes, the elderly, children, disabled people and Maori and Pacific peoples are more likely to be affected by cold and damp rental homes (**5.10**), and yet these buildings had "no inspection regime after original construction signoff" (**5.9**, p.1**).** The Rental Warrant of Fitness, introduced through the Healthy Homes Guarantee Act 2017 and subsequent Residential Tenancies (Healthy Homes Standards) Regulations 2019 rectified this problem. It applies to all people living in rental homes and creates a set of standards which requires that homes be adequately heated, insulated and ventilated, protected from draughts and damp and be well drained (**5.8, 5.10**). As in the UK, this regulatory system is therefore set to significantly affect health outcomes, particularly for some of the most vulnerable and marginalised people in the country.

The UK HHSRS has also been adapted for use in the United States (**5.1** and **5.11**). Ormandy collaborated with the US Department of Housing and Urban Development (HUD) to produce the Healthy Home Rating System (HHRS) and the National Healthy Housing Standard (NHHS), launched in 2014. Compliance with HHRS is a pre-requisite for cities, states and non-governmental organisations obtaining a HUD Healthy Homes grant. HUD gives out many millions of dollars of grants each year, for instance in 2020, USD45,000,000 of Healthy Homes grants were provided (**5.12**, p.8**).** As a result, HHRS is having a significant impact on threats to health in many thousands of homes across the US. HUD is now seeking to have both HHRS and NHHS "broadly adopted across the country" (**5.11**). Ormandy has also been working with EDF, the second biggest energy company in the world. This work has demonstrated that the costs of upgrading energy inefficient dwellings occupied by households on the lowest income are exceeded by the savings to the French health system. This has "contributed to raising the profile of the link between energy inefficiency and health in France." (**5.13**).

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

5.1 Statement from Angie Bone, Former Head of Extreme Events and Health Protection, Public Health England (2013-18) and current Deputy Chief Health Officer, Victoria, Australia.
5.2 Ministry of Housing, Communities & Local Government, *English Housing Survey Headline Report, 2019-20* (2020)
5.3 House of Commons, Housing, Communities and Local Government Committee, *Private rented sector, Fourth Report of Session 2017–19: Report together with formal minutes relating to the report* (19 April 2018)
5.4 Roys, Nicol, Garrett, Margoles, *The full cost of poor housing* (IHS BRE Press, 2016)
5.5 Liverpool City Council, *Liverpool Healthy Homes: Delivering sustainable health and housing improvements* (26 April 2017).
5.6 Dengel, Swainson, Ormandy, Ezratty, *BRE Guidance Document: Overheating in Dwellings* (BRE Trust, 2016)
5.7 Statement from Dr Röbbel, Technical Officer at the World Health Organisation.
5.8 Statement from Phillippa Howden-Chapman, Director of the New Zealand Centre for Sustainable Cities, Co-Director, He Kainga Oranga/Housing and Health Research Programme, University of Otago.
5.9 Telfar-Barnard, Bennett, Howden-Chapman, Jacobs, Ormandy, Cutler-Welsh, Preval, Baker, Keall, 'Measuring the effect of housing quality interventions: the case of the New Zealand "rental warrant of fitness' *International journal of environmental research and public health* 14, no.11 (2017): 1352.
5.10 Ministry of Housing and Urban Development, *New Zealand Regulatory Impact Statement: Healthy Homes Impact Standards* (7 December 2018).
5.11 Statement from Dr David E. Jacobs, Chief scientist at the National Center for Healthy Housing (US), and Director of the US Collaborating Center for Research and Training on Housing Related Disease and Injury for the World Health Organization (WHO) and the Pan American Health Organization.
5.12 Department of Housing and Urban Development, *Lead Hazard Control and Healthy Homes:2020 Summary of Resources* (no date).
5.13 Statement from Veronique Ezratty, Environmental Health Risk Assessor at the Medical Studies Department (Service des Etudes Médicales) EDF.
5.14 Statement from Tim Everett, President of the Chartered Institute of Environmental Health, UK.