

Impact case study (REF3)

Institution: University College London		
Unit of Assessment: 22 – Anthropology and Development Studies		
Title of case study: Improving global Type 2 diabetes prevention and care by shaping public health interventions and policymaking in 36 global cities		
Period when the underpinning research was undertaken: 2008-2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): David Napier	Role(s) (e.g. job title): Professor, Medical Anthropology	Period(s) employed by submitting HEI: 2004-Present
Period when the claimed impact occurred: 2015-2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact (indicative maximum 100 words)		
<p>The rise in obesity and associated noncommunicable diseases' (NCDs) such as type 2 diabetes is one of the most serious challenges for the health of populations around the world. Napier developed a research method that identifies rapidly and systematically diabetes- and other health vulnerabilities in urban populations to enhance health promotion and disease prevention strategies, and to improve practices at local community, city, and national levels. The research is implemented through the Cities Changing Diabetes (CCD) programme (covering 36 cities in Africa, Asia, Europe, North America and South America with a combined population of over 200,000,000). The method is being applied to assess COVID-19 vulnerabilities across Europe and informed the policy brief, <i>Improving Pandemic Response: Global Lessons and Cultural Insights from COVID-19</i>, supported by the Robert Wood Johnson Foundation.</p>		
2. Underpinning research (indicative maximum 500 words)		
<p>David Napier is an expert in researching the cultural contexts of health. The body of work produced over the course of four decades has created an internationally recognised resource for understanding the broader drivers of health and illness in many diverse settings.</p> <p>In 2014, Napier was lead author of the <i>Lancet Commission on Culture and Health [R1]</i>, a three-year project that critically examined the role of culture in health, in health care provision, and in health inequalities. The Commission demonstrated how a failure to recognise the intersection of culture with other structural and societal factors creates and compounds poor health outcomes, multiplying financial, intellectual, and humanitarian costs [R1]. It differentiated between the social determinants (the conditions into which we are born and grow up and the wider societal, political and economic structures of a group of people) and the cultural drivers of health (the shared practices and assumptions of groups and communities), showing how social factors can be conceptualised as emerging from conventional understandings and value systems – i.e., 'culture'. Napier was also the principal author of a 2017 World Health Organization (WHO) policy brief, <i>Culture matters: using a cultural contexts of health approach to enhance policy-making</i>, which laid out how and what policy makers can gain from applying insights from the humanities and social sciences to their work. The brief demonstrated that cultural awareness is central to understanding health and wellbeing and to developing more effective and equitable health policies [R2].</p> <p>From a practice-oriented point of view, Napier has extensive expertise in developing research methods, in producing research protocols, and in collaborating with experts from diverse fields on health-related projects. For example, he was the lead social scientist in the 2008 Myanmar Post-Nargis Periodic Review [R3], for which a rapid response Vulnerability Assessment was developed to assess UN relief efforts and to facilitate strategic decision-making after the devastation of Cyclone Nargis. Using a multi-sectoral household questionnaire and closed and open-ended interview protocols, Napier's pioneering method [R3] synthesized individual case studies with large data sets and showed the utility of combining qualitative with quantitative data in a disaster setting. As importantly, it established new, locally valid case definitions of vulnerability by appraising three domains: formal (health service availability and utilization), community (local-level adaptations and their scalability), and vulnerability (what happens when resources are stressed and some are left out). Building on the overall structure of this work carried out in Myanmar, Napier in 2015 became the Global Academic Lead for the Cities Changing Diabetes (CCD) partnership programme – the focus of this case study. CCD, an ongoing partnership between UCL, Novo Nordisk, and the Steno Diabetes Center Copenhagen (as well as new members C40</p>		

and the EAT Foundation) – was founded in 2014 to challenge siloed approaches to solving health-related challenges with an emphasis on diabetes and obesity in urban settings.

Novo Nordisk has provided more than USD25,000,000 funding for the project, a research-led initiative based on a ‘map-share-act’ approach now adopted in the 36 CCD partner cities [I]. Napier’s argument that social factors emerge from cultural factors [R1/R2] led conceptually to the development of a core mixed-method research tool, including a Diabetes Vulnerability Assessment (D-VA) which examines the three vulnerability domains of inquiry described above [R3]. Napier is the project’s Global Academic Lead and collaborates with fieldworkers and senior research staff in each city to gather data on the ground about diabetes epidemiology in urban environments. In partner cities, these innovative data collection and analysis protocols generate an understanding of the diabetes burden (as described in [R4]), producing both global and local insights [R2/R4]. These insights are shared with local stakeholders and global programme partners, facilitating proactive diabetes prevention and health promotion projects, and the findings from each city are published (e.g. [R5/R6]). The CCD research framework has been widely used to measure levels of access to clinical care, the drivers of clinical adherence, and the effects of treatment [R4], and the Diabetes Vulnerability Assessment (D-VA) in particular has shed light on the social determinants and cultural factors relevant to health, well-being, and diabetes more specifically.

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

- R1.** Napier, A. D., Ancarno, C., Butler, B., Calabrese, J., Chater, A., Chatterjee, H., Jadhav, S. (2014). *Culture and Health*. *The Lancet*, 384(9954): 1607-1639. [https://doi.org/10.1016/S0140-6736\(14\)61603-2](https://doi.org/10.1016/S0140-6736(14)61603-2)
- R2.** Napier, A. D., Depledge, M., Knipper, M., Lovell, R., Ponarin, E., Sanabria, E., & Thomas, F. (2017). *Culture matters: using a cultural contexts of health approach to enhance policy making (policy brief, No.1)*. Copenhagen, Denmark: World Health Organization - Regional Office for Europe. <https://bit.ly/3eIWBJD>
- R3.** United Nations, Napier, D., et al. (2008). Post-Nargis Periodic Review I: A report prepared by the Tripartite Core Group (Government of Myanmar, ASEAN, and the United Nations), December 2008. <https://bit.ly/3cdAuCx>
- R4.** Napier, A.D. et al (2017). “Study protocol for the Cities Changing Diabetes programme: a global mixed-methods approach”. *BMJ Open*, November, 9: 1-7. <http://dx.doi.org/10.1136/bmjopen-2016-015240>
- R5.** Linder, S., Volkmann, A. -. M., Wisniewski, T., Hesseldal, L., & Napier, D. (2018). “Understanding Social and Cultural Factors Associated with Composite Vulnerability to Better Inform Community Intervention Strategies: Cities Changing Diabetes in Houston”. *Int Arch Public Health Community Med*. <https://doi.org/10.23937/iaphcm-2017/1710016>.
- R6.** Chen, J., Jing, X., Liu, X., Volkmann, A. -. M., Chen, Y., Liu, Y., Napier, D., Ma, J. (2019). “Assessment of factors affecting diabetes management in the City Changing Diabetes (CCD) study in Tianjin”. *PLOS ONE*, 14 (2), ARTN e0209222. <https://doi.org/10.1371/journal.pone.0209222>

All outputs were peer reviewed.

Funding

- i. Novo Nordisk, to UCL to support CCD: GBP217,039 in 2019 and GBP221,280 in 2020
- ii. ‘A Global Social Sciences Network for Infectious Threats and Antimicrobial Resistance’, 2019-2021, EC Horizon 2020, EUR4,306,347.50 (GBP276,523 to UCL). Napier was UCL lead.

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

Health is social and cultural, as well as biomedical, and largely generated outside clinical environments. However, most interventions around diabetes and obesity do not take this into account. Type 2 diabetes in particular is a condition in which all modifiable risk factors (e.g. physical inactivity, unhealthy diet, smoking) are firmly situated within the social and cultural domain, as Napier shows in [R1]. The Cities Changing Diabetes (CCD) programme brings together multiple stakeholders working across sectors and disciplines to address this complex health issue. After using a mixed methods approach [R4] based on Napier’s method [R3] to

ascertain each city's specific vulnerabilities to Type 2 diabetes, partner organizations identify and implement interventions based on the social and cultural determinants of health. The goal of CCD is to flatten the curve of global diabetes prevalence at 10% in 2045; in time, these new policies will improve health outcomes for the 437,000,000 people with diabetes (2017 project baseline).

Instigating and influencing the design of local city government-led programmes and initiatives in programme partner cities: Through the CCD programme, Napier's research has led to changes in practice in a diverse range of community groups and public sector organizations and to the introduction of new interventions to prevent diabetes. The Vice President of Global Prevention and Health Promotion at global healthcare company Novo Nordisk explains that "Napier has been instrumental in developing and applying tools and research methods to assess risk and vulnerability within the field of urban diabetes and obesity, with a particular focus on understanding the underlying social determinants and cultural factors that drive this risk." Through CCD "[t]his work has guided public health officials in many cities around the world to redesign public health interventions to more appropriately address health inequity in their local setting" **[A]**.

Houston joined CCD in 2014 (population with diabetes estimated at 469,000 in 2017). The Deputy Assistant Director of the Houston Health Department, a key stakeholder in CCD Houston, explained that "by collaborating with Dr Napier and UCL we have [...] developed strategic evidence-based public health interventions that will have sustainable impact not just to the Houston community but communities worldwide" **[B]**. Alongside a lack of trust in traditional healthcare systems, Houston's Diabetes Vulnerability Assessment (D-VA) revealed vulnerabilities such as unhealthy food traditions, long commutes and low health literacy. In Houston, faith is deeply integrated into daily life and houses of faith (that is, places of worship, faith leaders and congregations) are the primary community for many Houstonians. Therefore a Faith and Diabetes initiative, formed from a coalition of 80 faith-based organizations and partner organisations such as charity the Institute for Spirituality and Health, was established to empower communities of faith to better understand and address diabetes awareness, prevention and management. The Faith and Diabetes Initiative's first intervention was The Congregational Health Leadership Programme, introduced in 2016. As the Deputy Assistant Director explains, "this train-the-trainer programme prepares congregational members to implement evidence-based primary prevention programs and a 6-week lifestyle change programme for members already diagnosed with diabetes. 132 trainers, serving a community of more than 75,000 residents of Houston, have completed the course to date" **[B]**. This in turn "inspired congregation leaders to initiate other health-promoting activities, for example improving healthy food options at church events or outlets" **[B]**. One of the main objectives of the D-VA is to identify new case definitions **[R4]**: sets of complex and often heterogeneous risk factors that fuel one another locally. Whereas houses of faith had previously worked with communities largely based on their socioeconomic status (presumed to be at particular risk for diabetes), as a result of Napier's research they included new communities identified to be vulnerable to diabetes based on sociocultural factors. The Deputy Assistant Director reports: "David's work has allowed us to expand our capacity to serve those who are often forgotten but are most vulnerable to chronic disease morbidity and mortality" **[B]**.

Rome (pop. 4,300,000, 8.3% with diabetes) joined CCD in 2016. The Head of Health and Welfare Area, Censis Foundation, who led local implementation of study protocol on site, explains that it showed a linear correlation between diabetes prevalence, unemployment rates and use of private transport **[C1]**. Consequently in 2017, the intervention Walking Routes Passport was introduced, in partnership with stakeholders including patient associations and local health authorities, in an effort to connect those who did not traditionally get around the city on foot with one another and to raise awareness of the benefits of walking instead of driving. The passport is a collection of urban routes designed to encourage citizens to take part in free and accessible physical activities. The President of the Health City Institute (HCI), a think tank concerned with health in urban contexts, explains that the CCD research showed this would reduce "physical risk factors" as well as "the level of participation and empathy felt by people living with diabetes" **[C2]**. In Rome the passport comprises "52 walking routes" covering "330 km for *healthy* urban walking [which] made the Italian capital the largest walkable city in Europe" **[C2]**. The passport was extended to Milan in 2019 (34 routes covering 175 km) and the accompanying mobile phone app has been downloaded more than 5,000 times **[C3]**. Five other Italian cities with 7,000,000 inhabitants have now joined CCD resulting in "tangible benefits for quality of public care and

welfare services in the Italian cities” [C1]. For example, Napier helped to create an education and training course to develop the new role of ‘Health City Manager’ [C4]. As the HCI President explains, “The programme is designed to train Health City Managers who can work with local authorities to guide the process of health improvement in urban areas” and the first cohort of 120 administrators, split across Turin, Bologna and Bari, will begin training in 2021. The course “is aimed at generating a higher level of literacy and management competences among decision makers and at innovating public policy through the youngest generations” [C1].

Seoul’s (pop. 9,900,000; 5,000,000 in Korea with diabetes) participation in CCD since 2019 has improved how child and adolescent diabetic patients and their families understand diabetes and has increased support for them. In November 2020, the ‘Jeju-do Diabetes Patient Support Ordinance’ was agreed by the Korean Diabetes Association (KDA) and Korean Hospital. The Chairman of the KDA and Academic Lead for CCD in South Korea explains that this is a “bespoke package for the 323 diabetic patients under 19 on Jeju island to support [their] treatment” which includes “environmental improvement and educational programmes” [D]. On 28 August 2020, the KDA collaborated with the Ministry of Interior and Safety on a YouTube Live event, “to provide an opportunity to explain policies related to diabetes in children and adolescents [...] and to support children and adolescents with diabetes” [D]. The event included a Q&A and the stream has received 1,508 views.

In **Copenhagen** (24,400 inhabitants with diabetes), the CCD programme research resulted in the introduction of specific projects designed to improve the lives of vulnerable citizens. As the former Mayor for Health and Care notes, “We could see the deeper impact on inequality in the prevalence of diabetes, for example the prevalence among citizens not employed. That made it possible for us to target our action” [E]. Consequently, the Center for Diabetes was established in 2016. Three-quarters of people newly diagnosed with diabetes in Copenhagen visit the Center for Diabetes, which offers a health-stimulating environment, daily activities, patient education, physical exercise, and cooking classes. Through a new peer support programme built around the idea of a civic social club, people diagnosed with Type 2 diabetes gather socially to overcome social isolation and share learnings that help them commit to the lifestyle changes necessary to improve their lives with a chronic disease. The former Mayor explains “both the peer supporters and peers [...] have benefitted from the program and experienced positive outcomes”. They note: “Long term, these successes contribute to reducing the problem that Copenhagen is facing with social inequality and type-2 diabetes, therefore reducing overall inequalities in health in the city” and calls CCD “the perfect platform for the City to take action on diabetes and obesity” [E].

The implementation of the CCD programme motivated the development of government policies to address diabetes prevalence in **Mexico**. The Director of the Health and Nutrition Center at the National Institute of Public Health, Mexico, confirms that “Napier developed a vulnerability index that has permitted us to understand health determinants in Mexico that are usually neglected, concerning cultural health determinants that play a pivotal role in diabetes treatment control and adherence” [F]. As the Director explains, “This index has resulted in innovative intervention methods with great potential to improve patients’ ability to control their diabetes to be incorporated into national prevention methods” [F]. As the Head of the Anthropology and Ecology of Disease Emergence Unit at Institut Pasteur describes, “in Mexico City, David worked closely with urban health authorities and other leaders to reduce soft drink consumption three years in a row, implement door-to-door diabetes screening in the poorest neighbourhoods, and set up maternal-child health clinics to prevent obesity and diabetes” [G]. The Director of the Health and Nutrition Center used CCD data to lobby the Mexican government to promote the soda tax (a tax on sugar-sweetened beverages introduced 2014) and warning labels on food packaging to highlight products high in calories, sugar, salt, saturated fats and trans fats (introduced October 2020). They confirm, “The evidence generated by CCD and the vulnerability index have been used to support a comprehensive proposal of strategies for prevention and control of diabetes that the new government has developed in Mexico, and which are currently being considered for implementation” [F].

Shaping policymakers’ understanding of the prevention and treatment of diabetes and of vulnerability to COVID-19: Napier’s research shaped **Western Australian** policy recommendations on the prevention and treatment of diabetes. On 29 January 2019, Napier gave a briefing to the Education and Health Standing Committee of the Parliament of Western Australia.

CCD is widely referred to throughout the resulting report issued by the committee in April 2019, *The Food Fix: The role of diet in type 2 diabetes prevention and management*. The report cites Napier's briefing three times alongside CCD publications (2 publications cited 5 times) and states, "The importance of the approach of Cities Changing Diabetes is critical to addressing effective intervention programmes" [H1]. It found that "Type 2 diabetes prevention is dependent on understanding the social, cultural and environmental factors, particular to a city and its communities, that underlie the development of the disease" [H1, p. 73] and recommends that "The State Government and/or local government authorities use the tools offered by Cities Changing Diabetes to help understand vulnerable populations, or consider joining the programme" (Recommendation 15), and that "the State Government consider funding a Western Australia Local Government to participate in the Cities Changing Diabetes programme" (Recommendation 16) [H1, p. 73]. The Western Australian Government Response to the report (October 2019) stated that recommendations 15 and 16 had been directed to the Department of Local Government, Sport and Cultural Industries [H2, p. 11].

Napier's research has changed understanding of the cultural and social determinants of health and wellbeing at the WHO and other organizations, shaping their policy messages. The Cultural Contexts of Health and Wellbeing (CCH) programme at WHO Europe analyses how cultural factors affect health and wellbeing. An advisor to CCH confirms that Napier's work [R1] "informed the conceptualization and establishment of the WHO Regional Office for Europe's flagship program in the Cultural Contexts of Health and Wellbeing" and notes that "[t]hrough the CCH project, Napier's work has been incorporated into a number of policy briefs [eg. R2] disseminated through the region's 53 national Ministries of Health" [I]. Napier's expertise in vulnerability assessments has informed responses to the COVID-19 pandemic. The Coordinator of SoNAR-Global, a project developing a global social sciences network for the preparedness and response to epidemics and anti-microbial resistance, explains that in December 2020 SoNAR-Global was "negotiating with UNICEF to integrate David Napier's vulnerability assessment into their Minimum Standards for Community Engagement and to start scaling it up in multiple locations around the world. And the WHO has expressed active interest in the development of a training of social scientists to employ this approach" [G], while the European Commission is funding new work by Napier and colleagues in 7 European countries on vulnerability to COVID-19 (ii). The Cultural Contexts of Health and Wellbeing Initiative, funded by the Robert Wood Johnson Foundation in collaboration with the WHO Regional Office for Europe, analyses how cultural factors affect health and wellbeing and "translat[es] global knowledge to the domestic U.S. context" and builds directly on Napier's vulnerability assessment work [I]. Napier's research on vulnerability assessments [R3] was foundational to the Initiative's policy brief, *Improving Pandemic Response: Global Lessons and Cultural Insights from COVID-19*: "Napier has developed a model that sees vulnerabilities as dynamic and the resulted of compounding factors. [...] Building on that, we were able to construct policy guidance for governments to conduct assessments of the factors that produce vulnerabilities before a crisis occurs" [I]. The brief was prepared for "President-elect Biden's COVID task force" [I].

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

- A. Testimonial from Vice President of Global Prevention and Health Promotion, Novo Nordisk
- B. Testimonial from Deputy Assistant Director of Houston Health Department
- C. (1) Evidence Rome: testimonials from Head of Health and Welfare Area, Censis Foundation; (2) President of the Health City Institute; (3) App downloads; (4) article in Acta Biomed
- D. Testimonial from Chairman of Korean Diabetes Association. YouTube: <https://bit.ly/2O4KISD>
- E. Testimonial from former Mayor for Health and Care, Copenhagen
- F. Testimonial from Director of the Health and Nutrition Center, National Institute of Public Health, Mexico
- G. Testimonial Head of the Anthropology and Ecology of Disease Emergence Unit, Institut Pasteur and Coordinator of SoNAR-Global
- H. (1) Freeman, J.M. et al. 2019. *The Food Fix: The role of diet in type 2 diabetes prevention and management*. Parliament of Western Australia. Perth; (2) Western Australia response to report
- I. Testimonial from advisor to CCH programme, WHO Europe, and PI, Cultural Contexts of Health and Wellbeing Initiative