

<b>Institution: University of Lincoln</b>
<b>Unit of Assessment: Allied Health</b>
<b>Title of case study: Improving the primary care management of insomnia</b>
<p><b>1. Summary of the impact</b></p> <p>Research into primary care insomnia by the Community and Health Research Unit (CaHRU) has led to broad improvements in healthcare provision for insomnia, improved patient quality of life, informed national/international policy and practice in insomnia care and impacted directly on health professional practice and insomnia sufferers, initially in Lincolnshire spreading across the UK and internationally from 2008 to 2011. Direct effects on practice include changes in sleep management and reduced hypnotic prescribing through seminars, workshops, conferences and e-learning developed by the team; inclusion in UK policy, practitioner information, training materials and guidance on hypnotics has led to greater professional and public awareness of sleep management internationally.</p>
<p><b>2. Underpinning research</b></p> <p><b>Context</b></p> <p>Insomnia affects 30% of adults every year, 10% having chronic symptoms leading to impaired quality of life, work absence, poor performance and economic consequences. The effects of insomnia are often compounded by adverse effects of hypnotic (sleep inducing) drugs. There is longstanding evidence of inappropriate prescribing of hypnotic drugs in primary care: hypnotics are prescribed to 10% of adults and 25% of those aged over 65 years in the UK. Previous advice fails to highlight to general practitioners (GPs) alternatives to drugs.</p> <p>A central theme of the group's activity is translational research relating to quality improvement in health and social care, using various methods to investigate how to improve care provision through innovation, quality improvement and service redesign and to evaluate the effects of interventions designed to bring about improvement.</p> <p><b>The research programme (2005 - ongoing)</b></p> <p><b>Aims:</b> The research aims to understand and improve primary care management of insomnia and sleep problems.</p> <p><b>Staffing:</b> The research was conducted by members of the Community and Health Research Unit (CaHRU) led by Prof A Niroshan Siriwardena (2005 -) and including postdoctoral staff (Zowie Davy 2009 -; Jo Middlemass 2010 -; Markos Klonizakis 2009-2012), research assistants (Fiona Togher 2009 -; Coral Sirdifield 2008 -; Viet-Hai Phung 2011 -), and visiting staff: Prof Roderick Ørner (Lincoln 2005 -), Dr Jane Dyas (Lincoln 2005 -) and Prof Irving Kirsch (Lincoln/Harvard, US 2010 -). The late Andrew Harrison was the service user representative on the Resources for Effective Sleep Treatment (REST) project.</p> <p><b>Research design &amp; methods:</b></p> <ul style="list-style-type: none"> <li>▪ Systematic reviews,<sup>1</sup> cross-sectional,<sup>2-4</sup> and qualitative studies,<sup>5,6</sup> to identify current practice and problems.</li> <li>▪ Action research (modelling) and controlled clinical studies to inform development of new approaches to primary care management of insomnia.</li> <li>▪ Multiple case studies, non-randomised controlled trial and pilot cluster randomised controlled trial to evaluate the new approach.</li> <li>▪ Ongoing studies include meta-synthesis of qualitative studies of benzodiazepine prescribing and development of a novel platform for computerised Cognitive Behavioural Therapy for insomnia (CCBT-I).<sup>6</sup></li> </ul> <p><b>Key findings to date:</b></p> <ul style="list-style-type: none"> <li>▪ GPs frequently prescribed hypnotic drugs early in treatment, despite potential harms, especially in the elderly. They favoured newer 'Z' drug hypnotics because they mistakenly believe these are safer and more effective. Many patients are advised to continue hypnotic drugs for longer</li> </ul>

## Impact case study (REF3b)

than recommended.<sup>3</sup>

- Patients often delay seeking help, using self-help or complementary treatments. Despite their reluctance to take hypnotics, patients are desperate for help and believe that drugs are the only treatment available.<sup>5</sup>
- Despite practitioners' reluctance to recommend psychological treatments for insomnia, patients are open to these approaches.
- Around 40% of patients suffer side effects to hypnotic drugs; 50% tried to stop taking them, often unsuccessfully and 20% still wanted to stop.
- A novel approach to managing sleep problems in primary care was developed as part of the study. This involved using careful assessment and patient focussed therapy, including cognitive behavioural treatment.<sup>4</sup> Initial studies show that both patients and staff<sup>4</sup> are more satisfied with the new approach and that there are significant reductions in hypnotic prescribing in general practices.
- Although psychological therapy for insomnia is considered to be safer than drugs we have conducted the first study worldwide showing the adverse effects of sleep restriction therapy, a component of cognitive behavioural therapy for insomnia.<sup>2</sup>

### 3. References to the research

All publications below were in peer reviewed international journals (team members highlighted);

1. Huedo-Medina TB, **Kirsch I**, **Middlemass J**, **Klonizakis M**, **Siriwardena AN**. Effectiveness of non-benzodiazepine hypnotics in treatment of adult insomnia: meta-analysis of data submitted to the Food and Drug Administration. *British Medical Journal* 2012;345: e8343. (9 citations in Google Scholar)
2. Kyle S, Miller CB, Rogers Z, MacMahon KM, **Siriwardena AN**, Espie CA. Sleep Restriction Therapy for insomnia is associated with objectively-impaired vigilance: Implications for the clinical management of insomnia disorder. *Sleep* 2013 (accepted paper online)
3. **Siriwardena AN**, Qureshi Z, Gibson S, Collier S, Latham M. GPs' attitudes to benzodiazepine and 'Z-drug' prescribing: a barrier to implementation of evidence and guidance on hypnotics. *Br Gen Pract* 2006;56: 964-967. (52 citations in Google Scholar)
4. **Siriwardena AN**, Qureshi MZ, **Dyas JV**, Middleton H, **Orner R**. Magic bullets for insomnia? Patients' use and experiences of newer (Z drugs) versus older (benzodiazepine) hypnotics for sleep problems in primary care. *Br J Gen Pract* 2008;58: 417-422. (36 citations in Google Scholar)
5. **Dyas JV**, Apekey TA, Tilling M, **Orner R**, Middleton H, **Siriwardena AN**. Patients' and clinicians' experiences of consultations in primary care for sleep problems and insomnia: a focus group study. *Br J Gen Pract* 2010;60: 180-200. (21 citations in Google Scholar)
6. **Middlemass J**, **Davy Z**, Cavanagh K, Linehan C, Morgan K, Lawson S, **Siriwardena AN**. Integrating online communities and social networks with computerised treatment for insomnia: a qualitative study. *Br J Gen Pract* 2012;62: 840-850. . (1 citation in Google Scholar)

### Funding sources

The funding sources for this research programme are all high quality, peer reviewed competitive awards from National Institute for Health Research (NIHR) or partner organisations (e.g. The Health Foundation):

- **Siriwardena AN**, McSorley G, **Orner R**, Middleton H, **Dyas J**, Sach T, Sithole J, Gibson S. Resources for Effective Sleep Treatment (REST) – A Lincolnshire Innovation and Change Collaborative Quality Improvement Study. The Health Foundation Engaging with Quality in Primary Care Award Scheme. April 2007 to March 2010, £396,650.
- Espie C, Kyle S, Salveta C, **Siriwardena AN**. Objective impact on sleep and daytime functioning of sleep restriction therapy: a brief behavioural intervention for persistent insomnia. CSO Scotland, December 2010 – November 2011, £49,505.

## Impact case study (REF3b)

- Lawson, S, **Siriwardena AN**, Morgan K, Cavanagh K, and Linehan C. ENACT: Exploring social Networks to Augment Cognitive behavioural Therapy. EPSRC, Healthcare Partnerships EP/I000615/1, October 2010 – March 2013, £463,840.
- **Siriwardena AN**, Davy Z, Kane R, **Middlemass J**, Johnson C, Fyall A, Harrison A. Improving Primary Care Resources for Effective Sleep Treatment (IPCREST). East Midlands Health Innovation and Education Cluster (EM HIEC), April 2011 – March 2012, £39,833.

### 4. Details of the impact

The research has changed public and professional awareness as well as professional policy and practice, by contributing to a better understanding of deficiencies in care and by developing and testing methods which have improved delivery of care for sleep problems and insomnia, which have improved quality of life for patients. It has had a direct benefit on primary care (general practitioners, practice nurses and primary healthcare team) and provision for patients with insomnia and sleep problems. Service users, the public and health practitioners have been involved in the conception, design and dissemination of the work.<sup>7</sup>

- Initially the work had local impact in Lincolnshire in 2009, where in a non-randomised control group study we compared development of a new model of care for insomnia through a Quality Improvement Collaborative with 16 GP practices, which led to improvements in frontline primary care practice resulting in greater satisfaction for patients and staff<sup>5</sup> and significant reductions in inappropriate prescribing and costs of hypnotic drugs.<sup>7</sup> These changes in practice are reflected in case studies published by the National Prescribing Centre to provide information to GPs.<sup>10</sup> The model was used in an educational programme delivered by the team and involving a further 20 general practices which led to improvements in care. The team have led events for local patient groups (in 2011), for example the Sleep Interest Group Network in Lincoln, led by a service user representative for the Resources for Effective Sleep Treatment (REST) study.
- From 2011, the research began to have a wider regional impact on the NHS through well-attended seminars for GPs on management of insomnia conducted by the team in Lincolnshire (attended by 100 GPs), Chesterfield (20 GPs), Leicester, (40 GPs) Nottingham (26 GPs) and Derby (30 GPs and specialists).
- There was also UK-wide impact in 2011, when a national event for doctors, '*Sleep and mental health*' was run by the Royal Society of Medicine, together with the Mental Health Foundation, as part of their Mental Health Awareness week 2011 campaign on sleep, where we presented our findings to around 100 delegates.
- The research team also raised public awareness of insomnia and better care for insomnia through a national UK television documentary, in which we were featured and which covered the findings of our research (ITN 'Tonight' screened 17 November 2011 on ITV1).<sup>8</sup> This led to a significant increase in use of the REST website with over 1,000 hits in the month following the documentary.
- The findings have led to national changes in health service policy and practice, having been incorporated in policy information, educational resources and guidance to clinicians on hypnotic prescribing developed by the National Prescribing Centre<sup>9-11</sup> and in reviews conducted by others of the impact of national (National Institute for Health and Clinical Excellence: NICE) guidance from 2008-10.<sup>12</sup>
- The research has had an international impact through a process of dissemination and knowledge translation efforts conducted by our team via workshops, seminars and e-learning (2009 – 2011). These have changed clinical behaviour among GPs, practice nurses and practice teams and changed relationship with patients. The workshops and seminars last from one to three hours and include background information, practical training on assessing sleep problems and providing CBT-I and videos showing how this can be done in practice. We have conducted an evaluation of participants, which has indicated changes in both awareness and behaviour of clinicians in relation to their management of patients with insomnia with greater use of psychosocial methods and reduced use of hypnotic drugs. Clinicians have moved away from prescribing drugs to using psychological therapies for insomnia, which is a cultural shift in clinical behaviour towards shared care and greater involvement of patients. The research has

been cited by North American Space Agency (NASA).<sup>13</sup>

- Our team have developed an online e-learning resource to provide information and education to practitioners. In the first two years of operation there were over 4,000 visits from more than 3,000 unique visitors, who spent on average 4.5 minutes on the site from 90 countries across all five continents (data from Google analytics). We have had very positive feedback from GPs in the UK and internationally including direct feedback on how they will use the learning in day-to-day practice.<sup>14</sup> This includes the citation and recommendation to use the e-learning tool by GPs in New Zealand through prescribing guidance.<sup>15</sup>
- There is also greater public awareness of the work through information available to the general public through the press and online media including Wikipedia.<sup>16</sup> The paper by (Huedo-Medina et al BMJ 2012;345: e8343) received press and radio coverage in local (BBC Radio Lincolnshire), national (Times, Telegraph, Daily Mail, Radio5live) and international (US, Australasia, Asia) media.

## 5. Sources to corroborate the impact

7. Health Foundation. Resources for Effective Sleep Treatment (REST). Health Foundation. 2011. <http://www.health.org.uk/areas-of-work/programmes/engaging-with-quality-in-primary-care/related-projects/resources-for-effective-sleep-treatment-rest/> [accessed 25-11-2013].
8. ITN Tonight. Waking up to insomnia. (Broadcast ITV1 17 October 2011) <http://communityandhealth.blogs.lincoln.ac.uk/2011/11/18/rest-project-featured-on-itn-tonight-documentary-on-insomnia/> [accessed 25-11-2013].
9. Maskrey, E. Patients' experience and perception of using hypnotics. NPCi July Drug Safety Update from MHRA/CHM. 2008. National Prescribing Centre <http://www.npci.org.uk/blog/?p=164> [accessed 25-11-2013].
10. National Prescribing Centre. Patients' experience and perception of using hypnotics. *MeReC Monthly* 2008: Number 6:1-2. <http://www.npc.nhs.uk/rapidreview/?p=164> [accessed 25-11-2013].
11. National Prescribing Centre. Insomnia - Less than 60 minute e-learning events. NPCi. 2010. [http://www.npci.org.uk/qipp/qipp\\_elearning/hypnotics\\_elearning.php](http://www.npci.org.uk/qipp/qipp_elearning/hypnotics_elearning.php) [accessed 25-11-2013].
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13. Wotring V. Risk of therapeutic failure due to ineffectiveness of medication. North American Space Agency, Houston Texas, 2011. <http://humanresearchroadmap.nasa.gov/evidence/reports/Pharm.pdf> [accessed 25-11-2013].
14. Siriwardena AN, Phung V-H, Davy Z. Improving primary care resources for Effective Sleep Treatment (IPCREST) Final report to EMHIEC. University of Lincoln 2012 <http://emhiec.co.uk/projects/em5-improving-primary-care-resources-for-effective-sleep-treatment-ipcrest/> [accessed 25-11-2013].
15. Hypnotics – safe prescribing – dying for a good sleep? SaferRx, Waitemata District Health Board 2012. <http://www.saferx.co.nz/full/Hypnotics.pdf> [accessed 25-11-2013].
16. 16. Wikipedia contributors. Nonbenzodiazepine. Wikipedia , Page Version ID 343947511. 2010. Wikipedia, The Free Encyclopaedia <http://en.wikipedia.org/wiki/Nonbenzodiazepine> [accessed 25-11-2013].