Medication Monitoring for People with Dementia in Care Homes: Clinical Impact of Nurse-led monitoring

## Supporting information:

### Authors:

Sue Jordan1, Marie Gabe1, Louise Newson1, Sherrill Snelgrove1, Gerwyn Panes1, Aldo Picek3, Ian T. Russell2, Michael Dennis2

1. Department of Nursing, The College of Human and Health Sciences, Swansea University, Singleton Park, Swansea, Wales, UK
2. The College of Medicine, Swansea University, Singleton Park, Swansea, Wales, UK Wales, UK
3. Fieldbay Ltd, Chestnut House, Tawe Business Village, Swansea Enterprise Pk., Swansea, SA7 9LA

### Collaborators:

Dr. Robert Colgate, Consultant Psychiatrist, Princess of Wales Hospital, Coity Road, Bridgend CF31 1RQ

Dr P M Rangappagowda, Mental health services for older people, Llandough hospital, Penarth, CF64 2XX.

Thabang Wilson Ncheke, Home Manager, Glangarnant Care Home, Neuadd Road, Tairgwaith, Sa18 1Uf

Sue Levey/Jennifer Aplin, Danygraig House, Bridgend Road, Newton, Porthcawl, CF36 5SR.

Hayley Marks, Diane Hateley, Neuadd Drymmau Care Home, Drymmau Rd., Skewen, Neath. SA10 6NR

Paula Aplin, Karen Davies, Shaunna Rosenberg, Monkstone House, 1 Locks Common Road, Porthcawl, CF36 3HU

## Bibliography

Alldred DP, Raynor DK, Hughes C, et al. Interventions to optimise prescribing for older people in care homes. Cochrane Database of Systematic Reviews 2013;Issue 2. Art. No.: CD009095. DOI: 10.1002/14651858.CD009095.pub2.

Andrews J, Butler M. 2014 Trusted to Care An independent Review of the Princess of Wales Hospital and Neath Port Talbot Hospital at Abertawe Bro Morgannwg University Health Board People, Dementia Services Development Centre, the People Organisation. Available: http://wales.gov.uk/docs/dhss/publications/140512trustedtocareen.pdf accessed 19.5.14

Arditi C, Rège-Walther M, Wyatt JC, et al. Computer-generated reminders delivered on paper to healthcare professionals; effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2012;Issue 12.Art. No.: CD001175.DOI:10.1002/14651858.CD001175.pub3.

Aylward M, Phillips C, Howson H. (2013) Simply Prudent Healthcare – achieving better care and value for money in Wales – discussion paper. The Bevan commission, Cardiff. <http://www.bevancommission.org/sitesplus/documents/1101/Bevan%20Commission%20Simply%20Prudent%20Healthcare%20v1%2004122013.pdf>

Ballard C, Hanney ML, Theodoulou M, et al. The dementia antipsychotic withdrawal trial (DART-AD): long-term follow-up of a randomised placebo-controlled trial. Lancet Neurol. 2009;**8**(2):151-7.

Banerjee, S. (2009) The use of antipsychotic medication for people with dementia: time for action. A report for the Minister of State for Care Services. An Independent |Report commissioned for the Department of Health, London. Available at: <http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_108302.pdf>

Bradley P., Willson A. 2014 Achieving prudent healthcare in NHS Wales (revised). Cardiff, Public Health Wales.

Brenner S, Detz A, López A, et al. Signal and noise: applying a laboratory trigger tool to identify adverse drug events among primary care patients. BMJ Qual Saf. 2012;21(8):670-5.doi:10.1136/bmjqs-2011-000643.

Coupland C.A., Dhiman P., Barton G., Morriss R., Arthur A., Sach T., Hippisley-Cox J. (2011) A study of the safety and harms of antidepressant drugs for older people: a cohort study using a large primary care database. Health Technol Assess. 2011; 15(28):1-202, iii-iv. doi: 10.3310/hta15280.

Ekman, E., Petersson, G., Tågerud, S., & Bäckström, M. (2012). Awareness among nurses about reporting of adverse drug reactions in Sweden. Drug, Healthcare and Patient Safety, 4, 61–66. doi:10.2147/DHPS.S31103

Forster AJ, Murff HJ, Peterson JF, et al. Adverse drug events occurring following hospital discharge. Journal of General Internal Medicine 2005;Vol.20(4 pp.317-323.

Francis R. Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry: Executive Summary. (Online). Available at: http://www.midstaffspublicinquiry.com/report. (Accessed 6 September 2013).

French DD, Campbell R, Spehar A, et al. Outpatient medications and hip fractures in the US: A national veterans study. Drugs and Ageing 2005;**Vol. 22(10)** pp.877-885.

Frontier Economic 2014 Exploring the costs of unsafe care in the NHS: a report prepared for the department of health, Frontier Economics, London. <http://www.frontier-economics.com/documents/2014/10/exploring-the-costs-of-unsafe-care-in-the-nhs-frontier-report-2-2-2-2.pdf>

Gabe, M.E., Murphy, F., Davies, G.A., Russell, I.T., and Jordan, S. (2014) Medication Monitoring in a Nurse-Led Respiratory Outpatient Clinic: Pragmatic Randomised Trial of the West Wales Adverse Drug Reaction Profile. PLOS ONE. Published: May 05, 2014 DOI: 10.1371/journal.pone.0096682

Gurwitz J, Field T, Judge J. et al. The incidence of adverse drug events in two large academic long-term care facilities. The American Journal of Medicine 2005;118, 251-8

Hakkarainen K.M., Andersson Sundell K., Petzold M. & Hägg S. (2013). Prevalence and perceived preventability of self-reported adverse drug events-a population-based survey of 7099 adults. PLoS ONE. 8 (9), e73166. DOI:10.1371/journal.pone.0073166.

Hanafi, S., Torkamandi, H., Hayatshahi, A., Gholami, K., & Javadi, M. (2012). Knowledge, attitudes and practice of nurse regarding adverse drug reaction reporting. Iranian Journal of Nursing and Midwifery Research, 17(1), 21–25.

Healy D, Herxheimer A, Menkes D. Antidepressants and violence: problems at the interface of medicine and law. PLoS Medicine 2006;**3**(9):e372.

Howard R., Avery A., Slavenburg S., Royal S., Pipe G., Lucassen P. & Pirmohamed M. (2007). Which drugs cause preventable admissions to hospital? A systematic review. Bristish Journal of Clinical Pharmacology. 63 (2), 136-47.

Jalbert JJ, Daiello LA, Eaton CB, et al. Antipsychotic use and the risk of diabetes in nursing home residents with dementia. Am J Geriatr Pharmacother. 2011; **9**(3):153-63.Epub2011May19.PubMed PMID:21596626.foundfeb2012.

Johns, L. J., Arifulla, M., Cheriathu, J. J., & Sreedharan, J. (2012). Reporting of adverse drug reactions: an exploratory study among nurses in a teaching hospital, Ajman, United Arab Emirates. DARU Journal of Pharmaceutical Sciences, 20(1), 44. doi:10.1186/2008-2231-20-44

Jordan S, Tunnicliffe C, Sykes A. Minimising Side Effects: The clinical impact of nurse-administered ‘side effects’ checklists. Journal of Advanced Nursing 2002;37;2:155-65.

Jordan S. Managing Adverse Drug Reactions: An Orphan Task. Developing nurse-administered evaluation checklists. Journal of Advanced Nursing 2002;38:5: 437-448.

Jordan S., Knight J., Pointon D. (2004) Monitoring Adverse Drug Reactions: Scales, profiles and checklists. International Nursing Review. 51, 208-221.

Jordan,S., Gabe, M., Newson, L., Snelgrove, S., Panes, G., Picek, A., Russell, I.T., Dennis, M. (2014) Medication Monitoring for People with Dementia in Care Homes: The Feasibility and Clinical Impact of Nurse-Led Monitoring. The Scientific World Journal, vol. 2014, Article ID 843621, 11 pages, 2014. doi:10.1155/2014/843621.

Kiguba R., Karamagi C., Waako P., Ndagije H.B., Bird S.M. (2014) Recognition and reporting of suspected adverse drug reactions by surveyed healthcare professionals in Uganad: key determinants. BMJ Open. 4(11) e005869 doi:10.1136/bmjopen-2014-005869

Lewis JD, Strom BL, Localio AR, et al. [Moderate and high affinity serotonin reuptake inhibitors increase the risk of upper gastrointestinal toxicity.](http://www.ncbi.nlm.nih.gov/pubmed/18188866?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=1) Pharmacoepidemiol Drug Saf. 2008;**17**(4):328-35.

Marcum Z.A., Amuan M.E., Hanlon J.T., Aspinall S.L., Handler S.M., Ruby C.M. & Pugh M.J. (2012). Prevalence of unplanned hospitalizations caused by adverse drug reactions in older veterans. Journal of the American Geriatric Society.60 (1), 34-41. DOI:10.1111/j.1532-5415.2011.03772.x.

Masud T, Frost M, Ryg J, et al. Central nervous system medications and falls risk in men aged 60-75 years: the Study on Male Osteoporosis and Aging (SOMA). Age Ageing. 2012;**29**.[Epub ahead of print]PubMedPMID:22931902.

NICE Medicines & Prescribing Centre 2015 Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes. NICE guideline 5. NICE, London. Accessed 2.4.15 <http://www.nice.org.uk/guidance/ng5/evidence/full-guideline-6775454>

Onder G, van der Cammen TJ, Petrovic M, Somers A, Rajkumar C (2013) Strategies to reduce the risk of iatrogenic illness in complex older adults. Age Ageing 42:284-91. doi: 10.1093/ageing/aft038.

Pirmohamed, M., James, S., Meakin, S., Green, C., Scott, A. K., Walley, T. J., ... & Breckenridge, A. M. (2004). Adverse drug reactions as cause of admission to hospital: prospective analysis of 18 820 patients. Bmj, 329(7456), 15-19.

Pratt N, Roughead EE, Ramsay E, et al. Risk of hospitalization for hip fracture and pneumonia associated with antipsychotic prescribing in the elderly: a self-controlled case-series analysis in an Australian health care claims database. Drug Saf. 2011;**34**(7):567-75.doi:10.2165/11588470-000000000-00000.PubMed PMID: 21663332.

Rabenda V, Bruyère O, Reginster JY. Risk of nonvertebral fractures among elderly postmenopausal women using antidepressants. Bone. 2012; **51**(4):674-9.

Roberts A, Charlesworth A. (2014) [A decade of austerity in Wales - The Nuffield Trust](http://www.nuffieldtrust.org.uk/sites/files/nuffield/publication/140617_decade_of_austerity_wales.pdf) Commissioned by Welsh Government. <http://www.nuffieldtrust.org.uk/sites/files/nuffield/publication/140617_decade_of_austerity_wales.pdf>

Sari, A.B.A., Cracknell, A., and Sheldon, T.A. (2008) Incidence, preventability and consequences of adverse events in older people: results of a retrospective case-note review. Age and Ageing. Vol. 37 pp. 265-269

Schneider LS, Dagerman KS, Insel P. Risk of death with atypical antipsychotic drug treatment for dementia: meta-analysis of randomized placebo-controlled trials. JAMA. 2005;**294**(15):1934-43.

Smith TG. Antipsychotics in dementia--mortality risks and strategies to reduce prescribing. Evid Based Ment Health. 2011;**14**(2):35-6.

Steinman MA, Handler SM, Schiff GD, et al. Beyond the prescription: medication monitoring and adverse drug events in older adults. 2011;59(8) pp. 1513-20.

Sultana J., Cutroneo P. & Trifirò G. (2013). Clinical and economic burden of adverse drug reactions. Journal of Pharmacology and Pharmacotherapeutics. 4 (Suppl1), S73-S77.

Vigen CLP, Mack WJ, Keefe RSE, et al. Cognitive effects of atypical antipsychotic medications in patients with Alzheimer's Disease: Outcomes From CATIE-AD. The American Journal of Psychiatry 2011;**168(**8)pp.831-839.

Welsh Government 2014 Learning from Trusted to Care Ministerial Unannounced Spot Check Visits All Wales Report. Dept of Health and Social Services, Welsh Government, Crown copyright. available, accessed 15.1.15: <http://wales.gov.uk/docs/dhss/publications/141016allwalesen.pdf>

Wu T.Y., Jen M.H., Bottle A., Molokhia M., Aylin P., Bell D. & Majeed A. (2010). Ten-year trends in hospital admissions for adverse drug reactions in England 1999-2009. Journal of the Royal Society of Medicine.103 (6), 239-50. DOI: 10.1258/jrsm.2010.100113.