# **Falls and Fragility Fracture Audit Programme references library**

## Publications based on National Hip Fracture Database (NHFD) work

Bhimjiyani, A., Neuburger, J., Jones, T., Ben-Shlomo, Y. and Gregson, C.L., 2018. The effect of social deprivation on hip fracture incidence in England has not changed over 14 years: an analysis of the English Hospital Episodes Statistics (2001–2015). *Osteoporosis international*, 29(1), pp.115-124. https://link.springer.com/article/10.1007/s00198-017-4238-2 [Accessed August 2019]

Boulton C, Wakeman R. Lessons from the National Hip Fracture Database. *Orthopaedics and Trauma* 2016;4,30(2):123–7 <a href="https://linkinghub.elsevier.com/retrieve/pii/S1877132716300306">https://linkinghub.elsevier.com/retrieve/pii/S1877132716300306</a> [Accessed August 2019]

Boulton C, Burgon V, Johansen A, Martin S F, Rai R, Stanley R, Wakeman R. Delivering "Best Practice" for patients with hip fracture – Does orthogeriatrician engagement with national clinical audit data improve performance? *Age and Ageing* 2017;46,Issue suppl\_1, 1,i32–i34, <a href="https://academic.oup.com/ageing/article/46/suppl\_1/i32/3828959">https://academic.oup.com/ageing/article/46/suppl\_1/i32/3828959</a> [Accessed August 2019]

Griffiths R, White SM, Moppett IK *et al.* Safety guideline: reducing the risk from cementedhemiarthroplasty for hip fracture 2015. Association of Anaesthetists of Great Britain and Ireland British Orthopaedic Association British Geriatrics Society. *Anaesthesia* 2015;70:623–6. <a href="http://doi.org/10.1111/anae.13036">http://doi.org/10.1111/anae.13036</a> [Accessed August 2019]

Griffin XL, Parsons N, Achten J, Fernandez M, Costa ML. Recovery of health-related quality of life in a United Kingdom hip fracture population. The Warwick Hip Trauma Evaluation – a prospective cohort study. *The Bone & Joint Journal* 2015;97-B:372–82. <a href="http://doi.org/10.1302/0301-620X.97B3.35738">http://doi.org/10.1302/0301-620X.97B3.35738</a> [Accessed August 2019]

Johansen A, Boulton C, Neuburger J. Diurnal and seasonal patterns in presentations with hip fracture-data from the national hip fracture database. *Age and Ageing* 2016;45(6):883–6 https://www.ncbi.nlm.nih.gov/pubmed/27496916 [Accessed August 2019]

Johansen A, Boulton C. Hip fracture presentations are less frequent at weekends. *Injury: International Journal of the Care of the Injured* 2017; 48(12):2885–6. <a href="https://www.injuryjournal.com/article/S0020-1383(17)30702-7/fulltext">https://www.injuryjournal.com/article/S0020-1383(17)30702-7/fulltext</a> [Accessed August 2019]

Johansen A, Tsang C, Boulton C, Wakeman R, Moppett I. Understanding mortality rates after hip fracture repair using ASA physical status in the National Hip Fracture Database. *Anaesthesia* 2017. <a href="http://onlinelibrary.wiley.com/wol1/doi/10.1111/anae.13908/full">http://onlinelibrary.wiley.com/wol1/doi/10.1111/anae.13908/full</a> [Accessed August 2019]

Johansen A, Boulton C, Burgon V, Rai S, Ten Hove R, Wakeman R. Using the National Hip Fracture Database (NHFD) to define the impact of physiotherapist assessment on early mobilisation after hip fracture. *Physiotherapy Journal* 2017;103(1),e85 <a href="https://www.physiotherapyjournal.com/article/S0031-9406(17)30170-0/abstract">https://www.physiotherapyjournal.com/article/S0031-9406(17)30170-0/abstract</a> [Accessed August 2019]

Johansen A, Boulton C, Hertz K, Ellis M, Burgon V, Rai S, Wakeman R. The National Hip Fracture © Royal College of Physicians, 2018

Database (NHFD) – Using a national clinical audit to raise standards of nursing care. *The International Journal of Orthopaedic and Trauma Nursing* 2017;26:3–6 <a href="http://www.orthopaedictraumanursing.com/article/S1878-1241(17)30002-3/fulltext">http://www.orthopaedictraumanursing.com/article/S1878-1241(17)30002-3/fulltext</a> [Accessed August 2019]

Johansen A, Boulton C, Burgon V, Rai S, Wakeman R. Avoiding delay in surgery for hip fracture: Using the national hip fracture database (NHFD) to monitor and improve compliance with the national guidelines. *Age and Ageing* 2017;46,Issue suppl\_1, 1,i32–i34 <a href="https://academic.oup.com/ageing/article-abstract/46/suppl\_1/i32/3828960?redirectedFrom=fulltext">https://academic.oup.com/ageing/article-abstract/46/suppl\_1/i32/3828960?redirectedFrom=fulltext</a> [Accessed August 2019]

Johansen A, Boulton C, Burgon V, Rai S, Wakeman R. Cognitive impairment - Profiling its implications for patients with hip fracture. *Age and Ageing* 2017;46,suppl\_2, 1:ii1–ii6 <a href="https://academic.oup.com/ageing/article/46/suppl\_2/ii1/3950210">https://academic.oup.com/ageing/article/46/suppl\_2/ii1/3950210</a> [Accessed August 2019]

McGovern, P.D., Albrecht, M., G. Belani, K., Nachtsheim, C., Partington, P.F., Carluke, I. and Reed, M.R., 2011. Forced-air warming and ultra-clean ventilation do not mix: an investigation of theatre ventilation, patient warming and joint replacement infection in orthopaedics. *The Journal of bone and joint surgery*. British volume, 93(11), pp.1537-1544. https://www.ncbi.nlm.nih.gov/pubmed/22058308 [Accessed August 2019]

McKee M, Bray B, Buckingham R, Boulton C. The weekend effect: now you see it, now you don't (letter). *BMJ (Clinical Research Ed.)* 2016;353:i2750 <a href="https://www.bmj.com/content/353/bmj.i2750.long">https://www.bmj.com/content/353/bmj.i2750.long</a> [Accessed August 2019]

Neuburger J, Currie C, Wakeman R *et al*. The impact of a national clinician-led audit initiative on care and mortality after hip fracture in England: an external evaluation using time trends in non audit data. *Med Care* 2015; 53:686–91. <a href="https://www.ncbi.nlm.nih.gov/pubmed/26172938">www.ncbi.nlm.nih.gov/pubmed/26172938</a> [Accessed August 2019]

Neuburger J, Currie C, Wakeman R, *et al.* Increased orthogeriatrician involvement in hip fracture care and its impact on mortality in England. *Age and Ageing* 2017;46(2):187–192. https://doi.org/10.1093/ageing/afw201 [Accessed August 2019]

Neuburger J, Currie C, Wakeman R, et al. Safe working in a 7-day service. Experience of hip fracture care as documented by the UK National Hip Fracture Database. Age and Ageing 2018 Sep 1;47(5):741–5. <a href="https://doi.org/10.1093/ageing/afy074">https://doi.org/10.1093/ageing/afy074</a> [Accessed August 2019]

Perry DC, Metcalfe D, Griffin XL, Costa ML. Inequalities in use of total hip arthroplasty for hip fracture: population based study. *BMJ* 2016; 353:i2021. <a href="http://dx.doi.org/10.1136/bmj.i2021">http://dx.doi.org/10.1136/bmj.i2021</a> [Accessed August 2019]

Sayers A, Whitehouse MR, Berstock JR *et al.* The association between the day of the week of milestones in the care pathway of patients with hip fracture and 30-day mortality: findings from a prospective national registry – The National Hip Fracture Database of England and Wales. *BMC Medicine* 2017;15:62. <a href="http://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-017-0825-5">http://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-017-0825-5</a> [Accessed August 2019]

Sims, A.L., Parsons, N., Achten, J., Griffin, X.L., Costa, M.L., Reed, M.R. and CORNET Trainee Collaborative, 2018. A randomized controlled trial comparing the Thompson hemiarthroplasty with

the Exeter polished tapered stem and Unitrax modular head in the treatment of displaced intracapsular fractures of the hip: the WHiTE 3: HEMI Trial. *Bone Joint Journal*, 100(3), pp.352-360. <a href="https://www.ncbi.nlm.nih.gov/pubmed/29589786">https://www.ncbi.nlm.nih.gov/pubmed/29589786</a> [Accessed August 2019]

Stewart K, Bray B, Buckingham R, Boulton C. The weekend effect: now you see it, now you don't. Variations in care quality occur across the whole week, not just at weekends. *British Medical Journal* 2016;7;353 <a href="https://www.bmj.com/content/353/bmj.i3151.long">https://www.bmj.com/content/353/bmj.i3151.long</a> [Accessed August 2019]

Taranu, R., Redclift, C., Williams, P., Diament, M., Tate, A., Maddox, J., Wilson, F. and Eardley, W., 2018. Use of anticoagulants remains a significant threat to timely hip fracture surgery. *Geriatric orthopaedic surgery & rehabilitation*, 9, p.2151459318764150. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5871052/ [Accessed August 2019]

Thorne, K., Johansen, A., Akbari, A., Williams, J.G. and Roberts, S.E., 2016. The impact of social deprivation on mortality following hip fracture in England and Wales: a record linkage study. *Osteoporosis International*, 27(9), pp.2727-2737. <a href="https://link.springer.com/article/10.1007/s00198-016-3608-5">https://link.springer.com/article/10.1007/s00198-016-3608-5</a> [Accessed August 2019]

Tsang C, Boulton C, Burgon V, Johansen A, Wakeman R, Cromwell D. Predicting 30-day mortality after hip fracture surgery evaluation of the National Hip Fracture Database case-mix adjustment model. *The British Editorial Society of Bone & Joint Surgery* 2017;6:550–6. <a href="https://online.boneandjoint.org.uk/doi/full/10.1302/2046-3758.69.BJR-2017-0020.R1">https://online.boneandjoint.org.uk/doi/full/10.1302/2046-3758.69.BJR-2017-0020.R1</a> [Accessed August 2019]

Whitehouse, M.R., Berstock, J.R., Kelly, M.B., Gregson, C.L., Judge, A., Sayers, A. and Chesser, T.J., 2019. Higher 30-day mortality associated with the use of intramedullary nails compared with sliding hip screws for the treatment of trochanteric hip fractures: a prospective national registry study. *Bone Joint Journal*, 101(1), pp.83-91. <a href="https://www.ncbi.nlm.nih.gov/pubmed/30601043">https://www.ncbi.nlm.nih.gov/pubmed/30601043</a> [Accessed August 2019]

Wilson H, Boulton C, Burgon V, Johansen A, Neuburger J, Rai S, Wakeman R. Using the national hip fracture database to develop a classification of models of orthogeriatric care. *Age and Ageing* 2017;46,Issue suppl\_1, 1,i1–i22 <a href="https://academic.oup.com/ageing/article/46/suppl\_1/i1/3828842">https://academic.oup.com/ageing/article/46/suppl\_1/i1/3828842</a> [Accessed August 2019]

## Publications based on Fracture Liaison Service Database (FLS-DB) work

Hawley S, Javaid M K, Prieto-Alhambra D, Lippett J, Sheard S, Arden N K, Cooper C, Judge A, The REFReSH study group. Clinical effectiveness of orthogeriatric and fracture liaison service models of care for hip fracture patients: population-based longitudinal study. *Age and Ageing* 2016 March;45(2):236–42. <a href="https://academic.oup.com/ageing/article/45/2/236/2195354?searchresult=1">https://academic.oup.com/ageing/article/45/2/236/2195354?searchresult=1</a> [Accessed August 2019]

Judge A, Javaid M K, Leal J, Hawley S, Drew S, Sheard S, Prieto- Alhambra D, Gooberman-Hill R, Lippett J, Farmer A, Arden N, Gray A, Goldacre M, Delmestri A, Cooper C. Models of care for the delivery of secondary fracture prevention after hip fracture: a health service cost, clinical outcomes and cost- effectiveness study within a region of England. *Health Services and Delivery Research.* 2016 Sep; 4:28. <a href="https://www.ncbi.nlm.nih.gov/books/NBK385615/">https://www.ncbi.nlm.nih.gov/books/NBK385615/</a> [Accessed August 2019]

Leal J, Gray AM, Hawley S, Prieto-Alhambra D, Delmestri A, Arden NK, Cooper C, Javaid MK, Judge A; and the REFReSH Study Group. Cost-Effectiveness of Orthogeriatric and Fracture Liaison Service Models of Care for Hip Fracture Patients: A Population-Based Study. *Journal of Bone and Mineral Research*. 2017 Feb; 32(2):203–11. <a href="https://www.ncbi.nlm.nih.gov/pubmed/27632945">https://www.ncbi.nlm.nih.gov/pubmed/27632945</a> [Accessed August 2019]

#### Publications based on National Audit of Inpatient Falls (NAIF) work

Buttery AK, Husk J, Lowe D, Treml J, Vasilakis N, Riglin J. Older people's experiences of therapeutic exercise as part of a falls prevention service: survey findings from England, Wales and Northern Ireland. *Age and Ageing* 2014 May; 43(3):369–74.

https://www.ncbi.nlm.nih.gov/pubmed/24292239 [Accessed August 2019]

Morris R, O'Riordan S. Prevention of falls in hospital. *Clin Med* 2017 Jul;17(4):360–62. <a href="https://www.ncbi.nlm.nih.gov/pubmed/28765417">https://www.ncbi.nlm.nih.gov/pubmed/28765417</a> [Accessed August 2019]

O'Riordan S, Vasilakis N, Hussain L, Schoo R1, Whitney J, Windsor J, Horton K, Martin F. Measurement of lying and standing blood pressure in hospital. *Nursing Older People* 2017 Sep; 29;29(8):20–6. <a href="https://www.ncbi.nlm.nih.gov/pubmed/29124913">https://www.ncbi.nlm.nih.gov/pubmed/29124913</a> [Accessed August 2019]

## **External papers referenced in FFFAP publications**

Abbey J, Piller N, Bellis AD *et al*. The Abbey pain scale: a 1-minute numerical indicator for people with end-stage dementia. *Int J Palliat Nurs* 2004;10(1):6–13. https://www.ncbi.nlm.nih.gov/pubmed/14966439 [Accessed August 2019]

Barodawala S, Kesavan S, Young J. A survey of physiotherapy and occupational therapy provision in UK nursing homes. *Clin Rehabil* 2001;15(6):607–10. <a href="https://doi.org/10.1191/0269215501cr4540a">https://doi.org/10.1191/0269215501cr4540a</a> [Accessed August 2019]

Bellelli G, Morandi A, Davis DH *et al.* Validation of the 4AT, a new instrument for rapid delirium screening: a study in 234 hospitalised older people. *Age and Ageing* 2014;43(4):496–502. <a href="https://www.ncbi.nlm.nih.gov/pubmed/24590568">www.ncbi.nlm.nih.gov/pubmed/24590568</a> [Accessed August 2019]

Getting It Right First Time: Orthopaedic hemiarthroplasty products and Primary Femoral component dataset

Supplied exclusively to the National Hip Fracture Database - HQIP/RCP Falls & Fragility Fracture Audit Programme (FFFAP).

Leal J, Gray AM, Javaid MK *et al.* Impact of hip fracture on hospital care costs: a population-based study. *Osteoporos Int* 2016;27:549–58. <a href="https://link.springer.com/article/10.1007/s00198-015-3277-9">https://link.springer.com/article/10.1007/s00198-015-3277-9</a> [Accessed August 2019

Marcantonio ER, Flacker JM, Wright RJ *et al.* Reducing Delirium After Hip Fracture: A Randomized Trial. *Journal of the American Geriatrics Society* 2001;49(5):516-22. <a href="https://www.ncbi.nlm.nih.gov/pubmed/11380742">https://www.ncbi.nlm.nih.gov/pubmed/11380742</a> [Accessed August 2019]

Melling, A.C., Ali, B., Scott, E.M. and Leaper, D.J., 2001. Effects of preoperative warming on the incidence of wound infection after clean surgery: a randomised controlled trial. *The Lancet*, 358(9285), pp.876-880. <a href="https://www.ncbi.nlm.nih.gov/pubmed/11567703">https://www.ncbi.nlm.nih.gov/pubmed/11567703</a> [Accessed August 2019]

NICE National Institute for Health and Care Excellence. Clinical guideline CG124. *Hip fracture: management.* London: NICE, 2017. www.nice.org.uk/Guidance/CG124 [Accessed August 2019]

NICE National Institute for Health and Care Excellence. Quality Standard QS16. *Hip fracture in adults.* London: NICE, 2017. <a href="https://www.nice.org.uk/Guidance/QS16">www.nice.org.uk/Guidance/QS16</a> [Accessed August 2019]

NHS England and NHS Improvement. Ref: 2017/18 and 2018/19 National Tariff Payment System: a consultation notice. Annex B6 Guidance on Best Practice Tariffs. London: NHS Improvement, 2016. <a href="https://improvement.nhs.uk/resources/national-tariff-1920-consultation/">https://improvement.nhs.uk/resources/national-tariff-1920-consultation/</a> [Accessed August 2019]

Royal College of Physicians, British Geriatrics Society and British Pain Society. *The assessment of pain in older people: national guidelines.* Concise guidance to good practice series, No 8. London: RCP, 2007.

https://www.britishpainsociety.org/static/uploads/resources/files/book\_pain\_older\_people.pdf [Accessed August 2019

Salkeld G, Ameratunga SN, Cameron ID *et al*. Quality of life related to fear of falling and hip fracture in older women: a time trade off study. *BMJ* 2000; 320(7231):341–6.

https://www.ncbi.nlm.nih.gov/pubmed/10657327 [Accessed August 2019]

#### **NAIF**

National Institute for Health and Care Excellence. *Falls in older people: assessing risk and prevention.* NICE clinical guideline (CG161). Manchester: NICE, 2013. <a href="https://www.nice.org.uk/guidance/cg161">www.nice.org.uk/guidance/cg161</a> [Accessed August 2019]

National Patient Safety Agency. *The 'How to' Guide for Reducing harm from falls*. London: NPSA, 2009. <a href="http://patientsafety.health.org.uk/resources/how-guide-reducing-harm-falls">http://patientsafety.health.org.uk/resources/how-guide-reducing-harm-falls</a> [Accessed August 2019]

National Institute for Health and Care Excellence. *Falls in older people*. NICE quality standard (QS86). Manchester: NICE, 2017. <a href="https://www.nice.org.uk/guidance/qs86">www.nice.org.uk/guidance/qs86</a> [Accessed August 2019]

National Institute for Health and Clinical Excellence. *Delirium: prevention, diagnosis and management*. NICE clinical guideline (CG103). Manchester: NICE, 2010. <a href="https://www.nice.org.uk/guidance/cg103">www.nice.org.uk/guidance/cg103</a> [Accessed August 2019]

National Patient Safety Agency. *Slips trips and falls in hospital*. London: NPSA, 2007. <a href="https://www.nrls.npsa.nhs.uk/resources/?entryid45=59821">www.nrls.npsa.nhs.uk/resources/?entryid45=59821</a> [Accessed August 2019]

National Patient Safety Agency. *Using bedrails safely and effectively.* London: NPSA, 2007. <a href="https://www.nrls.npsa.nhs.uk/resources/?Entryld45=59815">www.nrls.npsa.nhs.uk/resources/?Entryld45=59815</a> [Accessed August 2019]

NHS Improvement. *The incidence and costs of inpatient falls in hospitals*. London: NHSI, 2017. <a href="https://improvement.nhs.uk/resources/incidence-and-costs-inpatient-falls-hospitals/">https://improvement.nhs.uk/resources/incidence-and-costs-inpatient-falls-hospitals/</a> [Accessed August 2019]

NHS Improvement. Supporting NHS providers to deliver the right staff, with the right skills, in the right place at the right time. NHSI, 2019. <a href="https://improvement.nhs.uk/resources/supporting-nhs-providers-right-skills-staff-place-time/">https://improvement.nhs.uk/resources/supporting-nhs-providers-right-skills-staff-place-time/</a> [Accessed August 2019]

#### **FLS-DB**

British Orthopaedic Association/British Geriatrics Society. *The care of patients with fragility fracture*. London: BOA, 2007. <a href="https://www.bgs.org.uk/resources/care-of-patients-with-fragility-fracture-blue-book">https://www.bgs.org.uk/resources/care-of-patients-with-fragility-fracture-blue-book</a> [Accessed August 2019]

Li L, Roddam A, Gitlin M *et al.* Persistence with osteoporosis medications among postmenopausal women in the UK General Practice Research Database. *Menopause* 2012;19:33–40. <a href="https://journals.lww.com/menopausejournal/Abstract/2012/01000/Persistence with osteoporosis medications among.8.aspx">https://journals.lww.com/menopausejournal/Abstract/2012/01000/Persistence with osteoporosis medications among.8.aspx</a> [Accessed August 2019]

National Osteoporosis Guideline Group. *NOGG 2017: Clinical guideline for the prevention and treatment of osteoporosis.* Sheffield: NOGG, 2017 <a href="www.sheffield.ac.uk/NOGG/">www.sheffield.ac.uk/NOGG/</a> [Accessed August 2019]

National Institute for Health and Care Excellence. *Falls in older people: assessing risk and prevention.* NICE clinical guideline (CG161). Manchester: NICE, 2013. <a href="www.nice.org.uk/guidance/cg161">www.nice.org.uk/guidance/cg161</a> [Accessed August 2019].

National Institute for Health and Care Excellence. *Falls in older people*. NICE quality standard (QS86). Manchester: NICE, 2015. <a href="https://www.nice.org.uk/guidance/qs86">www.nice.org.uk/guidance/qs86</a> [Accessed August 2019].

National Institute for Health and Care Excellence. *Alendronate, etidronate, risedronate, raloxifene, strontium ranelate and teriparatide for the secondary prevention of osteoporotic fragility fractures in postmenopausal women*. NICE technology appraisal (TA161). Manchester: NICE, 2008. <a href="https://www.nice.org.uk/guidance/ta161">www.nice.org.uk/guidance/ta161</a> [Accessed August 2019].

National Institute for Health and Care Excellence. *Osteoporosis*. NICE quality standard (QS149). Manchester: NICE, 2017. <a href="https://www.nice.org.uk/guidance/qs149">www.nice.org.uk/guidance/qs149</a> [Accessed August 2019].

Quality and Outcomes Framework. *Achievement, prevalence and exceptions data, 2012/13*. www.hscic.gov.uk/catalogue/PUB12262 [Accessed August 2019].

Royal Osteoporosis Society. *Benefits calculator 2016*. Bath: ROS, 2016. <a href="https://benefits.theros.org.uk/">https://benefits.theros.org.uk/</a> [Accessed August 2019]

Royal Osteoporosis Society. *Effective secondary prevention of fragility fractures: clinical standards for fracture liaison services.* Bath: ROS, 2015. <a href="https://theros.org.uk/media/1776/clinical-standards-report.pdf">https://theros.org.uk/media/1776/clinical-standards-report.pdf</a> [Accessed August 2019].