

**Supplementary material: Mapping tables**

**Table 1 Technology mapping**

Study name	Year	Title	Study design	Setting	Target population	Intervention	Acceptability	Barriers & facilitators	Economic study	Resident Outcomes	Staff Outcomes	Service Use Outcomes
Abdelrahman	2015	Utilization of a Mobile Videoconferencing Tool (FaceTime) for Realtime Evaluation of Critically Ill Residents in Skilled Nursing Facilities	Cohort (prospective)	USA	Staff	Telehealth	Y	N	N	N	N	N
Age UK	2010	Technology and Older People Evidence Review	Evidence review	UK	Residents	Technologies	Y	Y	Y	Y	N	N
Age UK	2012	The digital inclusion of older people in care homes	Report	UK	Mixed	Technologies	Y	Y	N	N	N	N
Age UK	2013	Digital inclusion evidence review	Evidence review	UK	Residents	Technologies	Y	N	N	N	N	N
Alexander	2009	IT Sophistication in Nursing Homes	Qualitative (mixed methods)	USA	Staff	Technologies	Y	Y	N	N	N	N
Alexander	2015	Preparing Nursing Homes for the Future of Health Information Exchange	Qualitative (mixed methods)	USA	Staff	Digital records	Y	Y	N	N	N	N
Alexander	2016	The State of Nursing Home Information Technology	Cross-sectional	USA	Staff	Digital records	Y	N	N	N	N	N

		Sophistication in Rural and Nonrural US Markets											
Aloulou	2013	Deployment of assistive living technology in a nursing home environment: methods and lessons learned	Qualitative (mixed methods)	Other	Mixed	Technologies	Y	Y	N	Y	N	N	N
Alzheimer's Society	2011	Assistive Technology	Opinion	UK	Mixed	Technologies	Y	Y	N	N	N	N	N
Alzheimer's Society	2015	Assistive technology – devices to help with everyday living	Overview	UK	Residents	Technologies	Y	Y	N	N	N	N	N
Anon	2008	Real or Robotic dogs wag away loneliness	Quasi-experimental	Other	Residents	Robots	N	N	N	Y	N	N	N
Anon	2009	Electronic medication administration records improve communication and decisionmaking in nursing homes	Descriptive	USA	Staff	Digital records	N	Y	N	N	Y	N	N
Anon	2009	Residential facility adopts environmentally friendly pharmacy	Descriptive	Other	Staff	Technologies	N	N	N	N	Y	Y	Y
Anon	2010	Nursing home users of information technology start to see its benefits	Descriptive	Other	Staff	Digital records	Y	Y	N	N	N	N	N
Anon	2011	Using health information	RCT	Other	Families	Technologies	N	N	N	Y	N	Y	Y

		technology to reduce adverse drug events in long-term care facilities										
Anon	2013	Computerized clinical decision support produces only modest savings for nursing home residents with impaired kidney function	RCT	Other	Residents	Technologies	N	N	Y	N	N	N
Babalola	2014	Building a Health Information Technology Infrastructure in Long-Term Care	Descriptive	USA	Staff	Technologies	Y	N	N	N	N	N
Back	2012	Remote monitoring of nursing Home residents using a humanoid robot	Descriptive	Europe, non UK	Staff	Surveillance /monitoring	Y	N	N	N	N	N
Back	2013	Robot Guided Exercise Program for the Rehabilitation of Older Nursing Home Residents	Cohort (prospective)	Europe	Residents	Robots	Y	Y	N	N	N	N
Baker	2015	Alleviating staff stress in care homes for people with dementia: protocol for stepped-wedge cluster randomised trial to evaluate a web-based	Protocol	UK	Staff	Education	N	N	N	N	Y	N

		Mindfulness- Stress Reduction course										
Bakerjian	2009	Are You on the Health Information Technology Bandwagon?	Opinion	USA	Mixed	Technologies	N	Y	N	N	N	N
Banks	2008	Animal-Assisted Therapy and Loneliness in Nursing Homes: Use of Robotic versus Living Dogs	RCT	USA	Residents	Robots	N	N	N	Y	N	N
Banks	2013	Artificial Emotions: Robots Caring for the Elderly	Descriptive	USA	Residents	Robots	Y	Y	N	Y	N	N
Barbour	2016	Telehealth for patients with Parkinson's disease: delivering efficient and sustainable long-term care	Cohort (retrospective)	USA	Residents	Telehealth	Y	N	Y	Y	N	N
Baril	2014	Impact of Technological Innovation on a Nursing Home Performance and on the Medication-use Process Safety	Case study	Other	Staff	Digital records	N	N	N	N	Y	Y
Baril	2014	Technology and medication errors: impact in nursing homes	Case study	Other	Staff	Digital records	N	N	N	N	N	Y
Barrett	2009	Challenges faced in implementation of a telehealth enabled	Descriptive	Other	Mixed	Telehealth	N	Y	N	N	N	N

		chronic wound care system										
Bartle	2017	The Role of Technology in Care Homes	Opinion	UK	Mixed	Technologies	Y	Y	N	N	N	N
Beeckman	2013	A multi-faceted tailored strategy to implement an electronic clinical decision support system for pressure ulcer prevention in nursing homes: A two-armed randomized controlled trial	RCT	Europe, non UK	Mixed	Technologies	N	N	N	Y	Y	N
Beedholm	2016	What Was (Also) at Stake When a Robot Bathtub Was Implemented in a Danish Elder Center: A Constructivist Secondary Qualitative Analysis	Qualitative	Europe, non UK	Mixed	Robots	Y	N	N	N	N	N
Bemelmans	2012	Socially Assistive Robots in Elderly Care: A Systematic Review into Effects and Effectiveness	Systematic review	Other	Residents	Robots	N	N	N	Y	N	N
Bemelmans	2015	Effectiveness of Robot Paro in Intramural Psychogeriatric Care: A Multicenter	Quasi-experimental	Europe, non UK	Residents	Robots	N	N	N	Y	N	N

		Quasi-Experimental Study										
Bemelmans	2016	How to use robot interventions in intramural psychogeriatric care; A feasibility study	Qualitative (mixed methods)	Europe, non UK	Residents	Robots	Y	N	N	Y	Y	N
Bennet	2015	TopoTiles: Storytelling in Care Homes with Topographic Tangibles	Descriptive	UK	Residents	Technologies	Y	Y	N	N	N	N
Bennett	2016	Rekindling Imagination in Dementia Care with the Resonant Interface Rocking Chair	Descriptive	UK	Residents	Technologies	Y	N	N	N	N	N
Bereznicki	2014	Improving the management of warfarin in aged-care facilities utilising innovative technology: a proof-of-concept study	Descriptive	Europe, non UK	Staff	Technologies	N	N	N	Y	Y	N
Bezboruah	2014	Management attitudes and technology adoption in long-term care facilities	Descriptive	Other	Staff	Technologies	Y	Y	N	N	Y	N
Biglan	2009	Telemedicine for the Care of Nursing Home Residents	Descriptive	Europe	Residents	Telehealth	N	N	N	Y	N	N

		with Parkinson's disease											
Biglan	2011	The generalizability of telemedicine for providing care to individuals with chronic neurological conditions residing in nursing homes	RCT	Other	Mixed	Telehealth	Y	N	N	N	N	N	N
Blair Irvine	2012	Mental Illness Training for Licensed Staff in Long-Term Care	RCT	USA	Staff	Education	Y	N	N	N	Y	N	N
Bobillier Chaumon	2014	Can ICT improve the quality of life of elderly adults living in residential home care units? From actual impacts to hidden artefacts	Qualitative (mixed methods)	Europe, non UK	Residents	Technologies	Y	N	N	N	N	N	N
Bollen	2005	Introduction of electronic prescribing in an aged care facility	Qualitative (mixed methods)	Other	Mixed	Digital records	Y	Y	N	Y	Y	Y	Y
Bond	2000	Computer-Aided Cognitive Training of the Aged	Quasi-experimental	USA	Residents	Technologies	N	N	N	Y	N	N	N
Bowen	2013	Tracking technology: Lessons learned in two health care sites	Descriptive	USA	Mixed	Surveillance /monitoring	Y	Y	N	N	N	N	N
Brandt	2011	The use of Nintendo Wii with	Qualitative (mixed methods)	USA	Residents	Gaming	Y	Y	N	Y	N	N	N

		long term care residents										
Brankline	2009	Practical Innovations: Technology-Assisted Referrals	Non-randomised controlled trial	USA	Mixed	Digital records	N	N	N	Y	Y	Y
Bratan	2004	A new monitoring service for long term residential care	Descriptive	UK	Mixed	Surveillance /monitoring	Y	Y	N	N	N	N
Braun	2014	“Interactive surfaces” technology as a potential tool to stimulate physical activity in psychogeriatric nursing home residents	Cohort (prospective)	Europe, non UK	Residents	Technologies	Y	N	N	Y	N	N
Broadbent	2016	Benefits and problems of health-care robots in aged care settings: A comparison trial	Non-randomised controlled trial	Other	Mixed	Robots	Y	N	N	Y	Y	N
Broder	2015	Skilled Nursing Facility/Plastic Surgery Interdisciplinary Team Approach: Utilizing Inter-Professional Collaboration and Innovative Telemedicine Technologies to Provide	Descriptive	USA	Residents	Telehealth	N	N	N	Y	Y	Y



		Comprehensive Wound Care Across the Healthcare Continuum										
Brown	2000	The Emerging Role of Telemedicine in Extended Care Risk Management	Descriptive	USA	Residents	Telehealth	Y	Y	N	N	N	N
Bruun-Pedersen	2015	Simulating Nature for Elderly Users - A Design Approach for Recreational Virtual Environments	Descriptive	Europe, non UK	Residents	Technologies	N	Y	N	N	N	N
Burdea	2015	Feasibility study of the BrightBrainer™ integrative cognitive rehabilitation system for elderly with dementia	Descriptive	USA	Residents	Gaming	Y	N	N	Y	N	N
Burns	2007	Innovation in Aged Care: The introduction of electronic medication charts and prescribing in aged care facilities: An evaluation	Qualitative (mixed methods)	Other	Staff	Digital records	Y	Y	Y	N	Y	N
Bygholm	2014	Learning from an Ambient Assisted Living Lab: the case of the Intelligent Bed	Descriptive	Europe, non UK	Mixed	Surveillance /monitoring	Y	Y	N	Y	Y	N

Campbell	2011	Dementia Care: could animal robots benefit residents	Case study	UK	Mixed	Robots	Y	N	N	N	N	N
Campbell	2016	Continuity matters: Examining the 'information gap' in transfer from Residential Aged Care, ambulance to emergency triage in southern Tasmania	Cross-sectional	Other	Residents	Communication technologies	N	N	N	N	N	Y
Castle	2009	Information technology and quality of nursing home care	Cross-sectional	USA	Mixed	Digital records	N	N	N	Y	N	N
Centre for Policy on Ageing	2014	The potential impact of new technologies	Evidence review	UK	Mixed	Technologies	Y	Y	N	N	N	N
Centre for Workforce Intelligence	2013	The Technology Horizon: Preliminary Review on Technologies Impacting the Future Health & Social Care Workforce	Overview	UK	Mixed	Technologies	N	Y	N	N	N	N
Chae	2001	Patient satisfaction with telemedicine in home health services for the elderly	Quasi-experimental	Other	Residents	Telehealth	Y	N	N	N	N	Y
Chan	2000	Teledermatology in Hong Kong: a cost effective method to provide service to	Cohort (prospective)	Other	Mixed	Telehealth	Y	Y	Y	Y	N	Y

		the elderly patients living in institutions										
Chan	2001	The role of telenursing in the provision of geriatric outreach services to residential homes in Hong Kong	Cohort (prospective)	Other	Residents	Telehealth	Y	Y	N	Y	Y	Y
Chang	2013	Use of seal-like robot PARO in sensory group therapy for older adults with dementia	Cohort (prospective)	USA	Mixed	Robots	Y	N	N	Y	N	N
Chang	2014	Observational Study of Naturalistic Interactions with the Socially Assistive Robot PARO in a Nursing Home	Descriptive	USA	Mixed	Robots	Y	Y	N	N	N	N
Chang	2015	Studying Socially Assistive Robots in Their Organizational Context: Studies with PARO in a Nursing Home	Descriptive	USA	Residents	Robots	Y	N	N	N	N	N
Chen	2012	Using Somatosensory Video Games to Promote Quality of Life for the Elderly with Disabilities	Case study	Other	Residents	Gaming	N	N	N	Y	N	N

Cherry	2011	Evaluating the Effectiveness of Electronic Medical Records in a Long Term Care Facility Using Process Analysis	Quasi-experimental	USA	Staff	Digital records	N	N	N	N	Y	N
Chesler	2015	The effects of playing Nintendo Wii on depression, sense of belonging and social support in Australian aged care residents: a protocol study of a mixed methods intervention trial	Quasi-experimental	Other	Residents	Gaming	Y	N	N	Y	N	N
Clark	2009	Clinical Use of Nintendo Wii™ Bowling Simulation to Decrease Fall Risk in an Elderly Resident of a Nursing Home: A Case Report	Case study	USA	Residents	Gaming	N	N	N	Y	N	N
Cobb	2007	The Case for IT Investment	Descriptive	USA	Mixed	Digital records	Y	N	Y	N	N	N
Courtney	2006	Privacy and senior adoption of assistive technology in residential care	Descriptive	USA	Residents	Technologies	Y	N	N	N	N	N
Curyto	2002	Bringing Technology into the Nursing Home: Barriers and Opportunities.	Descriptive	USA	Mixed	Technologies	N	N	N	N	N	N

Daly	2005	A Nursing Home Telehealth System: Keeping Residents Connected	Descriptive	USA	Mixed	Telehealth	Y	Y	N	N	N	N
Damant	2015	What are the likely changes in society and technology which will impact upon the ability of older adults to maintain social (extra-familial) networks of support now, in 2025 and in 2040?	Evidence review	UK	Residents	Technologies	Y	Y	N	N	N	N
De Luca	2016	Cognitive training for patients with dementia living in a Sicilian nursing home: a novel web-based approach	Case-control	Europe, non UK	Residents	Technologies	N	N	N	Y	N	N
De Luca	2016	Tele-health-care in the elderly living in nursing home: the first Sicilian multimodal approach	RCT	Other	Residents	Telehealth	N	N	N	Y	N	Y
de Veer	2011	Successful implementation of new technologies in nursing care: a questionnaire survey of nurse-users	Cross-sectional	Europe, non UK	Staff	Technologies	Y	Y	N	N	N	N
Degenholtz	2008	Health information technology in	Qualitative	USA	Staff	Digital records	Y	Y	N	N	N	N

		nursing homes: Clinical care processes that can benefit from automation										
Degenholtz	2010	Implementing health information technology in US Nursing Homes: A report on adoption and use	Cross- sectional	USA	Staff	Digital records	N	Y	N	N	N	N
Degenholtz	2011	Health information technology in US Nursing Homes: Availability and use	Cross- sectional	USA	Staff	Digital records	N	Y	N	N	N	N
Degenholtz	2016	Development of an Applied Framework for Understanding Health Information Technology in Nursing Homes	Consensus techniques	USA	Mixed	Technologies	Y	N	N	N	Y	N
Demiris	2008	Use of Videophones for Distant Caregiving: An Enriching Experience for Families and Residents in Long Term Care	Qualitative (mixed methods)	USA	Mixed	Telehealth	Y	N	N	Y	N	N
Demiris	2013	Older adults' acceptance of a community-based telehealth wellness system	Qualitative	USA	Residents	Telehealth	Y	Y	N	N	N	N
Dewsbury	2012	Is your home telecare aware?	Descriptive	UK	Mixed	Telehealth	N	Y	N	N	N	N

Dorsten	2009	Ethical perspectives on emerging assistive technologies: Insights from focus groups with stakeholders in long-term care	Qualitative (mixed methods)	USA	Mixed	Surveillance /monitoring	Y	N	N	N	N	N
Doshi-Velez	2012	Improving Safety and Operational Efficiency in Residential Care Settings With Wi-Fi-Based Localization	Case study	USA	Mixed	Surveillance /monitoring	N	Y	N	N	Y	N
Driessen	2016	Perceived Benefits, Barriers, and Drivers of Telemedicine from the Perspective of Skilled Nursing Facility Administrative Staff Stakeholders	Cross-sectional	USA	Staff	Telehealth	Y	Y	N	N	N	N
Eccles	2012	Telehealthcare in care homes: the use of falls detectors and bed/chair sensors to enhance the safety and experience of care home residents	Descriptive	UK	Mixed	Surveillance /monitoring	N	N	N	Y	N	N
Edirippulige	2013	A systematic review of telemedicine services for	Systematic review	Other	Mixed	Telehealth	Y	N	Y	Y	Y	Y

		residents in long term care facilities											
Elliott	2016	Evaluation of a hybrid paper-electronic medication management system at a residential aged care facility	Descriptive	Other	Staff	Digital records	N	N	N	N	N	N	Y
Eyers	2013	Safe and sound? Night-time	Qualitative	UK	Mixed	Surveillance /monitoring	Y	N	N	N	N	N	N
Field	2008	Costs Associated with Developing and Implementing a Dosing for Patients with Renal Insufficiency in the Long-term Care Setting	Quasi-experimental	Other	Staff	Digital records	N	N	Y	N	Y	N	N
Filipova	2015	Health information exchange capabilities in Skilled Nursing Facilities	Cross-sectional	USA	Staff	Communication technologies	N	Y	N	N	N	N	Y
Fossum	2011	An Evaluation of the Usability of a Computerized Decision Support System for Nursing Homes	Qualitative (mixed methods)	Europe, non UK	Staff	Technologies	Y	Y	N	N	Y	N	N
Fossum	2012	The Experiences of Using a Computerized Decision Support System	Qualitative (mixed methods)	Europe, non UK	Mixed	Technologies	N	Y	N	N	Y	N	N



Fournier	2004	Northern New England's largest nursing facility documents its transition to an integrated electronic health records system	Descriptive	USA	Staff	Digital records	Y	Y	N	N	N	N
Freedman	2005	An exploratory study of barriers to implementing technology in U.S. residential long-term care settings	Qualitative	USA	Residents	Technologies	Y	Y	N	Y	Y	N
Fu	2015	The Effectiveness of Exergaming Training for Reducing Fall Risk and Incidence among the Frail Older Adults with a History of Falls	RCT	Other	Residents	Gaming	N	N	N	Y	N	N
Gaver	2011	The Photostrroller: Supporting Diverse Care Home Residents in Engaging with the World	Descriptive	UK	Residents	Technologies	Y	N	N	N	N	N
Gerling	2012	Long-Term Use of Motion-Based Video Games in Care Home Settings	Quasi-experimental	Other	Residents	Gaming	Y	Y	N	Y	N	N
Gerling	2015	Full-Body Motion-Based Game Interaction for Older Adults	Qualitative (mixed methods)	UK	Mixed	Gaming	Y	Y	N	N	N	N

Ghorbel	2013	Multimodal notification framework for elderly and professional in a smart nursing home	Descriptive	Europe, non UK	Mixed	Technologies	Y	N	N	N	N	N
Gietzelt	2014	A prospective field study for sensor-based identification of fall risk in older people with dementia	Cohort (prospective)	Europe, non UK	Residents	Surveillance /monitoring	N	N	N	Y	N	N
Grabowski	2013	Use Of Telemedicine Can Reduce Hospitalizations Of Nursing Home Residents And Generate Savings For Medicare	RCT	USA	Staff	Telehealth	Y	N	Y	N	N	N
Grant	2014	Testing Telehealth Using Technology-Enhanced Nurse Monitoring	Qualitative	USA	Mixed	Telehealth	Y	Y	N	N	Y	N
Guilfoyle	2002	Videoconferencing in facilities providing care for elderly people	Quasi-experimental	Other	Mixed	Telehealth	Y	Y	N	N	N	N
Guilfoyle	2003	User satisfaction with allied health services delivered to residential facilities via videoconferencing	Qualitative (mixed methods)	Other	Residents	Telehealth	Y	Y	N	N	N	N
Hamada	2008	Robot Therapy as for Recreation for	Quasi-experimental	Other	Residents	Robots	N	N	N	Y	N	N

		Elderly People with Dementia – Game Recreation Using a Pet-type Robot											
Handler	2013	Use and Perceived Benefits of Mobile Devices by Physicians in Preventing Adverse Drug Events in the Nursing Home	Cross-sectional	USA	Mixed	Digital records	Y	Y	N	N	N	N	N
Hardy	2016	It was so simple and easy: the nursing home improving care with tech	Case study	UK	Staff	Digital records	Y	Y	N	N	Y	N	N
Harrington	2003	Is computer based instruction an effective way to present fire safety training to long-term care staff?	Quasi-experimental	USA	Staff	Education	Y	N	N	N	Y	N	N
Hensel	2006	A Telehealth Case Study of Videophone Use Between Family Members	Qualitative	USA	Residents	Telehealth	Y	N	N	N	N	N	N
Hensel	2006	Videophone Communication Between Residents and Family: A Case Study	Case study	USA	Residents	Telehealth	Y	Y	N	N	N	N	N
Hensel	2007	Videophone Communication Between Residents	Qualitative	USA	Mixed	Communication technologies	Y	Y	N	N	N	N	N

		and Family: A Case Study										
Hensel	2009	A Comparison of Video-Based Resident-Family Communication in a Nursing Home and a Congregate Living Facility	Qualitative	USA	Mixed	Communication technologies	Y	Y	N	N	N	N
Hex	2015	Telemedicine in care homes in Airedale, Wharfedale and Craven	Cohort (retrospective)	UK	Residents	Telehealth	N	N	Y	N	N	Y
Hitt	2016	Health care information technology, work organization, and nursing home performance	Qualitative (mixed methods)	USA	Mixed	Digital records	N	N	Y	N	Y	Y
Hobday	2010	Feasibility of Internet Training for Care Staff of Residents with Dementia: The CARES® Program	Quasi-experimental	USA	Staff	Education	Y	N	N	N	Y	N
Hoey	2010	Automated handwashing assistance for persons with dementia using video and a partially observable Markov decision process	Case study	Other	Residents	Technologies	N	Y	N	Y	N	N

Hofmeyer	2016	Implementation of Telemedicine Consultation to Assess Unplanned Transfers in Rural Long-Term Care Facilities, 2012-2015: A Pilot Study	Cohort (prospective)	USA	Staff	Telehealth	N	N	Y	N	N	Y
Hori	2004	Sensor Network for Supporting Elderly Care Home	Descriptive	Other	Mixed	Surveillance /monitoring	N	Y	N	Y	N	N
Hori	2006	Evidence-based Nursing Care Support enhanced by Minimally Privacy Invasive and Pervasive Sensing Technology	Descriptive	Other	Staff	Surveillance /monitoring	N	N	N	Y	N	N
Hoti	2012	Medication supply to residential aged care facilities in Western Australia using a centralized medication chart to replace prescriptions	Qualitative	Other	Staff	Digital records	Y	Y	N	N	N	N
Hsu <sup>148</sup>	2011	A "Wii" bit of fun: The effects of adding Nintendo Wii® Bowling to a standard exercise regimen for residents of long-term care with	RCT	Other	Residents	Gaming	Y	N	N	Y	N	N

		upper extremity dysfunction										
Hui	2001	Telemedicine: A Pilot Study in Nursing Home Residents	Cohort (prospective)	Other	Staff	Telehealth	N	N	Y	Y	Y	Y
Hui	2002	Telehealth for older patients: the Hong Kong experience	Cohort (prospective)	Other	Mixed	Telehealth	Y	Y	Y	Y	Y	Y
Hung	2007	A Study of the Electronic Healthy Diet and Nutrition Assessment System Applied in a Nursing Home	Descriptive	Other	Mixed	Technologies	N	N	N	N	N	N
Hustey	2009	The Use of a Computerized System to Improve Information Transfer during Patient Transition from a Skilled Nursing Facility to the Emergency Department	Quasi-experimental	USA	Mixed	Communication technologies	Y	N	N	N	Y	Y
Hustey	2010	An Internet-Based Communication Network for Information Transfer During Patient Transitions from Skilled Nursing Facility to the Emergency Department	Quasi-experimental	USA	Residents	Communication technologies	Y	N	N	N	Y	Y

Hustey	2012	Implementing an Internet-Based Communication Network for Use during Skilled Nursing Facility to Emergency Department Care Transitions: Challenges and Opportunities for Improvement	Quasi-experimental	USA	Staff	Communication technologies	Y	Y	N	N	Y	Y
Iio	2014	Social Acceptance by Elderly People of a Fall-detection System with Range Sensors in a Nursing Home	Cohort (prospective)	Other	Residents	Surveillance/monitoring	Y	N	N	N	N	N
Irvine	2012	An Internet Training to Reduce Assaults in Long-Term Care	RCT	USA	Staff	Education	Y	N	N	N	Y	N
Irvine	2012	Internet Training to Respond to Aggressive Resident Behaviors	RCT	USA	Staff	Education	Y	N	N	N	Y	N
Jiang	2014	The Impact of Electronic Health Records on Client Safety in Aged Care Homes	Systematic review	Other	Residents	Digital records	N	Y	N	Y	N	N
Johansson-Pajala	2016	Nurses' use of computerised decision support systems affects	Qualitative	Europe, non UK	Staff	Digital records	Y	Y	N	N	N	N

		drug monitoring in nursing homes										
Johnston	2001	Telepsychiatry consultations to a rural nursing facility: a 2-year experience	Qualitative (mixed methods)	USA	Residents	Telehealth	N	Y	N	N	N	N
Jøranson	2015	Effects of participation in robot assisted activity groups for nursing home patients with dementia on symptoms of agitation and depression - a cluster-randomised trial	RCT (Cluster)	Europe, non UK	Mixed	Robots	N	N	N	Y	N	N
Jøranson	2015	Effects on Symptoms of Agitation and Depression in Persons with Dementia Participating in Robot Assisted Activity: A Cluster-Randomized Controlled Trial	RCT (Cluster)	Europe, non UK	Residents	Robots	N	N	N	Y	N	N
Jøranson	2016	Group activity with Paro in nursing homes: systematic investigation of behaviors in participants	Cohort (prospective)	Europe, non UK	Residents	Robots	Y	N	N	Y	N	N



Jung	2009	Games for a Better Life: Effects of Playing Wii Games on the Well-Being of Seniors in a Long-Term Care Facility	Case-control	Other	Residents	Gaming	N	N	N	Y	N	N
Kachouie	2014	Socially Assistive Robots in Elderly Care: A Mixed-Method Systematic Literature Review	Systematic review	Other	Residents	Robots	N	N	N	Y	N	N
Kanstrup	2015	Monitoring Technology Meets Care Work: Challenges of monitoring wet-beds in a nursing home	Qualitative (mixed methods)	Europe, non UK	Staff	Surveillance /monitoring	Y	Y	N	N	N	N
Kapadia	2015	Emerging ICT implementation issues in aged care	Systematic review	Other	Mixed	Technologies	Y	Y	N	N	N	N
Keogh	2014	Physical and psychosocial function in residential aged-care elders: Effect of Nintendo Wii sports games	Quasi-experimental	Other	Residents	Gaming	Y	N	N	Y	N	N
Khosla	2012	Interactive Multimodal Social Robot for Improving Quality of Care of Elderly in Australian Nursing Homes	Descriptive	Other	Residents	Robots	Y	N	N	N	N	N

Khosla	2013	Affective Robot Enabled Capacity and Quality Improvement of Nursing Home Aged Care Services in Australia	Qualitative (mixed methods)	Other	Residents	Robots	Y	N	N	N	N	N
Kidd	2006	A Sociable Robot to Encourage Social Interaction among the Elderly	Descriptive	USA	Residents	Robots	Y	Y	N	Y	N	N
Kidd	2010	Telehealth in palliative care in the UK: a review of the evidence	Systematic review	UK	Mixed	Telehealth	Y	N	N	N	N	N
Knapp	2015	The case for investment in technology to manage the global costs of dementia	Evidence review	UK	Mixed	Technologies	Y	Y	Y	Y	N	N
Kong	2012	Development of an educational app and website on restraint-free care for Korean nursing homes	Qualitative	Other	Staff	Education	Y	Y	N	N	Y	N
Kosse	2013	Sensor technologies aiming at fall prevention in institutionalized old adults: A synthesis of current knowledge	Systematic review	Europe, non UK	Residents	Surveillance /monitoring	Y	Y	N	Y	N	N
Lai	2015	An intelligent health monitoring system using radio-	Cohort (prospective)	USA	Residents	Surveillance /monitoring	N	N	N	N	N	N

		frequency identification technology											
Lattanzio	2014	Advanced Technology Care Innovation for Older People in Italy:Necessity and Opportunity to Promote Health and Wellbeing	Descriptive	Europe, non UK	Residents	Technologies	N	N	N	N	N	N	N
Lawrence	2010	Interactive Games to Improve Quality of Life for the Elderly: Towards Integration into a WSN Monitoring System	Descriptive	Other	Residents	Gaming	N	Y	N	N	N	N	N
Lesnoff-Caravaglia	2005	Gerontechnology in Health care Settings: Myth or Reality	Cross-sectional	USA	Mixed	Technologies	Y	N	N	N	N	N	N
Libin	2004	Therapeutic robotat for Nursing Home Residents with Dementia: Preliminary Inquiry	Qualitative (mixed methods)	USA	Residents	Robots	Y	N	N	Y	N	N	N
Lin	2014	Bidirectional and Multi-User Telerehabilitation System: Clinical Effect on Balance, Functional Activity, and Satisfaction in Patients with Chronic Stroke	RCT	Other	Residents	Telehealth	N	N	N	Y	N	N	N

		Living in Long-Term Care Facilities										
Little	2016	Health Information Technology in Long-Term Care: Potential for the Future	Descriptive	USA	Mixed	Technologies	Y	N	N	N	N	N
Loh	2009	Attitudes Toward Information and Communication Technology (ICT) in Residential Aged Care in Western Australia	Qualitative (mixed methods)	Other	Mixed	Communication technologies	Y	Y	N	N	N	N
Loveday	2016	Novel technology to help understand the context of physical activity and sedentary behaviour	Cross-sectional	UK	Residents	Surveillance /monitoring	N	N	N	Y	N	N
Low	2013	Last moments of life: Can telemedicine play a role?	Descriptive	Other	Mixed	Telehealth	Y	N	N	N	N	N
Lyketsos	2001	Telemedicine Use and the Reduction of Pyschiatric Admissions from Long-Term Care Facility	Quasi-experimental	USA	Mixed	Telehealth	N	N	N	N	N	Y
MacDonald	2005	Online training for healthcare workers improving the quality of life for dementia patients in	Descriptive	Other	Staff	Education	Y	Y	N	N	Y	N

		long term care facilities										
Maiden	2013	Computing technologies for reflective, creative care of people with dementia	Descriptive	Europe, non UK	Mixed	Technologies	Y	Y	N	N	N	N
Mansdorf	2009	Falls Reduction in Long-Term Care Facilities: A Preliminary Report of a New Internet-Based Behavioral Technique	Cohort (retrospective)	USA	Residents	Education	N	N	N	Y	N	N
Marino	2016	Cost-analysis of teledentistry in residential aged care facilities	Descriptive	Other	Mixed	Telehealth	N	N	Y	N	N	N
Marston	2013	Understanding the Nintendo Wii and Microsoft Kinect consoles in long-term care facilities	Systematic review	Other	Residents	Gaming	Y	Y	N	Y	N	N
Martin-Khan	2012	Telehealth for nursing homes: utilisation of specialists services	Cohort (prospective)	Other	Mixed	Telehealth	N	N	N	N	N	Y
McDonald	2012	Impact of technology-based care and management systems on aged care outcomes in Australia	Cross-sectional	Other	Staff	Digital records	Y	Y	N	Y	Y	N
McGibbon	2013	Lochaber telemedicine clinic	Descriptive	UK	Mixed	Telehealth	Y	N	Y	Y	N	Y

		– A new approach managing dementia in care homes										
McNeil	2013	Technology enhances employee learning, resident care	Opinion	USA	Mixed	Technologies	Y	Y	N	N	N	N
Meador	2009	Linking technology implementation to resident centred care in nursing homes	Descriptive	USA	Mixed	Digital records	Y	Y	N	N	Y	N
Meissner	2014	Staff experiences within the implementation of computer-based nursing records in residential aged care facilities: a systematic review and synthesis of qualitative research	Systematic review	Europe, non UK	Staff	Digital records	Y	Y	N	N	Y	N
Michel-Verkerke	2012	Evaluation of an Electronic Patient Record in a Nursing Home: One Size Fits All?	Qualitative (mixed methods)	Europe, non UK	Staff	Digital records	Y	Y	N	N	N	N
Mickus	2002	Televisits: Sustaining long distance family relationships among institutionalized elders through technology	Descriptive	USA	Mixed	Technologies	Y	Y	N	Y	N	N

Millington	2015	Exergaming in retirement centres and the integration of media and physical literacies	Qualitative (mixed methods)	UK	Mixed	Technologies	Y	Y	N	N	N	N
Miskelly	2004	A novel system of electronic tagging in patients with dementia and wandering	Descriptive	UK	Mixed	Surveillance /monitoring	Y	Y	N	Y	N	N
Mitzner	2014	Identifying the Potential for Robotics to Assist Older Adults in Different Living Environments	Descriptive	USA	Mixed	Robots	Y	Y	N	N	N	N
Morley	2012	High Technology Coming to a Nursing Home Near You	Descriptive	USA	Mixed	Technologies	Y	N	N	Y	N	N
Morley	2016	Telemedicine: Coming to Nursing Homes in the Near Future	Opinion	USA	Mixed	Telehealth	Y	N	N	Y	Y	Y
Morrissey	2015	Creative and Opportunistic Use of Everyday Music Technologies in a Dementia Care Unit	Qualitative (mixed methods)	Europe, non UK	Residents	Technologies	N	N	N	Y	N	N
Moyle	2013	Social Robots Helping People with Dementia: Assessing Efficacy of Social Robots in the Nursing Home Environment	Case study	Europe, non UK	Residents	Robots	Y	Y	N	Y	Y	N

Moyle	2013	Exploring the effect of companion robots on emotional expression in older adults with dementia: a pilot randomized controlled trial	RCT	Other	Residents	Robots	N	N	N	Y	N	N
Moyle	2015	Effect of an interactive therapeutic robotic animal on engagement, mood states, agitation and psychotropic drug use in people with dementia: a cluster-randomised controlled trial protocol	RCT (Cluster)	Other	Mixed	Robots	Y	N	Y	Y	Y	Y
Moyle	2017	Use of a Robotic Seal as a Therapeutic Tool to Improve Dementia Symptoms: A Cluster-Randomized Controlled Trial	RCT	Australia	Residents	Robots	N	N	N	Y	N	N
Munyisia	2011	Does the introduction of an electronic nursing documentation system in a nursing home reduce time on documentation	Cohort (prospective)	Other	Staff	Digital records	N	N	N	N	Y	N



		for the nursing staff?										
Munyisia	2012	The impact of an electronic nursing documentation system on efficiency of documentation by caregivers in a residential aged care facility	Cohort (prospective)	Other	Staff	Digital records	N	N	N	N	Y	N
Munyisia	2013	Caregivers' Time Utilization before and after the Introduction of an Electronic Nursing Documentation System in a Residential Aged Care Facility	Cohort (prospective)	Europe, non UK	Staff	Digital records	N	N	N	N	Y	N
Murphy	2005	Enabling frail older people with a communication difficulty to express their views: the use of Talking Mats™ as an interview tool	Descriptive	UK	Residents	Technologies	Y	N	N	Y	N	N
My Home Life	2012	My Home Life Digital Technology	Overview	UK	Residents	Technologies	Y	Y	N	N	N	N
Naganuma	2015	Use of Robotic Pets in Providing Stimulation for Nursing Home Residents with Dementia	Descriptive	Other	Residents	Robots	Y	N	N	Y	N	N

Nagayama	2016	Effectiveness and Cost-Effectiveness of Occupation-Based Occupational Therapy Using the Aid for Decision Making in Occupation Choice (ADOC) for Older Residents: Pilot Cluster Randomized Controlled Trial	RCT (Cluster)	Other	Residents	Technologies	N	Y	Y	Y	N	N
Nakai	2000	Non-restrictive Visual Respiration Monitoring	Case study	Other	Residents	Surveillance /monitoring	N	Y	N	Y	N	N
Namazi	2003	Computer use among elderly persons in long-term care facilities	Qualitative (mixed methods)	USA	Residents	Technologies	Y	Y	N	N	N	N
Niemeijer	2011	The ideal application of surveillance technology in residential care for people with dementia	Qualitative (mixed methods)	Europe, non UK	Staff	Surveillance /monitoring	Y	N	N	N	Y	N
Niemeijer	2014	The Use of Surveillance Technology in Residential Facilities for People with Dementia or Intellectual Disabilities: A Study Among	Qualitative (mixed methods)	Europe, non UK	Staff	Surveillance /monitoring	Y	Y	N	N	Y	N

		Nurses and Support Staff											
Niemeijer	2015	The experiences of people with dementia and intellectual disabilities with surveillance technologies in residential care	Qualitative	Europe, non UK	Residents	Surveillance /monitoring	Y	Y	N	Y	Y	N	
Novek	2000	Nurses' Perceptions of the Reliability of an Automated Medication Dispensing System	Qualitative (mixed methods)	Other	Staff	Technologies	Y	Y	N	N	Y	N	
Oliver	2006	A Promising Technology to Reduce Social Isolation of Nursing Home Residents	Opinion	USA	Mixed	Telehealth	Y	N	N	N	N	N	
Oliver	2010	Giving Long-Term Care Residents a Passport to the World with the Internet	Descriptive	USA	Mixed	Technologies	Y	N	N	N	N	N	
Pallawala	2001	EMR based telegeriatric system	Descriptive	Other	Mixed	Telehealth	Y	N	N	N	N	N	
Park	2012	A Study on Service Robot System for Elder Care	Descriptive	Other	Residents	Robots	Y	N	N	N	N	N	
Pillemer	2009	Health information technology evaluation in nursing homes: resident outcomes	Quasi-experimental	USA	Residents	Technologies	N	N	N	Y	N	N	

Pillemer	2012	Effects of Electronic Health Information Technology Implementation on Nursing Home Resident Outcomes	Quasi-experimental	USA	Residents	Technologies	Y	N	N	Y	N	N
Potts	2011	Telehealth: monitoring residents in care homes	Descriptive	UK	Residents	Telehealth	Y	Y	Y	N	N	N
Qadri	2009	Personal Digital Assistants as Point-of-Care Tools in Long-Term Care Facilities: A Pilot Study	Qualitative (mixed methods)	USA	Staff	Digital records	Y	Y	N	N	N	N
Qian	2015	The impact of electronic medication administration records in a residential aged care home	Qualitative (mixed methods)	Other	Mixed	Digital records	Y	Y	N	N	Y	N
Rabinowitz	2010	Benefits of a Telepsychiatry Consultation Service for Rural Nursing Home Residents	Descriptive	USA	Mixed	Telehealth	Y	N	Y	N	N	N
Rantz	2009	Cost, Staffing and Quality Impact of Bedside Electronic Medical Record (EMR) in Nursing Homes	Quasi-experimental	USA	Mixed	Digital records	N	N	Y	Y	Y	N

Rantz	2013	Sensor Technology to Support Aging in Place	Descriptive	USA	Mixed	Surveillance /monitoring	Y	N	N	Y	N	N
Rantz	2015	Enhanced registered nurse care coordination with sensor technology: Impact on length of stay and cost in aging in place housing	Descriptive	USA	Residents	Surveillance /monitoring	N	N	N	Y	N	N
Rantz	2017	Randomized Trial of Intelligent Sensor System for Early Illness Alerts in Senior Housing	RCT	USA	Residents	Surveillance /monitoring	N	N	Y	Y	N	N
Ratliff	2005	Telehealth for Wound Management in Long Term Care	Quasi-experimental	USA	Mixed	Telehealth	N	Y	Y	Y	N	Y
Remington	2015	Long-term and post-acute electronic health records (EHR) initiatives	Opinion	USA	Staff	Digital records	N	N	N	N	N	N
Richardson	2014	A Case Report in Health Information Exchange for Inter-organizational Patient Transfers	Qualitative (mixed methods)	USA	Mixed	Communication technologies	Y	Y	N	N	N	N
Robinson	2006	A systematic literature review of the effectiveness of non-pharmacological interventions to	Systematic review	UK	Residents	Technologies	Y	N	N	Y	N	N

		prevent wandering in dementia and evaluation of the ethical implications and acceptability of their use											
Robinson	2007	Balancing rights and risks: Conflicting perspectives in the management of wandering in dementia	Systematic review	UK	Mixed	Surveillance /monitoring	Y	N	N	N	N	N	N
Robinson	2013	Suitability of Healthcare Robots for a Dementia Unit and Suggested Improvements	Cross-sectional	Other	Mixed	Robots	Y	Y	N	N	N	N	N
Robinson	2013	The psychosocial effects of a companion robot: a randomized controlled trial	RCT	Other	Residents	Robots	N	N	N	Y	N	N	N
Robinson	2015	Group sessions with Paro in a nursing home: Structure, observations and interviews	Qualitative (mixed methods)	Other	Mixed	Robots	Y	N	N	N	Y	N	N
Robinson	2015	Physiological effects of a companion robot on blood pressure of older people in residential care facility: a pilot study	Cohort (prospective)	Other	Residents	Robots	N	N	N	Y	N	N	N

Rochon	2006	Clinical application of a computerized system for physician order entry with clinical decision support to prevent adverse drug events in long-term care	Opinion	USA	Mixed	Technologies	N	Y	N	N	N	N
Rosen	2002	Mental Health Training for Nursing Home Staff Using Computer-Based Interactive Video: A 6-Month Randomized Trial	RCT	USA	Staff	Education	Y	N	N	N	Y	N
Rosen	2003	Educating the Families of Nursing Home Residents: A Pilot Study Using a Computer-based System	Qualitative	USA	Families	Education	Y	N	N	N	Y	N
Rudston	2013	Facing the future: touchscreen technology for residents	Descriptive	UK	Residents	Technologies	Y	Y	N	N	N	N
Russell	2015	Telemedicine: One Way to Reduce Clostridium difficile Infection in Hospitals and Long-Term Care Facilities	Descriptive	USA	Staff	Education	N	N	N	N	N	N
Šabanović	2013	PARO Robot Affects Diverse Interaction	Cohort (prospective)	USA	Residents	Robots	Y	N	N	Y	N	N

		Modalities in Group Sensory Therapy for Older Adults with Dementia										
Sabelli	2011	A Conversational Robot in an Elderly Care Center: an Ethnographic Study	Qualitative (mixed methods)	Other	Residents	Robots	Y	Y	N	N	N	N
Sanctuary Care	2016	Harry's story: using technology to keep in touch	Case study	UK	Residents	Communication technologies	Y	N	N	N	N	N
Savenstedt	2003	Video-phone communication with cognitively impaired elderly patients	Qualitative	Europe, non UK	Mixed	Telehealth	Y	N	N	Y	N	N
Savenstedt	2004	Being Present in a Distant Room: Aspects of Teleconsultations With Older People in a Nursing Home	Qualitative	Europe, non UK	Staff	Telehealth	N	N	N	N	Y	N
Schneider	2016	Telemedicine care for nursing home residents with Parkinsonism	Descriptive	Other	Residents	Telehealth	N	N	N	Y	N	N
Shibata	2004	Robotic Therapy at an Elderly Institution using a Therapeutic Robot	Descriptive	USA	Residents	Robots	N	N	N	Y	N	N
Sicurella	2016	Robotic pet therapy in long-term care	Opinion	Other	Residents	Robots	Y	N	N	Y	N	N
Silverman	2006	A Pilot Study of the Use of High Technology Sensors and	Cohort (prospective)	USA	Residents	Surveillance /monitoring	N	N	N	Y	N	N



		Nursing Education to Reduce Falls in a Large Nursing Home											
Smith	2014	Generating new telehealth services using a whole of community approach: experience in regional Queensland	Cohort (prospective)	Other	Mixed	Telehealth	Y	N	N	N	N	N	Y
South East Health Technologies Alliance	2016	Technology and innovation in care homes	Evidence review	UK	Mixed	Technologies	Y	Y	Y	Y	Y	Y	Y
Specht	2001	Evaluating the Cost of One Telehealth Application Connecting an Acute and Long-Term Care Setting	Descriptive	USA	Mixed	Telehealth	N	N	Y	N	N	N	N
Spiro	2005	Electronic - Prescribing: Will Long-Term Care Be Ready	Opinion	Other	Staff	Digital records	Y	Y	N	N	N	N	N
Stephens	2015	Technologies to Reduce Nursing Home Resident ER Transfers	Qualitative	USA	Mixed	Communication technologies	Y	Y	N	N	N	N	N
Sugihara	2015	Enhancing care homes with assistive video technology for distributed caregiving	Case study	Other	Mixed	Telehealth	Y	Y	N	Y	Y	Y	N

Sung	2015	Robot-assisted therapy for improving social interactions and activity participation among institutionalized older adults: A pilot study	Quasi-experimental	Other	Residents	Robots	N	N	N	Y	N	N
Tabar	2015	EHRs: Progress or Pileup	Opinion	USA	Mixed	Digital records	N	Y	N	N	N	N
Tak	2007	Computer and Internet Access for Long Term Care Residents: Perceived Benefits and Barriers	Cross-sectional	USA	Residents	Technologies	Y	Y	N	N	N	N
Tak	2008	Cognitive Exercise with Computer Games and Activities among Nursing Home Residents with Dementia	Case-control	USA	Residents	Gaming	N	N	N	Y	N	N
Tak	2012	Therapeutic computer activity intervention for nursing home residents with dementia	Quasi-experimental	USA	Residents	Technologies	Y	Y	N	N	N	N
Tak	2013	Feasibility of providing computer activities for nursing home residents with dementia	Cohort (prospective)	USA	Residents	Technologies	Y	N	N	Y	N	N

Tang	2001	Telepsychiatry in Psychogeriatric Service: A Pilot Study	Descriptive	Other	Mixed	Telehealth	Y	N	Y	N	N	N
Thorpe-Jamison	2013	Evaluating the Impact of Computer-Generated Rounding Reports on Physician Workflow in the Nursing Home: A Feasibility Time-Motion Study	Quasi-experimental	USA	Staff	Digital records	Y	Y	N	N	Y	N
Tinder Foundation	2016	Health & digital: reducing inequalities, improving society An evaluation of the Widening Digital Participation programme	Report	UK	Mixed	Technologies	Y	N	N	Y	N	N
Tiwari	2011	Feasibility study of a robotic medication assistant for the elderly	Qualitative (mixed methods)	Other	Residents	Robots	Y	Y	N	N	N	N
Toh	2015	Increased Engagement in Telegeriatrics Reduces Unnecessary Hospital Admissions of Nursing Home Residents	Cohort (prospective)	Other	Staff	Telehealth	N	N	N	N	N	Y

Toh	2015	Virtual Geriatric Care: User Perception of Telegeriatrics in Nursing Homes of Singapore	Qualitative	Other	Staff	Telehealth	Y	Y	N	N	N	N
Torres-Padrosa	2011	A Medicosocial Videoconferencing Tool for the Elderly, Impaired and Long-Term Care Patients	Descriptive	Europe, non UK	Mixed	Telehealth	Y	N	N	Y	N	N
Trinkle	2003	Geriatric Pyschiatry Telemedicine Consultation Project to Rural Nursing Homes in Virginia	Protocol	USA	Mixed	Telehealth	Y	N	N	Y	Y	N
Tseng	2013	Designing an Intelligent Health Monitoring System and Exploring User Acceptance for the Elderly	Qualitative (mixed methods)	Other	Residents	Surveillance /monitoring	Y	N	N	N	N	N
Van der Ploeg	2016	Internet video chat (Skype) family conversations as a treatment of agitation in nursing home residents with dementia	RCT	Other	Residents	Telehealth	N	N	N	Y	N	N
Vandenberg	2015	Technology as a contributor to nursing home falls: Findings from a	Qualitative (mixed methods)	Other	Staff	Surveillance /monitoring	Y	Y	N	N	Y	N

		cross-national site comparison										
Vogelsmeier	2007	Technology Innovations: Barriers to Safe Medication Administration in the Nursing Home- Exploring Staff Perceptions About the Medication Use	Qualitative (mixed methods)	USA	Staff	Technologies	Y	Y	N	N	N	N
Vowden	2013	A pilot study on the potential of remote support to enhance wound care for nursing home patients	RCT	UK	Residents	Telehealth	Y	N	Y	Y	Y	N
Wagner	2001	Telemedicine Offers Promise to Long Term Care	Opinion	USA	Staff	Telehealth	Y	Y	N	N	N	N
Wagner	2004	New technologies enhance patient safety	Opinion	USA	Staff	Digital records	Y	Y	N	N	N	N
Wakefield	2004	Interactive Video Specialty Consultations in Long-Term Care	Cross-sectional	USA	Mixed	Telehealth	Y	N	N	Y	Y	N
Walker	2006	The Usefulness of Computer-Based Instruction in Providing Educational Opportunities for Nursing Staff	Quasi-experimental	USA	Staff	Education	Y	N	N	N	Y	N
Walker	2008	Computer-Based Instruction and the	Quasi-experimental	USA	Staff	Education	Y	N	N	N	Y	N

		Web for Delivering Injury Prevention Training											
Wang	2011	The experiences of using an anti-collision power wheelchair for three long-term care home residents with mild cognitive impairment	Qualitative (mixed methods)	Other	Mixed	Technologies	Y	N	N	N	N	N	N
Webster	2014	Technology for Supporting Care Staff in Residential Homes	Descriptive	UK	Staff	Technologies	Y	Y	N	Y	N	N	N
Weiner	2002	Conducting a Study of Internet-based Video Conferencing for Assessing Acute Medical Problems in a Nursing Facility	Descriptive	USA	Staff	Telehealth	N	Y	N	N	N	N	N
Weiner	2004	Camera on Call	Opinion	USA	Mixed	Telehealth	Y	N	N	N	N	N	N
Welsh	2010	Innovations in North Carolina skilled nursing care: new uses of technology and approaches to the routines of care	Opinion	USA	Mixed	Technologies	Y	N	N	N	N	N	N
Wigg	2010	Liberating the wanderers: using technology to unlock doors for	Descriptive	USA	Residents	Surveillance /monitoring	Y	N	N	N	N	N	N

		those living with dementia										
Yu	2006	Computer-based nursing documentation in nursing homes: a feasibility study	Cross-sectional	Other	Staff	Digital records	Y	Y	N	N	N	N
Yu	2007	The acceptance of a clinical IT innovation by the care givers in residential aged care 11-weeks after the software implementation in Australia	Case study	Other	Staff	Digital records	Y	Y	N	N	N	N
Yu	2013	Unintended adverse consequences of introducing electronic health records in residential aged care homes	Qualitative	Other	Staff	Digital records	Y	Y	N	N	N	N
Zelickson	2003	Teledermatology in the Nursing Home	Opinion	USA	Mixed	Telehealth	N	Y	Y	N	Y	N
Zhang	2012	The benefits of introducing electronic health records in residential aged care facilities: A multiple case study	Qualitative	Other	Staff	Digital records	Y	Y	N	N	Y	N
Zhang	2016	Health Information Technologies: Which Nursing	Descriptive	USA	Staff	Technologies	N	N	N	N	Y	Y

		Homes Adopted Them?											
Zhuang	2013	The Impact of Human-Computer Interaction-Based Comprehensive Training on the Cognitive Functions of Cognitive Impairment Elderly Individuals in a Nursing Home	RCT	Other	Residents	Technologies	N	N	N	Y	N	N	
Zwijnsen	2010	Assistive Technology as an alternative to physical restraints in psychogeriatric nursing homes	Qualitative (mixed methods)	Europe, non UK	Mixed	Technologies	Y	Y	N	N	Y	N	
Zwijnsen	2012	Surveillance technology: An alternative to physical restraints? A qualitative study among professionals working in nursing homes for people with dementia	Qualitative (mixed methods)	Europe, non UK	Staff	Surveillance /monitoring	Y	Y	N	N	N	N	



## Communications and Engagement mapping table

*Table 2 Comms and Eng Mapping*

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Agar	2015	USA	RCT protocol	Nurses and care assistants	Community health professionals	Interpersonal communication: staff-patients; formal meetings	None	Symptom management, comfort and satisfaction (End of Life in Dementia Scales)	Staff attitudes and knowledge		
Alexander	2014	USA	Mixed	Staff	Other health organisations	Interpersonal communication: in CH; technology	Number of interactions; movements, gestures; communication networks	None	Teamwork and collaboration	None	None
Alexander	2015	USA	Mixed	Staff, residents	Clinicians, HCPs, families	Quality improvement tool: Health Information Exchange	None	Improvement of QOL	None	None	None
Amador	2016	UK	Qualitative	Staff	GPs, District nurses	Quality improvement tool: Appreciative Inquiry	Integrated working CH staff, visiting health professionals	Implementing tools to decide treatment plans and discuss end-of-life wishes of residents	None	None	None

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
								with family members			
AMDA	2011	USA	Descriptive	Advanced Practice Nurses	Primary care physician	Interpersonal communication: in CH	Communication among all members of the team	None	None	None	None
Anderson	2010	USA	Discussion paper	Residents	Social workers	Community engagement: barriers to civic engagement for CH residents	None	Resident well-being	None	None	None
Anon	2011	USA	Descriptive	Staff	Hospital staff	Interpersonal communication: CH-hospital; formal meetings	None	None	None	None	None
Anon	2013	USA	Descriptive	Staff	Hospital staff	Extra staff: nurse transitionist (case manager)	None	None	None	None	None
Anon	2014	USA	Descriptive	Staff	Hospital and assisted living staff	Patient transfer	None	None	None	None	None
Anon	2015	USA	Descriptive	Staff	Hospital staff	Risk assessment tool (unnamed)	None	Comorbidities and psychiatric issues		None	Hospitalisations and ED visits
Anrys	2016	Europe	Quasi-experimental protocol	Management board, coordinating physician and pharmacist	Health care professionals	Education	None	None	None	None	None

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Arendts	2010	Australia	Qualitative	Carers	ED staff	Patient transfer	Adequacy of communication between ED and CH staff	None	None	None	None
Arendts	2014	Australia	Quasi-experimental protocol	Registered nurses, residents	GP, nurse practitioner	Staffing: nurse practitioners		Functional Status			
Arling	2014	USA	Mixed	Staff	Health care professionals	Quality improvement tool: Empira	Perception of collaboration effectiveness ; sharing of ideas with peers and educators	Fall-reduction percentage	None	None	None
Badger	2012	UK	Mixed	Managers, staff, residents, family	Health care professionals	Quality improvement tool: Gold Standards Framework	Collaboration between CH staff and GPs or specialist palliative care services		Internal relationships	None	None
Banda	2015	USA	Mixed	Nursing staff	Hospital physicians	Patient transfer: records	Improvement in the proportion of nurses completing discharge instructions	Number of discharged patients with complete and timely discharge information	None	Costs	Improvement in re admission rates

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Baur	2010	Europe	Mixed	Managers	Client Council	Responsive evaluation project; increasing engagement with marginalised stakeholders	None	None	Enhanced the mutual learning processes for the client councils and the managers	None	None
Beck	2014	USA	Descriptive	Managers	Multiple stakeholders	Development of a State coalition including multiple stakeholders; plans for action to implement and evaluation person-centred care	Collaboration in coalition to prevent duplication of effort	Quality indicators in pressure ulcers, restraints, pain	Joint education initiatives	Culture change	Success in obtaining funding; influencing policy
Bensadon	2014	USA	RCT	Staff	Health care professionals	Quality improvement tool: INTERACT	Percentage improvement in comms and documentation	Nursing assessment	Quality improvement procedure	None	Reduced hospitalisation rates
Bokhour	2006	USA	Qualitative	Staff	Health care professionals	Interpersonal communication: multi-disciplinary meetings	Comms practices in meetings: giving or writing reports, collaborative discussions	None	None	None	None

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Boockvar	2007	USA	Survey	Administrators, CH staff	Hospital staff	Patient transfer: factors associated with effective process	Ratings CH to hospital inter-organisational relationships, comm.	None	None	None	None
Brown	2016	USA	Case Study	Nursing staff	ED staff	Quality improvement tool: NICHE; patient transfer	Ways to improve communication at transition	None	None	None	None
Cadogan	1999	USA	Survey	Nursing staff	Primary care physicians	Interpersonal communication: in CH	Differences in nurse/doctor perception of comms. barriers	None	Perception of competence, necessity of calls to doctor, show of respect	None	None
Cassidy	2005	USA	Qualitative	Staff	Consulting clinical researchers	Consultation: staff needs assessment	Changes in communication procedures to facilitate better sharing of patient information	None	Training needs	None	None
Catic	2014	USA	Survey	Physicians, nurse practitioners, physicians assistants,	Health care professionals	Extra staff: remote inter-professional speciality team; video-based	None	Recommendations of speciality team (with respect to medications,		None	Hospitalisation since presentation

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
				RNs, NAs, and SW.		consultation ECHO-AGE		behaviour plan, lab tests, referrals)			
Colon-Emeric	2013	USA	RCT	Staff	Health care professionals	Quality improvement tool: CONNECT	measure of staff communication	Change in facility fall rates	None	None	None
Conway	2015	Australia	Mixed	Staff	ED nurses and physicians	Extra staff: nurse-led telephone service	None	None	None	None	ED presentations, ED admissions, total inpatient bed days
Cortes	2004	USA	Descriptive	Senior nursing administrator	Hospital senior nursing administrator	Patient transfer: records	None	None	None	None	None
Cowley	2012	UK	Discussion paper	Staff	Health care professionals	Quality improvement tool: Care Homes Connect	None	None	None	None	None
Crotty	2004	Australia	RCT	Staff	GPs, geriatrician, pharmacist	Interpersonal communication: multidisciplinary meetings	None	Medication appropriateness index, Nursing home behaviour problem scale	None	None	None

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Crotty	2004	USA	RCT	Staff	Family physician and community pharmacist	Patient transfer: records	None	None	None	None	None
Cwinn	2009	Canada	Retrospective review	Staff	ED staff	Patient transfer: records	Prevalence of information gaps, use of standardised transfer form	None	None	None	None
Dalawari	2011	USA	Retrospective review	Staff	ED staff	Patient transfer: records	None	None	None	None	Comparison of available essential patient information upon transfer from nursing home to ED
Davies	2011	UK	Systematic review	Staff	Health care professionals	Interpersonal communication: CH-hospital	None	Health and well being of older people	Increased staff knowledge	None	Changes in quality of care
Davis	2005	USA	Mixed	Nursing staff	ED staff	Patient transfer: records	None	None	Staff perceptions of transfer information	Quantitative analysis of rate of form use	
Dearing	2017	Canada	Survey	Director of Care or Nursing	Health care professionals	Interpersonal communication: between care homes	None	None	None	None	None
Ellis	2006	USA	Survey	Staff	Acute care hospital staff	Patient transfer		None	None	None	None

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Field	2011	USA	RCT	Nursing staff	Primary care physicians	Quality improvement tool: Warfarin management using SBAR	None	Percentage of time residents had INR within therapeutic range; adverse warfarin-related events	None	None	None
Fisch	2014	USA	Qualitative	Staff	Infection control	24-hour report	Ways the 24-hour report was used by CH staff for infection control	Identification of new infections by change in status	None	None	Monitoring response to antibiotics in 24-h report
Furman	2006	USA	Case study	Staff	Primary care physicians and interdisciplinary team	Interpersonal communication: in CH	Barriers to communication between interdisciplinary team	None	None	None	None
Ghorbel	2013	Europe	Qualitative	Healthcare professionals, residents	Health care professionals	Acceptability and evaluation of multimodal notification framework to alert residents, carers, staff	Acceptability, success of different elements of alerting system	None	None	None	None
Gillespie	2010	USA	Survey	Physicians, nurse practitioners,	ED physicians, nurse practitioners,	Communication during patient transfer	Beliefs about quality of	None	None	None	None



Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
				physician's assistants and nurses	physician's assistants and nurses		communication during transition; importance of verbal communication				
Gillespie	2010	USA	Descriptive	Nurses and NH admissions specialists	Hospital physicians and social workers	Interpersonal communication: interdisciplinary quality council	Development of universal transfer communication form and educational materials for patients	None	Creation of a quality improvement team	None	None
Gilmore-Bykovskyi	2013	USA	Qualitative	Nursing staff	Hospital staff	Communication during patient transfer	Quality of discharge communication; engaged care-givers; access to people who know patient history	None	None	None	None
Goodman	2005	UK	Survey	Managers	District nurses	Collaboration between residents, CH staff and district nurses	Difficulties with sustaining working relationships	None	Expectations of district nurse contribution; difficulties of sustaining working relationships	Contact of district nurses with CH residents	

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Goodman	2009	UK	Mixed	Care home staff	District nurses	Quality improvement tool: Essence of Care	Improved communication processes				
Goodman	2013	UK	Mixed	Care home managers, care home staff	District nurses	Quality improvement tool: Essence of Care	Number of and attendees at meetings; perceptions of and changes in how staff communicated with each other	Changes in bowel-related care, habits and bowel-related quality of life	Staff satisfaction, participation in learning	None	None
Griffiths	2014	Multiple	Systematic review	Staff	Emergency department staff	Patient transfer: records	Effectiveness of standardised patient transfer forms	None	None	None	None
Hasson	2008	UK	Qualitative	Link nurses	Health care professionals	Staffing: palliative care link nurses	Barriers and facilitators to the link nurse role	None	None	None	None
Hearn	2015	Australia	Systematic review	Staff	Dentists	Interpersonal communication: in CH	None	None	None	None	None
Heckman	2016	Canada	Mixed	Physicians, nurses, personal support	Primary health physicians, social workers and nurse clinicians	Interpersonal communication: consultative workshop	Recommendations for inter-professional	Regular monitoring of resident weight,	None	None	None

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
				workers, and administrators			communication within and external to CH; communication with families	appropriate prescribing for heart failure			
Hewison	2009	UK	Case Study	Staff	Health care professionals	Quality improvement tool: Gold Standards Framework	Measure of team working	None	Staffing levels	Management support	None
Hustey	2010	USA	Pre post	Staff	ED staff	Patient transfer: records; technology	Number of transitions using internet communication network	None	Staff satisfaction	None	None
Hustey	2010	USA	Descriptive	Staff	ED staff	Patient transfer: records	Problems with transition forms	None	None	None	None
Hustey	2012	USA	Qualitative	Staff	ED staff	Patient transfer: records; technology	None	None	staff satisfaction	Cost	Barriers to implementation
Huynh	2013	USA	Descriptive	Staff	Public Health Department, acute care hospital staff, community care staff	Interpersonal communication: Long-Term Care Health and Safety Network	Usefulness of network conferences	None	None	None	None
Jarboe	2015	USA	Pre post	Nursing staff	Health care professionals	Quality improvement	None	Number of transfers,	None	None	Resident transfers to

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
						tool: INTERACT		clinical condition categories, hospitalisations			acute care facilities, hospital admissions
Jones	2010	UK	Action research	Health care assistants, senior healthcare assistants, team leaders, managers, kitchen staff	Diabetes working groups set up by diabetes specialist nurses	Interpersonal communication: between CH and external health care professionals	Communication between CH staff and GPs and other health care professionals	Changes in routine HbA1C readings of residents with diabetes; routine structured diabetes care (e.g. annual reviews).	Increase in knowledge about diabetes, increase in confidence about diabetes care	Reduced workload for kitchens, not producing diabetic alternatives	None
King	2013	USA	Qualitative	Nursing staff	Hospital staff	Communication during patient transfer	Inadequacies of hospital discharge information, consequences of inadequacies	None	None	None	None
Kirsebom	2013	Sweden	Descriptive	Nursing staff, nursing home director	Hospital and community registered nurses	Patient transfer	Communication and co-ordination between CH and hospital nurses	Importance of care plans	None	Improving quality and collaboration	

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Krol	2017	USA	Descriptive	Nurse Practitioner	Hospital staff	Quality improvement tool: HOPE; Patient transfer	None	None	None	None	Hospital readmission rates
LaMantia	2010	USA	Systematic review	Staff	Hospital staff	Patient transfer	Interventions to Improve Communication of Appropriate Medication Regimens	None	None	None	None
Lea	2016	Australia	Action research	CH 1 - registered nurses, enrolled nurses, domestic and maintenance services staff, care assistants, physiotherapy assistants and lifestyle and leisure assistants	CH 2 - registered nurses, enrolled nurses, domestic and maintenance services staff, care assistants, physiotherapy assistants and lifestyle and leisure assistants	Interpersonal communication: falls action research groups (Star project)	Barriers and facilitators to, operationalisation and benefits of inter-facility network (between 2 CHs)	None	None	None	None
Longo	2002	USA	Qualitative	Nursing staff	Primary care physicians	Interpersonal communication: barriers and facilitators to illness	Clinician notification	Symptom recognition; illness identification	Nursing home workload and staffing, staff training	None	None

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
						identification and treatment in CH		n and treatment			
Martz	2011	USA	Survey	NH/SNF providers	Hospice providers	Perceptions of nursing care between CH/hospice staff	Perceptions of collaboration and benefits	None	Collaboration	None	None
McGilton	2009	Multiple	Systematic review	Staff	Health care professionals	Interpersonal communication: in CH	None	None	Increase in staff knowledge about communication	None	None
Ouslander	2009	USA	Process evaluation	Staff	Hospital staff	Quality improvement tool: INTERACT	Use and usefulness of communication tool	None	None	Costs	Reduction in hospitalisation rates
Ouslander	2011	USA	Process evaluation	Staff	Hospital staff	Quality improvement tool: INTERACT	None	None	None	Costs	Reduction in hospitalisation rates
Ouslander	2014	USA	Descriptive	Staff	Hospital staff	Quality improvement tool: INTERACT	Keys to successful implementation of INTERACT	None	None	None	None
Ouslander	2016	USA	RCT	Staff	Hospital staff	Quality improvement tool: INTERACT	None	None	None	None	Reasons for hospital admissions from SNF; rated as

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
											preventable or not
Reed	2003	UK	Action research	Nursing staff	Hospital nursing staff	Patient transfer	Improvement on previous information giving	None	None	None	Hospitalisations, factors associated with hospitalisations
Renz	2013	USA	Interrupted time series	Nursing staff	Hospital staff	Quality improvement tool: INTERACT	Nurse satisfaction with, and medical staff perception of, nurse-medical staff communication.	None	Adherence to SBAR implementation over the three months	None	None
Renz	2015	USA	Interrupted time series	Nursing staff	Hospital staff	Quality improvement tool: INTERACT; training in use of SBAR	Number and timeliness of SBARs completed	None	None	Costs-benefit analysis	Number of hospital transfers, avoidable transfers
Renz	2016	Multiple	Systematic review	Nursing staff	Physicians	Interpersonal communication: in CH					
Richardson	2014	USA	Case study	Staff	ED staff	Quality improvement tool: Health Information Exchange; patient transfer	Improvement of inter-organizational communication	None	None	None	None

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Romoren	2017	Europe	Qualitative	Doctors	Hospital doctors	Interpersonal communication: CH-hospital	Dialogue and collaboration between the nursing home and hospital doctors	None	None	None	None
Sankaran	2010	New Zealand	Mixed	Staff	Health care professionals	Interpersonal communication: telephone hotline for nurse and GP; extra staff; education	Use and opinion of hotline	Medication review: medication prescribed or stopped	None	None	Hospital admission rates
Sutton	2016	UK	Qualitative	Managers and staff	Hospital based staff	Quality improvement tool: Safer Clinical Systems; community-based geriatric team	Communication between care homes and hospital at discharge	None	None	None	None
Tabar	2013	USA	Discussion paper	None	None	Partnership: CH-hospital	None	None	None	None	None
Tena-Nelson	2012	USA	Pre post	Staff	Hospital staff	Quality improvement tool: INTERACT	Number of staff using tool	None	None	None	Hospital admission rates
Terrell	2005	USA	Pre post	Staff	ED staff	Patient transfer: standardised form	Percentage of ECF transfers	None	None	None	None



Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
							with successful documentation on the transferred patient; number of essential data elements documented, number of pages of information transported with patients				
Tjia	2009	USA	Mixed	Nursing staff	Health care professionals	Interpersonal communication: CH nurse - physician	Barriers to communication between nurses/physicians	None	None	None	None
Toh	2015	Singapore	Quasi-experimental	Staff	Hospital staff	Extra staff: telegeriatrics	Level of engagement of CH with telegeriatrics	None	None	None	Hospital admission rates
Tsakitzidis	2016	Multiple	Systematic review	Staff	Inter-professional team	Interpersonal communication: in CH					
van Dongen	2016	Europe	Systematic review	Inter-professional team	Inter-professional team	Interpersonal communication: in CH	Communication/collaboration				

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
Vogelsmeier	2011	USA	Comparative case study (secondary analysis of data)	Nursing leadership team (Director of Nursing, assistant DON and unit managers)	Nursing leadership team (Director of Nursing, assistant DON and unit managers)	Interpersonal communication; leadership style	Level of cooperation and open communication between CH staff	None	None	None	None
Weiner	2001	USA	RCT protocol	Staff, residents	Primary care physician	Extra staff; video conferencing technology	None	None	None	None	None
White	2015	USA	Process evaluation	Nurses and physicians	Hospital nurses and physicians	Interpersonal communication: geriatric team consultation; Patient transfer: records	Enhance communication among nurses and physicians	Improve discharge documentation and medication reconciliation	None	None	None
Whitson	2008	USA	Qualitative	Nursing staff	Primary care physicians	Quality improvement tool: project CHAT	Nurse satisfaction with after-hours telephone communication with off-site physicians	Percentage of calls resulting in immediate evaluation by physician	None	None	None
Wroth	2011	USA	Descriptive	Staff	Primary care physician and	Quality improvement tool: REACH;	Improved communication	Decreased likelihood of	None	None	None

Author	Year	Country	Study design	Target population in care home	Target population (communication partner)	Nature of communication investigated	Comms outcome	Clinical care outcomes	Staff outcomes	Care home outcomes	Health system outcomes
					registered nurse care manager	extra staff: nurse care managers	on regarding test results	medication errors			
Yang	2009	Canada	Descriptive	Staff	Hospital staff	Quality improvement tool: Change Management Process	Collaboration between CH and hospital to allow peritoneal dialysis in CH	Infection rates for peritonitis; resource costs	None	None	Waiting times, occupancy rates
Young	2010	USA	Survey	Directors of nursing	Health care professionals	Interpersonal communication: factors associated with preventable hospitalisations	Training provided to nurses on effective communication with physicians		None	None	None
Zafirau	2012	USA	Pre post	Staff	Emergency medical services (EMS) and ED/hospital staff	Patient transfer: standardised form	Improved communication about advanced directives; concordance between advanced directives from CH and hospital	None	None	Documentation of advanced directives in the LTCF	None

**Table 3 Evaluation approaches mapping**

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of approach, model or measurement tool</b>	<b>Area of practice</b>	<b>Outcome measures</b>	<b>Target population</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Axelsson	2000	Pain among persons living at a nursing home	A set of pain assessment tools	Dementia	Pain	Residents; patients	Prevalence;	Primary
Bartoszek	2016	Outcome measures in older persons with acquired joint contractures: a systematic review and content analysis using the ICF (International Classification of Functioning, Disability and Health) as a reference	ICF (International Classification of Functioning, Disability and Health)	Acquired joint contractures	Outcome measures	Residents; patients; other	Outcome assessment	Systematic review and content analysis
Bettger	2012	Measuring nursing care time and tasks in long-term services and supports: one size does not fit all	Online Survey, Certification, and Reporting system (OSCAR)	Care provision	Hours of nursing care	Residents; patients; other	Triangulation	Mixed methods, qualitative, secondary cross-sectional
Bowers	2008	A standardized approach to identifying and measuring consumer						

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
		determined quality outcomes in community based long term care						
Bravo	2005	Using goal attainment scaling to improve the quality of long-term care: a group-randomized trial	Quality of Care (QUALCARE) Scale	Quality of care	Six sub dimensions of care: environmental, physical, medical management, psychosocial, human rights, and financial	Residents; patients	Outcome assessment	RCT
Brownie	2013	Effects of person-centered care on residents and staff in aged-care facilities: a systematic review	Eden Alternative, Green House model, Wellspring model	Person-centered care	Various (e.g. residents' levels of boredom and helplessness)	Residents; staff	Outcome assessment	Systematic review
Castle	2005	State variability in indicators of quality of care in nursing facilities	Online Survey, Certification, and Reporting system (OSCAR)	Quality of care	State-level physical restraint use, urethral catheterization, contractures, pressure ulcers, and psychoactive medication	Residents	Outcome assessment	Secondary, cross-sectional

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
Chenoweth	2007	Determining the efficacy of Dementia Care Mapping as an outcome measure and a process for change: A pilot study	Dementia Care Mapping (DCM)	Dementia	Staff interactions with residents; residents' quality of life and well-being in relation to physical and cognitive functioning; residents' levels of agitation and depression	Residents; patients	Efficacy / sensitivity assessment	Pilot RCT
Chin	2011	An approach to improving the quality of life of residents living in aged care facilities: from the perspectives of the residents	Observer-as-participant field work and semi-structured interviews	Nursing home physical and social environment	Wellbeing	Residents	Ethnographic	Qualitative
Chiu	2005	A survey to identify effective nutritional assessment indicators in long-term care facilities	Indicators of nutritional assessment	Nutrition; Quality of care	Nutritional status	Residents	Tool development / efficacy	Primary, cross-sectional, interviews, biochemical
Coradi	2016	Analysis of multi-dimensional contemporaneous	Electronic Health Records; Confusion Assessment Method (CAM)	Delirium	Situations in which the 'unable-to-	Patients	Outcome assessment	Secondary analysis

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of approach, model or measurement tool</b>	<b>Area of practice</b>	<b>Outcome measures</b>	<b>Target population</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		EHR data to refine delirium assessments			assess' ratings were used			
Corrazzini	2003	Improving nursing home care: Using case study methods for interdisciplinary research to improve quality		Quality of care				Primary, case-study
Croghan	2006	Testing of the Individual Nutrition Rx assessment process among nursing home residents	Individual Nutrition Rx (INRx) assessment process	Nutrition	Nutritional status	Residents	Outcome assessment	Non-randomized controlled study
Croghan	2006	Improving nutrition care for nursing home residents using the INRx process	Individual Nutrition Rx (INRx) assessment process	Nutrition	Nutritional status	Residents	Outcome assessment	Non-randomized controlled study
Cutler	2006	Assessing and comparing physical environments for nursing home residents: using new tools for greater research specificity	Observational checklists for the room and bath environment, unit environment, and facility environment	Nursing home physical environment	Relevant constructs such as function-enhancing features, life-enriching features, resident environmental	Residents	Reliability assessment	Primary, cross-sectional survey

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
					controls, and personalization			
Davis	2016	Information management for aged care provision in Australia: development of an aged care minimum dataset and strategies to improve quality and continuity of care	Aged care minimum dataset	Quality of care	Quality and continuity of care	Residents	Tool development	Modified Delphi methods
Drouin et al.	2015	Measured outcomes of chronic care programs for older adults: a systematic review	Wagner's Chronic Care Model (CCM)	Quality of care; Chronic care	System-level and individual patient outcomes	Residents; patients	Review	Systematic review
Edvardsson	2008	The aged care pain chart: an innovative approach to assessing, managing and documenting pain in older people	Comprehensive pain chart for the assessment, management and documentation of pain in older people in subacute and residential aged care	Pain; Cognitive impairments	Pain	Residents; patients	Validity / feasibility assessment	Non-randomized trial; descriptive
Fisher	2006	Obtaining self-report data from cognitively	Modification of the Geriatric Pain Measure (GPM-M2)	Pain	Pain	Residents		Repeated cross-sectional



Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
		impaired elders: methodological issues and clinical implications for nursing home pain assessment						
Flores	2009	Monitoring quality of care in residential care for the elderly: the information challenge	Data compiled on residential care facilities for the elderly (RCFEs) by the state of California	Quality of care	Quality of care	Residents	Feasibility assesment	Secondary, panel
Forsyth	2000	Using the minimum data set to measure change in functional status of nursing home residents.	Minimum Data Set; Nursing home case mix and quality demonstration; disablement process model	Functional status	Functional trajectories	Residents	Outcome assessment	Secondary, cohort
French	2007	A multivariate fall risk assessment model for VHA nursing homes using the minimum data set	Multivariate fall risk assessment model	Falls	Fall risk	Residents	Tool development	Secondary, panel
Froggatt	2011	Action research in palliative care: defining an evaluation methodology	Reflective de-briefing sessions (RDBSs)	Palliative care	Participation in a peer education programme for advance care	Patients; residents	Participatory action research; process evaluation	primary, Before-after study

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
					planning amongst older adults			
Graney	2000	Stability of performance of activities of daily living using the MDS	Minimum Data Set (MDS)	Resident assessment; Functional status	Activities of daily living (ADL) performance	Residents	Repeated survey	Primary, repeated survey
Halfens	2013	International prevalence measurement of care problems: results	Comprehensive, standardized questionnaire that comprises three levels: institutional, ward/department and patient level	Quality of care	Pressure ulcers, malnutrition and falls	Residents	Prevalence;	Primary, repeated cross-sectional
Harington	2003	Nursing indicators of quality in nursing homes. A web-based approach	Nursing indicators of quality used for the California nursing home website	Quality of care	Staffing levels (e.g., hours, types, turnover rates), financial indicators (e.g., direct care expenditures, wages, benefits), and complaints and deficiencies.	Residents; staff; other		Discussion paper
Jones	2015	Assessing engagement in people With dementia: A new approach to	The Video Coding - Incorporating Observed Emotion (VC-IOE) protocol	Dementia	Six dimensions of engagement: emotional, verbal, visual,	Residents; patients	Descriptive	Descriptive

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of approach, model or measurement tool</b>	<b>Area of practice</b>	<b>Outcome measures</b>	<b>Target population</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		assessment using video analysis			behavioral, collective and signs of agitation			
Kapoor	2008	Using the case mix of pressure ulcer healing to evaluate nursing home performance	Minimum Data Set (MDS)	Pressure ulcers	Rate of pressure ulcer healing by stage of ulcer	Residents; patients	Outcome assessment	Secondary, cross-sectional
Kehinde	2011	Methodological issues in fall prevention research involving older adults in long-term care facilities	Various	Falls	Falls	Residents	Review	Systematic review
Kovach	2008	Using principles of diffusion of innovation to improve nursing home care	Principles of diffusion of innovation	Dementia	Performance of healthcare organizations	Residents; patients	Outcome assessment	Primary, before-after study
Lepore	2012	Multi-method assessment of person-centered care outcomes across long-term care settings	Multi-method assessment of person-centered care outcomes	Person-centered care	Person-centered care outcomes	Residents		
Levenson	2010	The basis for improving and reforming long-term care. Part 4:	Meaningful improvement approaches	Quality of care	N/A	Residents	Discussion	Discussion

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
		identifying meaningful improvement approaches						
Merilahti	2016	Wearable monitoring of physical functioning and disability changes, circadian rhythms and sleep patterns in nursing home residents	Wearable sensor	Physical functioning	Physical functioning status (Activities of Daily Living assessment of Resident Assessment Instrument)	Residents	Outcome assessment	Primary, cross-sectional survey
Mor	2011	Temporal and geographic variation in the validity and internal consistency of the Nursing Home Resident Assessment Minimum Data Set 2.0	Nursing Home Resident Assessment Minimum Data Set 2.0	Diagnostic accuracy	Sensitivity and positive predictive value (PPV) of diagnoses	Residents	Reliability / validity assessment	Secondary, cohort
Mukamel	2007	Nursing homes' response to the nursing home compare report card	Nursing home compare report card	Quality of care	Quality measures	Residents	impact evaluation	Primary, cross-sectional
O'Reilly	2007	How is quality being monitored	N/A	Quality of care	Quality of care	Residents	Narrative	Review

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
		in Australian residential aged care facilities? A narrative review						
Peak	2002	Using customer satisfaction surveys to improve quality of care in nursing homes	Customer satisfaction surveys	Quality of care	Customer satisfaction	Residents	Outcome assessment	Case-study
Port	2003	Measuring the frequency of contact between nursing home residents and their family and friends				Residents		
Reijula	2009	A new method to assess perceived well-being among elderly people - a feasibility study	Con-Dis device	Resident wellbeing	Well-being; mood; quality of life	Residents	feasibility study	Primary, cross-sectional
Rosen	2006	Ability, incentives, and management feedback: organizational change to reduce pressure ulcers in a nursing home	An innovative quality improvement process to reduce pressure ulcers (PUs) in a nursing home with a high rate of PUs	Pressure ulcers	Adherence to protocol; incidence of pressure ulcers	Residents; staff	Outcome assessment; process evaluation	Before-and-after study

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of approach, model or measurement tool</b>	<b>Area of practice</b>	<b>Outcome measures</b>	<b>Target population</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Ryan	2004	Using large data sets in long-term care to measure and improve quality	Minimum Data Set (MDS), Outcome Assessment and Information Set (OASIS), Online Survey and Certification Reporting System (OSCAR), and consumer surveys	Quality of care	Potential uses and limitations of each tool	Residents	Validity assessment	Descriptive
Saivar	2004	Veterans' and family members' perceptions of quality of care in VA-placed community nursing homes	Questionnaire	Quality of care	Patient satisfaction; perceived quality of care	Residents; other	Programme evaluation	Primary, cross-sectional survey
Sales	2015	Understanding feedback report uptake: process evaluation findings from a 13-month feedback intervention in long-term care settings	Observations/surveys	Quality of care	Provider self-reported behaviors or intentions	Staff	Process evaluation; feasibility study	Primary, non-randomized trial
Sangl	2005	Challenges in measuring nursing home and home health quality: lessons from the First	The Minimum Data Set (MDS) and the Outcome and Assessment Information Set (OASIS)	Quality of care	Quality of care	Residents	reliability/ validity assessment	Discussion

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
		National Healthcare Quality Report						
Schnelle	2004	The minimum data set prevalence of restraint quality indicator: does it reflect differences in care?	Minimum Data Set (MDS)	Quality of care	Prevalence of restraint	Residents	Validity assessment	Primary, cross-sectional
Schnelle	2005	Improving the quality of nursing home care and medical-record accuracy with direct observational technologies	Standardized and scientifically defensible observational system to assess nursing home care quality	Quality of care		Residents		Descriptive
Shier	2014	What does the evidence really say about culture change in nursing homes?	Various	Quality of care	Culture change	Residents	Narrative; validity assessment	Review
Simmons	2000	Nutritional intake monitoring for nursing home residents: a comparison of staff documentation,	Staff documentation, direct observation, and photography methods	Resident nutrition	Nutritional intake	Residents	Validity assessment	Primary

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
		direct observation, and photography methods						
Stevenson	2009	Targeting nursing homes under the Quality Improvement Organization program's 9th statement of work	Online Survey, Certification, and Reporting (OSCAR) system; the Minimum Data Set (MDS) quality indicator/quality measure (QI/QM) system.	Quality of care	Quality indicators and deficiencies	Residents	Validity / outcome assessment	Secondary, cross-sectional
Swafford	2009	Improving the process of pain care in nursing homes: a literature synthesis	Process-level pain management improvement projects	Pain	Pain assessment	Residents	Review	Literature review
Thomson	2006	Methodological challenges in measuring quality care at the end of life in the long-term care environment	Various measures of quality end-of-life care	Quality of care; Palliative care	Quality end-of-life care	Residents; patients	Review	Review
Tolson	2013	An international survey of nursing homes	Exploratory survey of nursing home care					Primary, cross-sectional
van Camp	2005	A methodology for evaluating the relationship between staff	Refined methodology for evaluating descriptive data	Staff-resident interactions	Disruptive behaviour	Residents; patients		Descriptive analysis



<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of approach, model or measurement tool</b>	<b>Area of practice</b>	<b>Outcome measures</b>	<b>Target population</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		attention and disruptive behavior displayed by nursing home residents with dementia						
Wagner	2008	Use of a falls incident reporting system to improve care process documentation in nursing homes	Systematically guided menu-driven incident reporting system (MDIRS)	Quality of care	Incidence of falls	Residents	Process evaluation	Non-randomized trial
Wan	2003	Nursing care quality in nursing homes: cross-sectional versus longitudinal analysis	Online Survey, Certification, and Reporting System (OSCAR)	Quality of care	Nursing homes' deficiencies	Residents	Comparative	Secondary, cross-sectional and panel
Werner	2009	Impact of public reporting on quality of postacute care	Minimum Data Set and inpatient Medicare claims	Quality of care	Quality of care	Residents; patients	Outcome assessment	Secondary, longitudinal
Winters	2014	The influence of corporate structure and quality improvement activities on outcome improvement in		Quality of care	Change between 2007 and 2009 in client-reported and professional indicators	Residents	Outcome assessment	Secondary, cross-sectional

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
		residential care homes						
Woitha	2015	Testing feasibility and reliability of a set of quality indicators to evaluate the organization of palliative care across Europe: a pilot study in 25 countries	38 quality indicators	Palliative care; Quality of care	Quality indicators	Residents; patients	Feasibility/ validity/reliability/factor analysis	Primary, cross-sectional
Worden	2006	Assessing care home quality using routine regulatory information		Quality of care				
Wu	2009	Resident, nursing home, and state factors affecting the reliability of Minimum Data Set quality measures	Minimum Data Set (MDS)	Quality of care	Coding differences between nursing home staff and study nurses	Residents	Reliability/validity assessment	Secondary, cross-sectional
Xholi	2004	An interdisciplinary approach to improved outcomes for an aged care unit						

Author	Year	Title	Name of approach, model or measurement tool	Area of practice	Outcome measures	Target population	Approach to evaluation	Methods used
Yaeger	2014	Using resource dependency theory to measure the environment in health care organizational studies: a systematic review of the literature	Resource dependency theory	External environments of healthcare organizations	Measures of the healthcare environment	Other	Review	Systematic review
Yeh	2003	A longitudinal evaluation of nursing home care quality in Taiwan	6 structured questionnaires	Quality of care	Resident satisfaction and clinical outcomes	Residents	Outcome assessment	Primary, cohort
Zhang	2009	Reliability estimates of clinical measures between Minimum Data Set and Online Survey Certification and Reporting data of US nursing homes	Minimum Data Set (MDS) and Online Survey Certification and Reporting (OSCAR)	Care quality; Resident assessment	Clinical indicators	Residents	Reliability assessment	Secondary, longitudinal

**Table 4 Evaluation tools mapping**

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Algase	2007	Initial psychometrics of the Ambiance Scale: A tool to study person-environment interaction in dementia	Ambiance Scale	Dementia	Intuitive and non-deliberate response to the long-term care environment	Residents; patients	Reliability / validity / factor analysis	Primary, cross-sectional
Anderson	2015	Measuring relational care in nursing homes: Psychometric evaluation of the Relational Care Scale	Relational Care Scale	Quality of care	Nursing home residents' perceptions of care aides' relational abilities	Residents	Reliability / validity / factor analysis	Primary, cross-sectional
Arling	2013	Minnesota's provider-initiated approach yields care quality gains at participating nursing homes	Minnesota's Performance-Based Incentive Payment Program	Quality of care	Trends in facility clinical care quality	Residents		Secondary, interrupted time-series
Aspden	2014	Quality-of-life measures for use within care homes: a systematic review of their	Quality-of-life (QoL) measures (e.g. QUALIDEM)	Resident wellbeing	Quality of life measures	Residents	Review; validity assessment	Systematic review

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		measurement properties						
Atherly	2004	Older adults' satisfaction with integrated capitated health and long-term care	Perceived Access and Perceived Interpersonal Quality satisfaction survey	Quality of care	Satisfaction with care	Residents; patients	Reliability / validity / factor analysis	Primary, cross-sectional
Auer	2015	Professional Care Team Burden (PCTB) scale – reliability, validity and factor analysis	Professional Care Team Burden (PCTB) scale	Dementia	Care team burden	Staff	Reliability / validity / factor analysis	Mixed methods (primary, qualitative, cross-sectional)
Bates-Jensen	2004	The Minimum Data Set bedfast quality indicator: differences among nursing homes.	The Minimum Data Set bedfast quality indicator	Quality of care	Proportion of bedfast residents	Residents	Outcome evaluation	Primary, cohort
Bates-Jensen	2003	Standardized quality-assessment system to evaluate pressure ulcer care in the nursing home	PU Resident Assessment Protocol of the Minimum Data Set	Pressure ulcers; Quality of care	Percentage of participants who passed each of the indicators, indicating care consistent with practice guidelines	Residents	Reliability and feasibility assessment	Primary and secondary data, cross-sectional
Bell	2013	Prevalence and measures of nutritional	Definitions of nutritional problems	Resident health; Nutrition	Prevalence of Nutritional Compromise	Residents	Review	Systematic review

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		compromise among nursing home patients: weight loss, low body mass index, malnutrition, and feeding dependency, a systematic review of the literature						
Bergland	2015	The Thriving of Older People Assessment Scale: validity and reliability assessments	Thriving of Older People Assessment Scale	Quality of life	Resident well-being	Residents	Reliability / validity / factor analysis	Primary, cross-sectional
Bing-Jonsson	2015	Nursing older people-competence evaluation tool: development and psychometric evaluation	Nursing older people-competence evaluation tool	Quality of care	Community-based nursing staff competence	Staff	Reliability / validity / factor analysis	Primary, cross-sectional
Boerlarg	2013	Is pain assessment feasible as a performance indicator for Dutch nursing homes? A cross-	Pain intensity, measured using the numeric rating scale, a verbal rating scale, or the Rotterdam Elderly	Pain; Quality of care	Pain intensity; percent residents who received / did not receive analgesics	Residents; patients	Feasibility study	Primary, cross-sectional

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		sectional approach	Pain Observation Scale (REPOS).					
Brandt	2005	The last days of life of nursing home patients with and without dementia assessed with the palliative care outcome scale	Palliative care Outcome Scale (POS)	Palliative care; Dementia; Quality of care	Palliative care Outcome Scale scores	Residents; patients	Outcome evaluation	Primary, prospective observational study
Braunschmidt	2013	The inter-rater reliability of the incontinence-associated dermatitis intervention tool-D (IADIT-D) between two independent registered nurses of nursing home residents in long-term care facilities.	Incontinence-associated dermatitis intervention tool-D (IADIT-D)	Incontinence	Risk assessment and classification of IAD	Residents	Reliability analysis	Primary, cross-sectional
Bravo	2005	Using goal attainment scaling to improve the quality of long-term care: a group-randomized trial	Goal attainment scaling	Quality of care	Overall quality of care; change from baseline	Residents	Outcome evaluation	Primary, RCT

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Brechtl	2006	Monitoring symptoms in patients with advanced illness in long-term care: A pilot study	The Edmonton Symptom Assessment Scale (ESAS)	Quality of care	Symptoms; pain, tiredness, wellbeing	Residents; patients	Feasibility study	Primary, cohort
Brooke	2013	Applying workability in the Australian residential aged care context	Finnish 'workability' framework		Workability	Staff	Feasibility study	Primary, before-and after; quantitative survey and qualitative interviews
Burrows	2000	Development of a Minimum Data Set-based depression rating scale for use in nursing homes	17-item Hamilton Depression Rating Scale and the Cornell Scale for Depression in Dementia.	Depression; Dementia	Mood items	Residents	Reliability / validity / factor analysis	Primary, survey, interviews
Chappel	2007	Staff-based measures of individualized care for persons with dementia in long-term care facilities	Domains of individualized care	Dementia	Individualized care	Residents	Reliability / validity / factor analysis	Review; primary, cross-sectional
Chodosh	2008	Nursing home assessment of cognitive impairment: development and	Brief instrument of mental status	Dementia	Cognitive assessment	Residents	Reliability / validity analysis	Primary, cross-sectional



<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		testing of a brief instrument of mental status						
Chong	2001	The construction and validation of a scale for consumer satisfaction of residential care in Hong Kong		Satisfaction	Satisfaction	Residents	Validity assessment	Primary, cross-sectional, interviews
Chow	2016	Pain assessment tools for older adults with dementia in long-term care facilities: a systematic review	Various	Pain	Pain assessment	Residents	Descriptive	Systematic review
Cohen-Mansfield	2004	Assessment of agitation in elderly patients with dementia: correlations between informant rating and direct observation	The Agitated Behaviors Mapping Instrument (ABMI); the Cohen-Mansfield Agitation Inventory (CMAI)	Dementia	Agitation	Residents; patients	Reliability / validity assessment	Primary, cross-sectional
Corbett	2012	Assessment and treatment of pain in people with dementia	Various	Pain; Dementia	Pain assessment	Residents	Review	Review

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Davison	2012	An evaluation of a national program to implement the Cornell Scale for Depression in Dementia into routine practice in aged care facilities	Cornell Scale for Depression in Dementia	Dementia; Depression	Monitoring of depressive symptoms, medical referral, and changes in treatments prescribed for depression	Residents; patients	Review	Review; primary cross-sectional
de Medeiros	2010	The Neuropsychiatric Inventory-Clinician rating scale (NPI-C): reliability and validity of a revised assessment of neuropsychiatric symptoms in dementia	The Neuropsychiatric Inventory-Clinician rating scale (NPI-C):	Dementia	Neuropsychiatric symptoms	Residents; patients	Reliability / validity assessment	Primary, delphi panel, cross-sectional
Degenholtz	2014	Improving quality of life in nursing homes: The structured resident interview approach	The Quality of Life Structured Resident Interview and Care Plan (QOL.SRI/CP)	Quality of life	Quality of life	Residents	Outcome evaluation	RCT
Dichter	2014	Measuring the quality of life in mild to very	QUALIDEM	Dementia	Quality of life	Residents	Reliability analysis	Primary, cross-sectional

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		severe dementia: testing the inter-rater and intra-rater reliability of the German version of the QUALIDEM						
Doran	2006	Nursing-sensitive outcomes data collection in acute care and long-term-care settings	MDS 2.0	Resident assessment	Functional status; therapeutic self-care; symptom outcomes	Residents	Reliability analysis	Primary, repeated cross-sectional
Dosa	2007	Preliminary derivation of a Nursing Home Confusion Assessment Method based on data from the Minimum Data Set	Nursing Home Confusion Assessment Method (NH-CAM)	Delirium	Delirium; risk of mortality and rehospitalization	Residents; patients	Sensitivity (ability to stratify NH residents' risk of mortality and rehospitalization.)	Primary, cohort study
Edvardsson	2008	The aged care pain chart: an innovative approach to assessing, managing and documenting pain in older people	Comprehensive pain chart for the assessment, management and documentation of pain in older people in subacute and residential aged care.	Pain; Cognitive impairments	Pain	Residents; patients	Validity / feasibility assessment	Non-randomized trial; descriptive

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Forder	2011	Measuring the outcomes of long-term care	ASCOT	Quality of care	Quality of life	Residents	Validity assessment	Primary, cross-sectional
Garcia-Fernandez	2014	Predictive capacity of risk assessment scales and clinical judgment for pressure ulcers	Various	Pressure ulcers	Prediction of pressure ulcer (PU) development.	Residents; patients	Validity/ predictive capacity assessment	Systematic review; meta-analysis
Georgiou	2001	Measuring the quality of urinary continence care in long-term care facilities: an analysis of long-term care indicators	Three measures relate to the management of older people in long-term care: the prevalence of incontinence, the use of indwelling catheters and clinical assessment rates	Quality of care; Urinary incontinence	Urinary continence	Residents	Acceptability	Mixed methods (primary, qualitative, cross-sectional)
Givens	2015	Development and psychometric properties of the Family Distress in Advanced Dementia Scale	Family Distress in Advanced Dementia Scale	Dementia	Family distress	Other (family members)	Reliability / validity / factor analysis	Primary, cross-sectional
Hatoum	2005	The use of the occupational disruptiveness scale of the	The Neuropsychiatric Inventory-Nursing	Dementia	Disruptive behaviour	Residents	Outcome evaluation	Non-randomized trial

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		neuropsychiatric inventory-nursing home version to measure the impact of rivastigmine on the disruptive behavior of nursing home residents with Alzheimer's disease	Home Version (NPI-NH)					
Haugan	2013	Meaning-in-life in nursing home patients: a validation study of the Purpose-in-Life test	Purpose-in-Life test	Quality of life	Meaning-in-life	Residents	Reliability / validity assessment	Primary, cross-sectional
Hockley	2010	The integrated implementation of two end-of-life care tools in nursing care homes in the UK: an in-depth evaluation	The Gold Standards Framework for Care Homes (GSFCH) and an adapted Liverpool Care Pathway for Care Homes (LCP)	Palliative care	Do Not Attempt Resuscitation (DNAR) orders, Advance Care Planning (ACP) documentation and adapted Liverpool Care Plan (LCP)	Residents; patients	Outcome evaluation	Mixes methods; qualitative interviews and before-and-after
Huber	2001	National standards for the long-term care ombudsman program and a	Huber Badrak Borders Scales	Quality of care	Compliance to long-term care ombudsman program	Care homes	Compliance	Primary, repeated cross-sectional

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		tool to assess compliance: the Huber Badrak Borders Scales						
Jayaprakash	2002	Validation of bedside methods in evaluation of diabetic peripheral neuropathy	Diabetic Neuropathy Symptom (DNS) score, Diabetic Neuropathy Examination (DNE) score, ankle reflex, vibration sensation with a 128 Hz tuning fork, 10g Semmes-Weinstein monofilament and vibration perception threshold (VPT).	Diabetes	Diagnosis of diabetic peripheral neuropathy	Patients	Validity assessment	Primary, cross-sectional
Kaasalainen	2013	A comparison between behavioral and verbal report pain assessment tools for use with residents in long term care	Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) and Pain Assessment in the Communicatively Impaired (PACI)	Pain	Pain	Residents	Reliability / validity assessment	Primary, repeated cross-sectional / repeated measures
Lai	2014	The merits and problems of Neuropsychiatric Inventory as an	The Neuropsychiatric Inventory (NPI)	Dementia	Behavioural disturbances	Patients	Descriptive	Review

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		assessment tool in people with dementia and other neurological disorders						
Liu	2010	A longitudinal evaluation of residents' health outcomes in nursing homes and residential care homes in Taiwan	Broad health status (SF-36), resident's/family's satisfaction toward institutions (RSQ), mortality, and relocation rates	Resident health; Quality of care	Residents' functional status, broad health status (SF-36), resident's/family's satisfaction toward institutions (RSQ), mortality, and relocation rates	Residents	Outcome evaluation	Primary, cohort
López-Contreras	2012	Nutrition and prevalence of undernutrition assessed by different diagnostic criteria in nursing homes for elderly people	10 diagnostic criteria of undernutrition	Resident health; Nutrition	Prevalence of undernutrition	Residents	Outcome evaluation	Primary, cross-sectional
Mansback	2014	Differentiating levels of cognitive functioning: a comparison of the Brief Interview for Mental Status	The Brief Interview for Mental Status (BIMS) and the Brief Cognitive Assessment Tool (BCAT)	Dementia	Cognitive functioning / impairment	Residents	Sensitivity/ validity/reliability assessment	Primary, longitudinal

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		(BIMS) and the Brief Cognitive Assessment Tool (BCAT) in a nursing home sample						
Mao	2015	Values of the Minimal Clinically Important Difference for the Neuropsychiatric Inventory Questionnaire in individuals with dementia	Neuropsychiatric Inventory Questionnaire (NPI-Q)	Dementia	Behavioral and psychological symptoms of dementia (BPSDs) and associated caregiver stress	Residents; patients; staff	Sensitivity / reliability assessment	Primary, longitudinal
Martinez et al.	2016	Instruments for assessing person centered care in gerontology		Dementia	Person-centred care	Residents; home; other	Descriptive	Review
Martinez	2016	The person centered approach in gerontology: New validity evidence of the Staff Assessment Person-directed Care Questionnaire	Staff Assessment Person-directed Care Questionnaire	Person centered care	Level to which person centered care is provided in a facility	Residents	Reliability / validity / factor analysis	Primary, cross-sectional



<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Martins	2015	Definition and Validation of the ICF - Usability Scale	ICF-Usability Scale (ICF-US),	Satisfaction	Usability	Other	Reliability / validity assessment	Primary, cross-sectional
McCurren	2002	Assessment for Depression Among Nursing Home Elders: Evaluation of the MDS Mood Assessment	30-item Geriatric Depression Scale (GDS), the GDS Short Form, and the Mood Assessments from the Minimum Data Set versions 1 and 2	Quality of care	Depression symptoms	Residents	Validity / reliability assessment	Primary, cross-sectional
McKee	2002	Methods for assessing quality of life and well-being in frail older people	PES-AD; AERS; SEIQoL-DW	Quality of life	Quality of life; well-being	Residents	Validity / reliability assessment	Primary, cross-sectional
Mertens	2007	Using the Care Dependency Scale for fall risk screening	Care Dependency Scale	Falls	Risk of falls	Residents	Validity assessment	Primary, cross-sectional
Monroe	2012	Assessing advanced cancer pain in older adults with dementia at the end-of-life	Charts; Cognitive Performance Scale score (a measure of Alzheimer's disease severity)	Cancer; Pain; Dementia; Palliative care	Discomfort Behaviour Scale score (a measure of observed pain behaviour)	Residents; patients	Outcome evaluation	Secondary, cross-sectional
Mor	2003	Benchmarking and quality in residential and nursing homes:	Health care quality performance measures	Quality of care	Quality measures	Residents	Review; narrative reliability and validity assessment	Review

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		lessons from the US						
Munn	2007	Measuring the quality of dying in long-term care	(QOD-LTC) and of cognitively intact decedents (QOD-LTC-C)	End of life care	Quality of the dying experience	Residents	Factor analysis	Primary, cross-sectional
Nazir	2011	Monitoring quality of care for nursing home residents with behavioral and psychological symptoms related to dementia	New QI for the incidence of worsening behaviors in nursing home residents with behavioral and psychological symptoms association with dementia.	Quality of care; Dementia	Incidence of worsening behaviors	Residents	Outcome evaluation	Secondary, cross-sectional
Parker	2011	A comparison of palliative care outcome measures used to assess the quality of palliative care provided in long-term care facilities: a systematic review	Various	Palliative care	Palliative outcome measures	Residents; patients	Reliability/validity / feasibility assessment	Systematic review
Phillips	2011	An instrument to assess nurses' and care	Palliative care self-efficacy scale	Palliative care	Self-efficacy	Staff	Reliability / validity assessment	Primary, cross-sectional

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		assistants' self-efficacy to provide a palliative approach to older people in residential aged care: a validation study						
Popham	2012	What matters for people with dementia in care homes?	Sheffield Care Environment Assessment Matrix (SCEAM).	Dementia care	Extent care home environment met the needs of residents with dementia	Residents	Thematic analysis	Qualitative
Powers	2004	Validation of the mobility subscale of the Braden Scale for predicting pressure sore risk	The Braden Scale for Predicting Pressure Sore Risk	Pressure sores	Pressure sore risk	Residents	Validity assessment	Primary, cross-sectional
Rahman	2009	The Nursing Home Minimum Data Set Assessment Instrument: Manifest Functions and Unintended Consequences — Past, Present, and Future	The Minimum Dataset	Clinical assessment	Various relating to functional abilities and quality of life	Residents	Descriptive	Other: discussion

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Rantz	2002	International field test results of the Observable Indicators of Nursing Home Care quality instrument	Nursing Home Care quality instrument	Quality of care	Quality of care measured in relation to items regarding residents, families, staff, and community	Residents	Reliability / validity / factor analysis	Primary, cross-sectional
Rantz	2000	Initial field testing of an instrument to measure: observable indicators of nursing home care quality	Observable Indicators of Nursing Home Care Quality' instrument	Quality of care	Quality of care	Residents	Reliability / validity assessment	Primary, cross-sectional
Rantz	2006	Field testing, refinement, and psychometric evaluation of a new measure of nursing home care quality	Observable Indicators of Nursing Home Care Quality Instrument (Observable Indicators, OIQ).	Quality of care	Quality of care	Residents	Reliability / validity / factor analysis	Primary, cross-sectional
Reed	2007	Assessing the Registered Nursing Care Contribution for older people in care homes: issues of reliability and validity	The Registered Nursing Care Contribution (RNCC) tool	Level of nursing care	Difference between the outcomes of using the RNCC tool and the MDS	Residents	Reliability / validity assessment	Primary, cross-sectional

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Rhoads	2006	Better measures, better outcomes	12 dementia-specific QoL-measures	Dementia; Quality of life	Quality of life	Residents; patients	Validity assessment	Review
Roick	2007	Is quality of life in dementia patients validly estimable? A current review about measuring instruments and methodological problems						
Saliba	2012	Making the investment count: revision of the Minimum Data Set for nursing homes, MDS 3.0	Minimum Data Set for nursing homes, MDS 3.0	Resident health	Clinical indicators	Residents	Reliability / validity/ relevance	Primary, cross-sectional
Saliba	2012	MDS 3.0: brief interview for mental status	Brief Interview for Mental Status	Dementia	Cognitive function	Residents	Feasibility study; Validity assessment	Primary, cross-sectional
Saliba	2012	Testing the PHQ-9 interview and observational versions (PHQ-9 OV) for MDS 3.0	Patient Health Questionnaire Observational Version (PHQ-9 OV)	Mood disorders	Measures of mood disorders	Residents	Feasibility study; Validity assessment	Primary, cross-sectional
Saliba	2002	Indicators of the quality of	Quality indicators (QIs) that can be used to measure	Quality of care	Quality indicators	Residents	Feasibility study; Validity assessment	Review; other: interviews;

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		nursing home residential care	nursing home (NH) residential care processes					modified-delphi panel process
Schnelle	2004	The minimum data set prevalence of restraint quality indicator: does it reflect differences in care?	Minimum Data Set (MDS)	Quality of care	Prevalence of restraint	Residents	Validity assessment	Primary, cross-sectional
Schnelle	2001	Measurement sensitivity and the Minimum Data Set depression quality indicator.	Minimum Data Set (MDS)	Depression	Depression symptoms; prevalence of disturbed mood symptoms	Residents	Validity assessment	Primary, cross-sectional
Schroeder	2016	Quality Focus: Nursing Home Composite Measure Score: A tool for improvement	Nursing Home Composite Measure Score	Quality of care	Quality indicators	Residents	Discussion	Discussion
Sexton	2016	Whose quality of life? A comparison of measures of self-determination and emotional wellbeing in research with older adults with	IDS-TILDA and TILDA	Quality of life	Quality of life	Residents; home; other	Content analysis; acceptability and validity assessment	Secondary, panel

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		and without intellectual disability						
Siegert	2010	Psychological well-being and quality of care: A factor-analytic examination of the Palliative Care Outcome Scale	The Palliative Care Outcome Scale	Palliative care; Quality of care	Psychological well-being ; standard of professional care	Patients	Reliability / validity / feasibility assessment	Secondary, cross-sectional
Slaughter	2006	Measuring physical and social environments in nursing homes for people with middle- to late-stage dementia	Therapeutic Environment Screening Scale-2+ (TESS-2+); Special Care Unit Environmental Quality Scale (SCUEQS), a subset of the TESS-2+ items; Composite Above Average Quality Score (CAAQS), a composite score of all items on the TESS-2+; and Models of Care Instrument (MOCI)	Dementia	Environmental quality	Residents	Comparative, evaluation of measures	Primary, cross-sectional
Sloane	2002	The Therapeutic Environment Screening	The Therapeutic Environment Screening Survey	Dementia; Care home environment	Exit control, maintenance, cleanliness, safety,	Residents; patients	Reliability / validity / factor analysis	Primary, repeated cross-

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		Survey for Nursing Homes (TESS-NH): an observational instrument for assessing the physical environment of institutional settings for persons with dementia	for Nursing Homes (TESS-NH)		orientation/cueing, privacy, unit autonomy, outdoor access, lighting, noise, visual/tactile stimulation, space/seating, and familiarity/homelikeness			sectional / repeated measures
Sphect	2005	Interventions for residents with dementia and their family and staff caregivers: evaluating the effectiveness of measures of outcomes in long-term care	Six instruments developed for programs of research testing nursing interventions for individuals with dementia in Special Care Units and their family and staff caregivers	Dementia	Functional abilities;	Residents; patients; other	Description of psychometric properties	Descriptive
Sterke	2010	Is the Tinetti Performance Oriented Mobility Assessment (POMA) a feasible and valid predictor of short-term fall	Tinetti Performance Oriented Mobility Assessment (POMA)	Dementia; Falls	Fall risk	Patients; residents	Feasibility / validity assessment	Primary, cohort



<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		risk in nursing home residents with dementia?						
Stosz	2009	The use of an assessment tool in care homes	The Minimum Data Set Resident Assessment Instrument (MDS/RAI) for Long Term Care Facilities	Needs assessment	Patients; residents	Residents	Feasibility study; implementation assessment	Other: discussion
Temkin-Greener	2009	Measuring work environment and performance in nursing homes		Quality of care	Staff performance	Staff	Reliability / validity / factor analysis	Primary, cross-sectional
Thompson	2011	A measure of palliative care in nursing homes	Palliative Care Survey (PCS)	Palliative care	Palliative care practice and palliative care knowledge	Staff	Reliability / validity assessment	Primary, cross-sectional
Thompson	2012	Quality of care and quality of dying in nursing homes: two measurement models	Two latent constructs are tested: quality of care (composed of system-level factors) and quality of dying (comprised of resident/family outcomes).	Quality of care; Palliative care	System-level factors and resident / family outcomes	Other (family members)	Reliability / validity / factor analysis	Primary and secondary data, cross-sectional
Triemstra	2010	Measuring client experiences in long-term care in the Netherlands: a pilot study	Consumer Quality Index (CQ-index) Long-term Care	Quality of care	Client experiences with long term care	Residents; home	Feasibility; reliability / validity / factor analysis	Primary, cross-sectional

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		with the Consumer Quality Index Long-term Care						
van der Steen	2002	Measuring discomfort in patients with dementia: Validity of a Dutch version of the Discomfort Scale--Dementia of Alzheimer Type (DS-DAT)	Discomfort Scale - Dementia of Alzheimer Type (DS-DAT)	Dementia	Discomfort	Residents; patients	Feasibility study; reliability / validity / factor analysis	Primary, cross-sectional
Van Haitsma	2014	New toolkit to measure quality of person-centered care: Development and pilot evaluation with nursing home communities	Person-centred care toolkit	Quality of care	Person-centered care	Residents	Feasibility study; Validity assessment	Primary, cross-sectional
van Soest-Poortvliet	2011	Measuring the quality of dying and quality of care when dying in long-term care settings: a qualitative content analysis	Various tools that measure quality of dying and care when dying	Palliative care	Quality of dying and care	Residents	Content analysis	Qualitative

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		of available instruments						
Wagner	2005	Use of a content analysis procedure for the development of a Falls Management Audit Tool	The Falls Management Audit Tool	Falls	Documentation of falls management process	Residents	Reliability/ validity and content analysis	Secondary, cross-sectional
Watson-Wolfe	2014	Application of the Antipsychotic Use in Dementia Assessment audit tool to facilitate appropriate antipsychotic use in long term care residents with dementia	Antipsychotic Use in Dementia Assessment audit tool	Dementia	Antipsychotic use	Residents	Outcome evaluation	Non-randomized trial
Wilberforce	2016	Person-centredness in the care of older adults: a systematic review of questionnaire-based scales and their measurement properties	Various	Person-centred care	Person-centredness	Residents	Review	Systematic review

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
Woitha	2015	Testing feasibility and reliability of a set of quality indicators to evaluate the organization of palliative care across Europe: a pilot study in 25 countries	Quality indicators to evaluate the organization of palliative care	Palliative care	Quality of care	Residents; patients	Feasibility / reliability assessment	Primary, cross-sectional
Wu	2005	The quality of the quality indicator of pain derived from the minimum data set	The quality indicator of pain derived from the minimum data set	Pain assessment	Pain	Residents	Quality assessment	Primary and secondary, cross-sectional
Zhang	2009	Reliability estimates of clinical measures between Minimum Data Set and Online Survey Certification and Reporting data of US nursing homes	Minimum Data Set (MDS) and Online Survey Certification and Reporting (OSCAR)	Quality of care; Resident assessment	Clinical indicators	Residents	Reliability assessment	Secondary, longitudinal
Zhang	2005	The measurement of nursing home	Mullan and Harrington's (2001) facility-level	Quality of care	Care quality	Residents	Reliability / validity / factor analysis	Secondary, longitudinal

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		quality: multilevel confirmatory factor analysis of panel data	quality measurement model,					
Zimmerman	2015	Measuring end-of-life care and outcomes in residential care/assisted living and nursing homes	11 instruments that measure end-of-life care and outcomes	Palliative care	Measure end-of-life care and outcomes	Residents; patients; home	Factor analysis; suitability assessment	Primary, cross-sectional
Zuidema	2011	Assessing neuropsychiatric symptoms in nursing home patients with dementia: reliability and Reliable Change Index of the Neuropsychiatric Inventory and the Cohen-Mansfield Agitation Inventory	Neuropsychiatric Inventory and the Cohen-Mansfield Agitation Inventory	Dementia	Neuropsychiatric symptoms	Residents; patients	Reliability analysis	Before- and-after study
Zuniga	2013	Psychometric properties of the Swiss version of the Nursing Home Survey on	The Nursing Home Survey on Patient Safety Culture (NHSPSC)	Quality of care	Patient safety	Residents	Reliability / validity / factor analysis	Primary, cross-sectional

<b>Author</b>	<b>Year</b>	<b>Title</b>	<b>Name of measurement tool</b>	<b>Area of practice / intervention</b>	<b>Outcome measures</b>	<b>Whose outcome</b>	<b>Approach to evaluation</b>	<b>Methods used</b>
		Patient Safety Culture						
Zwakhaleh	2012	Which score most likely represents pain on the observational PAINAD pain scale for patients with dementia?	PAINAD pain scale	Pain; Dementia	Pain scores	Residents; patients	Validity assessment	Review; primary and secondary cross-sectional
Zwakhaleh	2012	Systematic pain assessment using an observational scale in nursing home residents with dementia: exploring feasibility and applied interventions	Pain assessment observational scale	Pain; Dementia	Pain score	Residents; patients	Feasibility study	Other: exploratory descriptive observational study; structured interviews
Zwakhaleh	2009	The prevalence of pain in nursing home residents with dementia measured using an observational pain scale	PACSLAC-D	Pain; Dementia	Prevalence of pain	Residents; patients	Observational	Primary, cross-sectional

**Table 5 Workforce mapping a)target population**

a Management/administration staff, b Nurses (all designations), c Facilities, d Families, e Residents

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Abraham	2008	Leadership competencies and employee satisfaction in nursing homes	Leadership	USA	Cross-sectional								Y
Abrahamson	2013	The influence of cognitive impairment, special care unit placement and nursing facility characteristics on resident quality of life	Staff numbers	USA	Cross-sectional		Y			Y			
Adams-Wendling	2005	The relationship between nurse staffing and quality in nursing facilities	Staff hours	USA	Cohort (retrospective)		Y						
Akinci	2005	Nurse staffing levels and quality of care in north eastern Pennsylvania nursing homes	Staff numbers	USA	Cross-sectional		Y						
Alexander	2008	An analysis of nursing home quality measures and staffing	staff mix	USA	Cross-sectional		Y						
Alzheimer's Society	2007	Home from home: A report highlighting opportunities for improving standards of dementia care in care homes	Staff training	UK	Report			Y	Y			Y	Y
Anderson	2004	Complexity science and the dynamics of climate and communication: reducing nursing home turnover	Staff turnover	USA	Cross-sectional	Y	Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Andre	2014	The impact of work culture on quality of care in nursing homes: a review study	Staff numbers	Europe non UK	Systematic review							Y	
Anonymous	2001	Case managers emerge as focal point of unique team	Staff mix	USA	Opinion					Y			
Anonymous	2005	Staffing levels in aged care below ministry guidelines	Minimum staff numbers	Other	Descriptive		Y						
Anonymous	2009	Staffing level mix affects quality of care in nursing homes	Staff mix	USA	Descriptive		Y						
Anonymous	2009	Adequate staffing helps ensure patients in nursing homes receive proper treatment for pneumonia	Staff numbers	USA	Descriptive								Y
Anonymous	2011	Hospitals SNFs team up to improve transitions	Teamworking	USA	Opinion								Y
Arling	2007	Nursing effort and quality of care for nursing home residents	Staff numbers	USA	Cross-sectional		Y			Y			
Atkins	2010	Staff turnover in long term care: an intervention study in a group of care homes	Staff turnover	UK	RCT			Y					Y
Backhaus	2014	Nurse staffing impact on quality of care in nursing homes a systematic review of longitudinal studies	Staff numbers	USA	Systematic review		Y						
Backhaus	2015	Relationship between rn staffing and quality of	Staff hours	Europe non UK	Cross-sectional		Y						









Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Carter	2003	Variations in hospitalization rates among nursing home residents: the role of facility and market attributes	Staff mix	USA	Cohort (retrospective)							Y	
Cassidy	2005	Assessment to intervention	Staff training	USA	Qualitative		Y			Y			
Cassie	2012	Organizational and individual conditions associated with depressive symptoms among nursing home residents over time	Staff numbers	USA	Cross-sectional								Y
Castle	2000	Differences in nursing homes with increasing and decreasing use of physical restraints	Staff numbers	USA	Cohort (retrospective)								Y
Castle	2001	Administrator turnover and quality of care in nursing homes	Staff turnover	USA	Cross-sectional	Y							
Castle	2004	Measuring staff turnover in nursing homes	Staff turnover	USA	Cross-sectional	Y							
Castle	2005	Staff turnover and quality of care in nursing homes	Staff turnover	USA	Mixed methods		Y						
Castle	2006	Organizational characteristics associated with staff turnover in nursing homes	Staff turnover	USA	Mixed methods		Y			Y			
Castle	2007	The influence of staffing characteristics on quality of care in nursing homes	Staff numbers	USA	Cross-sectional		Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Castle	2007	The influence of staffing characteristics on quality of care in nursing homes	Staff numbers	USA	Cross-sectional		Y						
Castle	2007	Nursing home staff turnover: impact on nursing home compare quality measures	Staff turnover	USA	Cross-sectional		Y						
Castle	2008	Further examination of the influence of caregiver staffing levels on nursing home quality	Staff numbers	USA	Cross-sectional		Y						
Castle	2008	Nurse aide agency staffing and quality of care in nursing homes	Staff numbers	USA	Cross-sectional		Y						
Castle	2008	Nursing home caregiver staffing levels and quality of care: a literature review	Staff numbers	USA	Review		Y						
Castle	2008	State differences and facility differences in nursing home staff turnover	Staff turnover	USA	Cross-sectional	Y	Y						
Castle	2010	Top management turnover & quality in nursing homes	Staff turnover	USA	Cross-sectional	Y							
Castle	2011	Caregiver staffing in nursing homes and their influence on quality of care: Using dynamic panel estimation methods	Staff numbers	USA	Cohort (retrospective)		Y						
Castle	2011	Nursing home deficiency citations for abuse	Staff numbers	USA	Cohort (retrospective)								Y
Castle	2011	The influence of consistent assignment on	Staff roles	USA	Cross-sectional		Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		nursing home deficiency citations											
Castle	2012	Reviewing the evidence base for nurse staffing	Staff numbers	USA	Opinion								Y
Castle	2014	Changes in staff mix and quality in nursing homes	Staff mix	USA	Cross-sectional	Y							
Castle	2015	Influence of nurse aide absenteeism on nursing home quality	Staff absenteeism	USA	Cross-sectional	Y		Y					
Chang	2005	Effects of a feeding skills training programme on nursing assistants and dementia patients	Staff training	Other	Quasi-experimental		Y						
Chang	2006	The effect of a feeding skills training program for nursing assistants who feed dementia patients in Taiwanese nursing homes	Staff training	Other	Quasi-experimental		Y						
Chapman	2007	Effectiveness of advanced illness care teams for nursing home residents with dementia	Staff roles	USA	RCT							Y	
Chen	2015	Intended and unintended consequences of minimum staffing standards for nursing homes	Staff numbers	USA	Cross-sectional		Y						
Cherubini	2012	Predictors of hospitalization in Italian nursing home residents: the U L I S S E project	Staff numbers	Europe non UK	Descriptive		Y				Y		
Chipantiza	2014	A quantitative analysis of nurse staffing skill mix to	Staff mix	USA	Cross-sectional		Y						

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		quality of care in nursing homes											
Choi	2012	Nursing practice environment and registered nurses job satisfaction in nursing homes	Job satisfaction	USA	Cross-sectional		Y						
Chou	2002	Staff satisfaction and its compents in residential aged care	Staff roles	Other	Cross-sectional	Y	Y						Y
Chou	2003	Factors influencing residents satisfaction in residential aged care	Staff hours	Other	Cross-sectional							Y	
Chu	2014	Turnover of regulated nurses in long term care facilities	Staff turnover	Other	Cross-sectional		Y			Y			
Clare	2013	Awarecare: A pilot randomized controlled trial of an awareness based staff training intervention to improve quality of life for residents with severe dementia in long term care settings	Staff training	UK	RCT (Cluster)								Y
Collier	2008	Quality of care & California nursing homes: the effects of staffing organizational, resident and market characteristics	Staff numbers	USA	Cross-sectional			Y					
Collier	2008	Staffing characteristics, turnover rates, and quality of resident care in nursing facilities	Staff turnover	USA	Systematic review		Y			Y			

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Comondore	2009	Quality of care in for profit and not for profit nursing homes: systematic review and meta analysis	Staff numbers	USA	Systematic review								
Corazzini	2013	Licensed practical nurse scope of practice and quality of nursing home care	Staff mix	USA	Mixed methods		Y						
CQC	2012	Time to listen in care homes dignity and nutrition inspection programme 2012	Staff numbers	UK	Cross-sectional								Y
Crickard	2005	A West Virginia nursing facility structure and its effects on quality outcomes	Staff numbers	USA	Case study					Y			
de Jonge	2014	Managing employee creativity and health in nursing homes: the moderating role of matching job resources and matching occupational rewards	Staff roles	Europe non UK	Cross-sectional								Y
Decker	2008	The relationship of nursing staff to the hospitalization of nursing home residents	Staff numbers	USA	Cohort (retrospective)		Y						
Dellefield	2000	The relationship between nurse staffing in nursing homes and quality indicator: a literature review	Staff numbers	USA	Review		Y						





Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		of aged care facilities: A review of patient and organizational factors											
Dyck	2004	Nursing staffing and resident outcomes in nursing homes	Staff numbers	USA	Cross-sectional		Y						
Dyck	2007	Nursing staffing and resident outcomes in nursing homes: weight loss and dehydration	Staff numbers	USA	Cross-sectional		Y						
Eckstrom	2016	An interprofessional approach to reducing the risk of falls through enhanced collaborative practice	Staff training	USA	Quasi-experimental		Y			Y	Y		
Ersek	2014	Provider staffing effect on a decision aid intervention	staff mix	USA	RCT (Cluster)		Y		Y				
Eyers	2003	Meeting the needs of older people: a comparative study of care home staff in England and Germany	Staff training	UK	Mixed methods	Y	Y						
Figueirido	2013	Empowering staff in dementia long term care: Towards a more supportive approach to interventions	Staff training	Europe non UK	Qualitative					Y			
Finnema	2005	The effect of integrated emotion oriented care versus usual care on elderly persons with dementia in the nursing home and on nursing	Staff roles	Europe non UK	RCT		Y					Y	

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		assistants: a randomized clinical trial											
Fitzler	2016	Does nursing facility use of habilitation therapy improve performance on quality measures?	Staff roles	USA	Quasi-experimental			Y					Y
Freed	2003	The role of care staff in identifying and managing depression in residential homes	Staff roles	UK	Mixed methods							Y	Y
Freeman	2003	Assuring safety for people with dementia in long term care facilities: a focus on staffing	Staff numbers	USA	Descriptive								Y
Gao	2014	Models for predicting turnover of residential aged care nurses: A structural equation modelling analysis of secondary data	Staff turnover	Other	Cross-sectional		Y						
Garrido	2014	Relationship between structural characteristics and outcome quality indicators at health care facilities for the elderly requiring long term care in Japan from a nationwide survey	Staff numbers	Other	Cross-sectional		Y						Y
Gloth	2011	A comparative effectiveness trial between a post acute care hospitalist model and a community based	Staff roles	USA	Quasi-experimental						Y		

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		physician model of nursing home care											
Goldberg	2000	Keys to retaining staff the Jewish home & hospital experience	Staff turnover	USA	Opinion								Y
Gorski	2004	Quality of care in nursing homes: The relationship between state level health care policy and selected quality measures	Various	USA	Review							Y	Y
Goyder	2012	Staff training using STAR: A pilot study in UK care homes	Staff training	UK	Quasi-experimental								Y
Grabowski	2008	Predictors of nursing home hospitalization: a review of the literature	Staff numbers	USA	Review					Y			
Gray-Siracusa	2005	Acuity based staffing in long term care: does it influence quality?	staff mix	USA	Cross-sectional		Y						
Halcomb	2009	Feasibility and sustainability of a model of multidisciplinary case conferencing in residential aged care	Teamworking	Other	Qualitative					Y	Y		
Harahan	2011	Implementation and evaluation of LVN LEAD: A leadership and supervisory training program for nursing home charge nurses	Staff training	USA	Qualitative								
Harden	2015	They are called nursing homes for a reason: RN	Minimum staff numbers	USA	Opinion	Y				Y			

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		staffing in long term care facilities											
Harrington	2000	Nursing home staffing and its relationship to deficiencies	Staff numbers	USA	Cross-sectional	Y	Y			Y			
Harrington	2003	Nursing home staffing, turnover, and case mix	Staff hours	USA	Cross-sectional		Y						
Harrington	2012	Nurse staffing and deficiencies in the largest for profit nursing home chains and chains owned by private equity companies	Staff numbers	USA	Cohort (retrospective)			Y		Y			
Harrington	2016	The need for higher minimum staffing standards in US nursing homes	Minimum staff numbers	USA	Opinion		Y						
Harvath	2008	Enhancing nursing leadership in long term care	Leadership	USA	Review		Y						
Hasson	2008	Nursing staff competence, work strain, stress and satisfaction in elderly care: A comparison of home based care and nursing homes	Staff hours	Europe non UK	Cross-sectional		Y						
Havig	2011	Leadership, staffing and quality of care in nursing homes	Leadership	Europe non UK	Cross-sectional								Y
Havig	2014	Staffing and quality of care in Norwegian nursing homes	Staff numbers	Europe non UK	Cross-sectional		Y			Y			

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Heath	2012	How to optimise the registered nurse contribution in care homes	Staff mix	UK	Opinion		Y						
Hedrick	2009	Assisted living pilot program: Health outcomes	Staff numbers	USA	Cross-sectional					Y		Y	
Heeren	2014	Staffing levels and the use of physical restraints in nursing homes: A multicentre study	Staff numbers	Europe non UK	Cross-sectional					Y			
Hegeman	2005	Turnover Turnaround: A CNA mentoring program can improve staff retention in long term care centers	Staff turnover	USA	Opinion		Y						
Help the Aged	2007	My home life Quality of life in care homes: A review of the literature	Various	UK	Review							Y	
Hendrix	2000	Optimal nursing home staffing	Staff numbers	USA	Cross-sectional		Y						
Hendrix	2001	Optimal long term care nurse staffing levels	Staff numbers	USA	Cross-sectional		Y						
Heponiemi	2011	The effects of ownership, staffing level and organisational justice on nurse commitment, involvement, and satisfaction: A questionnaire study	Job satisfaction	Europe non UK	Cross-sectional								Y
Hewison	2009	Delivering gold standards in end of life care in care	Teamworking	UK	Case study	Y		Y					Y

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		homes: A question of teamwork											
Hickey	2005	The effects of changes in nursing home staffing on pressure ulcer rates	Staff numbers	USA	Cross-sectional	Y	Y						
Hodgkinson	2011	Effectiveness of staffing models in residential, subacute, extended aged care settings on patient and staff outcomes	Staff mix	Other	Systematic review	Y	Y						
Hofmann	2003	Decreasing the incidence of falls in the nursing home in a cost conscious environment: A pilot study	Staff numbers	USA	Quasi-experimental		Y					Y	
Hollingsworth	2016	Comparison between quality of care provided by trained feeding assistants and certified nursing assistants during between meal supplementation in long term care settings	Staff roles	USA	Cross-sectional		Y			Y			
Horn	2005	RN staffing time and outcomes of long stay nursing home residents	Staff hours	USA	Cohort (retrospective)		Y						
Horn	2010	Beyond CMS quality measure adjustments: Identifying key resident and nursing home facility factors associated with quality measures	Staff turnover	USA	Cross-sectional								Y
Hovey	2015	Hospital readmission rates following skills training	Staff training	USA	Quasi-experimental	Y							

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		for nurses employed in long term care facilities											
Hunt	2014	Top nurse management staffing collapse and care quality in nursing homes	Staff turnover	USA	Case study								Y
Hutt	2003	Associations among processes and outcomes of care for Medicare nursing home residents with acute heart failure	Staff hours	USA	Cohort (retrospective)	Y	Y						
Hutt	2008	Associations among nurse and certified nursing assistant hours per resident per day and adherence to guidelines for treating nursing home acquired pneumonia	Staff hours	USA	Cohort (prospective)		Y						
Hyde	2014	Organisational aspects of elder mistreatment in long term care	Staff numbers	UK	Review			Y	Y			Y	Y
Hyer	2011	The influence of nurse staffing levels on quality of care in nursing homes	Staff hours	USA	Cohort (retrospective)		Y						
Ikegami	2013	Nursing homes and end of life care in Japan	Staff numbers	Other	Cross-sectional				Y			Y	
Intrator	2011	Medical staff organization and rehospitalizations: hospital based versus freestanding nursing homes	Staff roles	USA	Descriptive	Y							
Irvine	2013	Use of a dementia training designed for nurse aides to train other staff	Staff training	USA	Quasi-experimental		Y						





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Kash	2006	Effect of staff turnover on staffing: A closer look at registered nurses, licensed vocational nurses, and certified nursing assistants	Staff turnover	USA	Cross-sectional		Y						
Kash	2010	Exploring factors associated with turnover among registered nurse RN supervisors in nursing homes	Staff turnover	USA	Cross-sectional	Y	Y						
Katz	2009	Nursing home physician specialists: A response to the workforce crisis in long term care	Staff roles	USA	Opinion						Y		
Katz	2011	Nursing home medical staff organization: Correlates with quality indicators	Staff roles	USA	Cross-sectional	Y							
Kayser-Jones	2003	Factors that influence end of life care in nursing homes: The physical environment, inadequate staffing, and lack of supervision	Staff numbers	USA	Mixed methods		Y		Y		Y	Y	
Kayser-Jones	2008	Pressure ulcers among terminally ill nursing home residents	Staff numbers	USA	Qualitative	Y	Y		Y				
Kayyali	2014	The impact of turnover in nursing homes	Staff turnover	USA	Cohort (retrospective)		Y						
Keogh	2014	CQC says greater effort is needed to boost care sectors workforce	Staff numbers	UK	Report		Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Kerr	2008	Supporting older people in care homes at night	Staff roles	UK	Report	Y			Y			Y	Y
Killett	2013	How organizational factors interact to influence the quality of care of older people in the care home sector	Staff numbers	UK	Qualitative								Y
Kim	2006	A longitudinal study of the relationship between nurse staffing and quality of care in nursing homes	Staff hours	USA	Cross-sectional		Y						
Kim	2009	Registered nurse staffing mix and quality of care in nursing homes: A longitudinal analysis	Staff mix	USA	Cohort (retrospective)		Y						
Kim	2009	A panel data analysis of the relationships of nursing home staffing levels and standards to regulatory deficiencies	Staff mix	USA	Cohort (retrospective)		Y						
King	2001	Multidisciplinary case conference reviews: Improving outcomes for nursing home residents, carers, and health professionals	Teamworking	Other	RCT		Y			Y	Y		
Kinjerski	2008	The promise of spirit at work: Increasing job satisfaction and organizational commitment and reducing turnover and absenteeism in long term care	Job satisfaction	USA	Quasi-experimental	Y							Y

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Kirkevold	2004	Use of constraints and their correlates in Norwegian nursing homes	Staff numbers	Europe non UK	Cross-sectional		Y		Y			Y	
Kirkevold	2006	The quality of care in Norwegian nursing homes	Staff hours	Other	Cross-sectional								Y
Kirkevold	2008	Quality of care in Norwegian nursing homes deficiencies and their correlates	Staff hours	Other	Cross-sectional								Y
Klay	2005	Use of a continence nurse specialist in an extended care facility	Staff roles	USA	Quasi-experimental		Y						
Klitch	2000	Survey survival: Staffing to avoid deficiencies	Staff numbers	USA	Opinion	Y							
Konetzka	2005	Personal care aide turnover in residential care settings: An assessment of ownership, economic, and environmental factors	Staff turnover	USA	Cross-sectional		Y	Y					
Konetzka	2008	The staffing-outcomes relationship in nursing homes	Staff hours	USA	Cross-sectional		Y						
Kovner	2000	Research priorities for staffing, case mix, and quality of care in US nursing homes	Staff mix	USA	Descriptive								Y
Kovner	2000	Quality of care linked to nurse staffing levels	Staff numbers	USA	Opinion	Y	Y						
Kovner	2001	The impact of staffing and the organization of work on patient outcomes and	Staff mix	USA	Review						Y		Y

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		health care workers in health care organizations											
Kramer	2002	Of costs and caregivers: Analyzing the impact of staffing recommendations	Staff hours	USA	Opinion		Y						
Krichbaum	2000	Better care in nursing homes: Advanced practice nurses strategies for improving staff use of protocols	Staff roles	USA	Descriptive		Y						
Kris	2004	Staffing and symptom management in nursing homes	Staff numbers	USA	Qualitative								
Kris	2009	Influence of staffing levels on pressure ulcer management in nursing homes	Staff numbers	USA	Mixed methods								
Krueger	2002	Organization specific predictors of job satisfaction: Findings from a Canadian multi-site quality of work life cross-sectional survey	Job satisfaction	Other	Cross-sectional	Y							Y
Kuo	2008	Relationship between organizational empowerment and job satisfaction perceived by nursing assistants at long term care facilities	Job satisfaction	Other	Cross-sectional		Y	Y					
Laakso	2001	Changing to primary nursing in a nursing home in Finland: Experiences of residents, their family members and nurses	Staff roles	Europe non UK	Qualitative		Y		Y			Y	

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Laging	2015	A meta synthesis of factors influencing nursing home staff decisions to transfer residents to hospital	Staff roles	Other	Systematic review								Y
Landreville	2005	A training program for managing agitation of residents in long term care facilities: Description and preliminary findings	Staff training	Other	Quasi-experimental							Y	
Lange	2011	The ELDER project: Educational model and three year outcomes of a community based geriatric education initiative	Staff training	USA	Quasi-experimental	Y	Y						Y
Lapane	2004	Which organizational characteristics are associated with increased management of depression using antidepressants in US nursing homes ?	Staff numbers	USA	Cross-sectional			Y				Y	
Lapane	2007	Considering the employee point of view: perceptions of job satisfaction and stress among nursing staff in nursing homes	Job satisfaction	USA	Cross-sectional		Y						
Lapane	2011	Evaluation of the Fleetwood model of long term care pharmacy	Staff roles	USA	Quasi-experimental					Y		Y	
LaPorte	2007	Nurse practitioners given hands on role	Staff roles	USA	Opinion		Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Lee	2002	Cost and care quality between licensed nursing homes under different types of ownership	Staff numbers	Other	Cross-sectional	Y							
Lee	2009	Quality of care: Impact of nursing home characteristics	Staff numbers	USA	Cross-sectional							Y	
Lee	2014	The effects of RN staffing hours on nursing home quality: A two stage model	Staff hours	USA	Cross-sectional		Y						
Leland	2012	Falls in newly admitted nursing home residents: A national study	Staff numbers	USA	Cross-sectional			Y				Y	
Lerner	2013	The relationship between nursing staff levels, skill mix, and deficiencies in Maryland nursing homes	Staff numbers	USA	Cross-sectional		Y						
Lerner	2014	Are nursing home survey deficiencies higher in facilities with greater staff turnover?	Staff turnover	USA	Cross-sectional			Y					
Lewis	2004	Staff perceptions of involvement and self value in nursing homes: Does position matter?	Job satisfaction	USA	Cross-sectional								Y
Li	2015	Nurse staffing hours at nursing homes with high concentrations of minority residents: 2001-11	Staff hours	USA	Cross-sectional	Y							
Lin	2014	Revisiting the relationship between nurse staffing and quality of care in	Staff numbers	USA	Cross-sectional			Y					

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		nursing homes: An instrumental variables approach											
Lisk	2012	Geriatrician input into nursing homes reduces emergency hospital admissions	Staff roles	UK	Quasi-experimental	Y		Y			Y	Y	
Liu	2011	Work autonomy of certified nursing assistants in long term care facilities: Discrepant perceptions between nursing supervisors and certified nursing assistants	Staff roles	Other	Cross-sectional	Y	Y						
Lucas	2007	The relationship between organizational factors and resident satisfaction with nursing home care and life	Staff numbers	USA	Cross-sectional			Y	Y			Y	
Lucas	2009	Nursing homes, residential homes and domiciliary care establishments: A research project conducted for Skills for Care	Staff numbers	UK	Cross-sectional	Y	Y			Y			
Maas	2008	Nursing home staffing and training recommendations for promoting older adults quality of care and life	Staff numbers	USA	Review								Y
MacEntee	2007	Provision of mouth care in long term care	Staff training	Other	RCT		Y						



Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		facilities: An educational trial											
Manitoba Nurses' Union	2006	Long term care in Manitoba	Staff hours	Other	Cross-sectional								Y
Marcotte	2009	Resident centred care and work satisfaction of health care aides working with personal care home residents living with dementia	Staff roles	Other	Qualitative		Y						
Masterson	2004	Towards an ideal skill mix in nursing homes	Staff mix	UK	Review								
Matsudaira	2012	Government regulation and the quality of healthcare evidence from minimum staffing legislation for nursing homes	Staff numbers	USA	Cross-sectional			Y					
Mattingly	2015	A review exploring the relationship between nursing home staffing and antipsychotic medication use	Staff numbers	Europe non UK	Review		Y						
Mayrhofer	2016	The feasibility of a 'train the trainer' approach to end of life care training in care homes: an evaluation	staff training	UK	Mixed methods								Y
McAiney	2008	A unique practice model for nurse practitioners in long term care homes	staff mix	Other	Cross-sectional	Y	Y						
McGilton	2007	Effects of director of care support and job satisfaction among long	Job satisfaction	Other	Cross-sectional	Y							

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		term care nurse supervisors											
McGilton	2014	Making tradeoffs between the reasons to leave and reasons to stay employed in long term care homes: Perspectives of licensed nursing staff	staff turnover	Other	Qualitative		Y						
McGregor	2005	Staffing levels in not for profit and for profit long term care facilities: Does type of ownership matter?	Staff hours	Other	Cross-sectional	Y							
McGregor	2011	A survey of nursing home organizational characteristics associated with potentially avoidable hospital transfers and care quality in one large British Columbia health region	Staff numbers	Other	Cross-sectional	Y							
McGregor	2014	Nursing home characteristics associated with resident transfers to emergency departments	Staff hours	Other	Cohort (retrospective)			Y					
McKinney	2016	Nursing home director of nursing leadership style and director of nursing sensitive survey deficiencies	Leadership	USA	Cross-sectional								
McNulty	2006	Is there an opportunity to reduce urinary catheter related infections? Exploring variation in	Staff numbers	UK	Cross-sectional		Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		catheterisation rates in care homes											
Meade	2016	Implementation of a team model for RACF care by a general practice	Teamworking	Other	Mixed methods	Y					Y		
Meehan	2015	Process evaluation of a quality improvement project to decrease hospital readmissions from skilled nursing facilities	staff training	USA	Mixed methods	Y	Y						
Miller	2016	Effects of staffing and regional location on influenza and pneumococcal vaccination rates in nursing home residents	Staff hours	USA	Cohort (retrospective)			Y				Y	
Mitchell	2003	Nursing home characteristics associated with tube feeding in advanced cognitive impairment	staff mix	USA	Descriptive							Y	
Molinari	2008	Development of a model for staff training to address serious mental illness in nursing homes	Staff training	USA	Mixed methods					Y			Y
Monarch	2005	Legal clinic: The quality of care provided in nursing homes	Staff numbers	USA	Opinion		Y						
Monkhouse	2003	Beyond the medical model: The Eden alternative in practice: A Swiss experience	Staff roles	Europe non UK	Case study			Y				Y	

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Morgan	2008	A mixed method evaluation of a workforce development intervention for nursing assistants in nursing homes: The case of win a step up	staff training	USA	Mixed methods	Y	Y						
Moxon	2001	Mental health in residential homes: a role for care staff	staff training	UK	Cross-sectional								Y
Moyle	2003	Views of job satisfaction and dissatisfaction in Australian long term care	Job satisfaction	Other	Qualitative		Y						
Mueller	2006	Staffing standards for long term care facilities: Where is the evidence?	Staff hours	USA	Mixed methods		Y						
Mueller	2012	Nurse staffing and practice patterns in nursing homes	staff mix	USA	Cross-sectional								
Muirhead	2004	A multidisciplinary approach to LTC patients with behavioral problems	Staff mix	USA	Opinion								Y
National Center for Health Workforce Analyses	2004	Nursing aides, home health aides, and related health care occupations: National and local workforce shortages and associated data needs	Staff numbers	USA	Report		Y			Y			
Nazir	2013	Systematic review of interdisciplinary interventions in nursing homes	Teamworking	USA	Systematic review	Y				Y			
Neuman	2014	Association between skilled nursing facility	Staff numbers	USA	Cohort (retrospective)		Y			Y			

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		quality indicators and hospital readmissions											
Noel	2000	Front line workers in long term care: The effect of educational interventions and stabilization of staffing ratios on turnover and absenteeism	Staff turnover	USA	Quasi-experimental		Y						
Older People's Commissioner for Wales	2014	A place to call home: A review into the quality of life and care of older people living in care homes in Wales	Staff numbers	UK	Report			Y	Y			Y	
Orellana	2014	Care home managers: A scoping review of evidence	Staff turnover	UK	Review	Y							
Ottem	2004	Changing staff mix	staff mix	Other	Opinion		Y						
Painter	2000	The evolving role of certified nursing assistants in long term care facilities. Part three	Staff roles	USA	Report		Y						
Painter	2000	The evolving role of certified nursing assistants in long term care facilities	Staff roles	USA	Report		Y						
Park	2009	Effects of state minimum staffing standards on nursing home staffing and quality of care	Staff numbers	USA	Cohort (retrospective)	Y	Y						
Parsons	2003	Determinants of satisfaction and turnover among nursing assistants: The results of a state wide survey	Staff turnover	USA	Cross-sectional		Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Paulsen	2005	Staffing, organisation, and quality of care: A multi level analysis of staff made quality assessments in nursing homes	Staff numbers	Europe non UK	Cross-sectional								
Phillips	2000	Health status, staffing, and Medicaid reimbursement in nursing homes, 1985 to 1995	Staff numbers	USA	Cohort (retrospective)					Y			
Pillemer	2008	A facility specialist model for improving retention of nursing home staff: Results from a randomized controlled study	Staff turnover	USA	RCT	Y	Y						
Pittman	2015	The changing roles of registered nurses in pioneer accountable care organizations	Staff roles	USA	Qualitative		Y						
PSSRU	2011	Measuring the productivity of workforce development in care homes	Staff mix	UK	Descriptive								Y
Rahnfeld	2016	Uncovering the care setting turnover intention relationship of geriatric nurses	Staff turnover	Europe non UK	Cross-sectional		Y						
Rai	2012	Organizational commitment among long term care staff	Job satisfaction	USA	Cross-sectional								Y
Rantz	2014	Initiative to test a multidisciplinary model with advanced practice	Staff numbers	USA	Descriptive		Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		nurses to reduce avoidable hospitalizations among nursing facility residents											
RCN	2004	RCN care home survey 2004: Impact of low fees for care homes in the UK	Staff mix	UK	Cross-sectional	Y	Y						
RCN	2010	Care homes under pressure: an England report	Staff numbers	UK	Report								Y
RCN	2010	Guidance on safe nurse staffing levels	Staff numbers	UK	Report		Y						
RCN	2012	Persistent challenges to providing quality care: An RCN report on the views and experiences of frontline nursing staff in care homes in England	Staff numbers	UK	Report					Y			Y
Redfern	2002	Work satisfaction, stress, quality of care and morale of older people in a nursing home	Job satisfaction	UK	Mixed methods							Y	Y
Rico	2013	Staffing the nation's nursing homes	Staff turnover	USA	Cross-sectional		Y						
Riggs	2001	A model of staff support to improve retention in long term care	Staff turnover	USA	Review		Y						
Rondeau	2009	Developing human capital: What is the impact on nurse turnover?	Staff turnover	Other	Cross-sectional		Y						
Rosen	2011	Stayers, leavers, and switchers among certified nursing assistants in	Job satisfaction	USA	Cross-sectional		Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		nursing homes: A longitudinal investigation of turnover intent, staff retention, and turnover											
Ryden	2000	Value added outcomes: The use of advanced practice nurses in long term care facilities	Staff mix	USA	Quasi-experimental		Y					Y	
Sawan	2016	Exploring the link between organizational climate and the use of psychotropic medicines in nursing homes: A qualitative study	Staff numbers	Other	Qualitative								
Schnelle	2004	Relationship of nursing home staffing to quality of care	Staff numbers	USA	Mixed methods		Y						Y
Schwendimann	2016	Factors associated with high job satisfaction among care workers in Swiss nursing homes: A cross-sectional survey study	Job satisfaction	Europe non UK	Cross-sectional		Y						
Scott-Cawiezell	2007	Nursing home error and level of staff credentials	Staff mix	USA	Descriptive		Y			Y			
Scottish Care	2015	In the front line: Supplementary report on the use of agency staffing	Staff mix	UK	Report			Y					
Scottish Care	2015	In the front line: social care providers survey report on recruitment and retention 2015	Staff turnover	UK	Report	Y	Y			Y			





Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
		standards are created and enforced, residents are at risk											
Shippee	2015	Longitudinal changes in nursing home resident reported quality of life: The role of facility characteristics	Staff numbers	USA	Qualitative							Y	
Simmons	2001	Improving food intake in nursing home residents with feeding assistance: A staffing analysis	Staff roles	USA	Descriptive		Y					Y	
Simmons	2004	Individualized feeding assistance care for nursing home residents: staffing requirements to implement two interventions	Staff roles	USA	Descriptive		Y					Y	
Spector	2013	Potentially avoidable hospitalizations for elderly long stay residents in nursing homes	Staff numbers	USA	Cohort (retrospective)							Y	
Spilsbury	2011	The relationship between nurse staffing and quality of care in nursing homes: A systematic review	Staff numbers	UK	Systematic review		Y						
Spilsbury	2015	Supporting nursing in care homes	Staff roles	UK	Mixed methods		Y						
Spilsbury	2015	Understanding the registered nursing workforce in care homes	Staff training	UK	Descriptive	Y	Y						
Stearns	2007	Determinants and effects of nurse staffing intensity	Staff numbers	USA	Cohort (retrospective)		Y					Y	



Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Thompson	2002	Turnover of licensed nurses in skilled nursing facilities	Staff turnover	USA	Cross-sectional		Y						
Tong	2011	The effects of California minimum nurse staffing laws on nurse labor and patient mortality in skilled nursing facilities	Staff numbers	USA	Cross-sectional		Y						
Trinkoff	2005	Staffing and worker injury in nursing homes	Staff hours	USA	Descriptive		Y						
Trinkoff	2013	Turnover, staffing, skill mix, and resident outcomes in a national sample of US nursing homes	Staff turnover	USA	Cross-sectional		Y						
Unruh	2005	Impact of Medicare reimbursement changes on staffing and the quality of care in nursing homes	Staff numbers	USA	Cohort (retrospective)		Y						
Wagner	2008	Nursing homes organizational factors and resident mistreatment	Staff numbers	USA	Cohort (retrospective)							Y	
Walker	2008	Effects of the medication nursing assistant role on nurse job satisfaction and stress in long term care	Staff roles	USA	Cross-sectional		Y						
Wan	2006	Predictors of resident outcome improvement in nursing homes	Staff numbers	USA	Cohort (retrospective)							Y	
Way	2008	Job demand, job control, and support: a comparison of three nursing work environments	Job satisfaction	USA	Cross-sectional		Y						

Study (First author)	Year	Study Title	Staff related topic	Country	Study design	MNT <sup>a</sup>	N <sup>b</sup>	FAC <sup>c</sup>	FAM <sup>d</sup>	OTHER	DRs	RES <sup>e</sup>	Staff NOS
Weech-Maldonado	2004	Nurse staffing patterns and quality of care in nursing homes	Staff mix	USA	Cross-sectional		Y						
Wild	2010	Residential care home workforce development: the rhetoric and reality of meeting older residents future care needs	Staff training	UK	Report	Y			Y	Y		Y	
Woo	2005	Low staffing level is associated with malnutrition in long term residential care homes	Staff numbers	Other	Cross-sectional							Y	
Xing	2013	Hospitalizations of nursing home residents in the last year of life: nursing home characteristics and variation in potentially avoidable hospitalizations	Staff numbers	USA	Cross-sectional							Y	
Xu	2013	Effect of nursing home characteristics on residents' quality of life: a systematic review	Staff mix	USA	Systematic review			Y					
Yamaguchi	2016	Job control, work family balance and nurse's intention to leave their profession and organization: a comparative cross sectional survey	Staff turnover	Other	Cross-sectional								
Yassi	2004	Factors associated with staff injuries in intermediate care facilities	Staff numbers	Other	Mixed methods		Y						Y



<b>Study (First author)</b>	<b>Year</b>	<b>Study Title</b>	<b>Staff related topic</b>	<b>Country</b>	<b>Study design</b>	<b>MNT<sup>a</sup></b>	<b>N<sup>b</sup></b>	<b>FAC<sup>c</sup></b>	<b>FAM<sup>d</sup></b>	<b>OTHER</b>	<b>DRs</b>	<b>RES<sup>e</sup></b>	<b>Staff NOS</b>
Zuniga	2014	Staffing, turnover and long-term absences do not relate with quality of care in Swiss nursing homes	Staff turnover	Europe non UK	Cross-sectional								Y
Zuniga	2015	Are staffing, work environment, work stressors, and rationing of care related to care workers' perception of quality of care? a cross-sectional study	Staff numbers	Europe non UK	Cross-sectional		Y						

**Table 6 Workforce mapping b) outcomes**

Study (First author)	Year	Resident Satisfaction, Quality of life, Wellbeing	Resident Functional Status	Resident Clinical Outcome	Staff Outcome	Process Outcome	System/Service Use Outcome	Other
Abraham	2008				Y			
Abrahamson	2013		Y	Y		Y		
Adams-Wendling	2005		Y	Y				
Akinci	2005	Y				Y		Y
Alexander	2008		Y	Y				
Alzheimer's Society	2007	Y		Y	Y			
Anderson	2004				Y			
Andre	2014							Y
Anonymous	2001						Y	
Anonymous	2005							Y
Anonymous	2009		Y	Y				
Anonymous	2009			Y		Y	Y	
Anonymous	2011				Y		Y	
Arling	2007		Y	Y				
Atkins	2010				Y			
Backhaus	2014		Y	Y		Y	Y	
Backhaus	2015			Y		Y		
Backhaus	2015							Y
Banaszak-Holl	2015				Y			
Bates-Jensen	2004	Y		Y				Y
Berta	2013				Y			Y
Blekken	2015			Y				
Blinkhorn	2012	Y		Y				
Boorsma	2011	Y	Y	Y		Y		
Bostick	2002		Y	Y				
Bostick	2004		Y	Y				
Bostick	2006		Y	Y			Y	
Boumans	2008				Y			
Bowblis	2011			Y		Y		
Bowers	2000				Y			
Brown	2007				Y			Y
Brown	2016				Y			
Brulhart	2011				Y	Y	Y	
Buettner	2009				Y			
Bunn	2015			Y				



Study (First author)	Year	Resident Satisfaction, Quality of life, Wellbeing	Resident Functional Status	Resident Clinical Outcome	Staff Outcome	Process Outcome	System/Service Use Outcome	Other
Burgio	2004			Y	Y			
California Health Care Foundation	2006	Y			Y		Y	Y
California Health Care Foundation	2008						Y	Y
Carrier, N	2009	Y						
Carter	2003						Y	
Cassidy	2005				Y			Y
Cassie	2012		Y	Y				
Castle	2000					Y	Y	
Castle	2001			Y		Y		
Castle	2004				Y			
Castle	2005			Y		Y		Y
Castle	2006		Y	Y			Y	Y
Castle	2007		Y	Y				Y
Castle	2007		Y	Y				Y
Castle	2007		Y	Y				Y
Castle	2008		Y	Y				Y
Castle	2008		Y	Y		Y		Y
Castle	2008	Y	Y	Y	Y	Y	Y	
Castle	2008		Y			Y	Y	Y
Castle	2010		Y	Y		Y		
Castle	2011			Y				
Castle	2011			Y		Y	Y	
Castle	2011					Y		
Castle	2012							Y
Castle	2014							Y
Castle	2015			Y	Y		Y	
Chang	2005			Y	Y			
Chang	2006				Y			
Chapman	2007			Y				
Chen	2015			Y		Y	Y	Y
Cherubini	2012						Y	
Chipantiza	2014							
Choi	2012				Y			
Chou	2002				Y	Y		
Chou	2003	Y			Y			

Study (First author)	Year	Resident Satisfaction, Quality of life, Wellbeing	Resident Functional Status	Resident Clinical Outcome	Staff Outcome	Process Outcome	System/Service Use Outcome	Other
Chu	2014				Y			
Clare	2013	Y			Y			Y
Collier	2008			Y		Y		Y
Collier	2008		Y	Y	Y		Y	
Comondore	2009	Y		Y			Y	Y
Corazzini	2013				Y			
CQC	2012							
Crickard	2005		Y	Y		Y		
de Jonge	2014				Y			
Decker	2008			Y			Y	
Dellefield	2000	Y	Y	Y		Y	Y	
Dhaini	2016				Y			
Dill	2013				Y			
Dixon	2010		Y	Y			Y	
Donoghue	2007				Y			
Donoghue	2010				Y		Y	
Dwyer	2011				Y			
Dwyer	2015						Y	
Dyck	2004			Y				
Dyck	2007			Y				
Eckstrom	2016			Y			Y	Y
Ersek	2014			Y				Y
Eyers	2003							
Figueirido	2013	Y			Y			Y
Finnema	2005	Y		Y	Y			
Fitzler	2016			Y				
Freed	2003			Y	Y			
Freeman	2003				Y			Y
Gao	2014				Y			
Garrido	2014			Y				
Gloth	2011			Y		Y	Y	
Goldberg	2000				Y			Y
Gorski	2004		Y	Y				Y
Goyder	2012	Y		Y	Y			
Grabowski	2008						Y	
Gray-Siracusa	2005		Y	Y		Y		
Halcomb	2009				Y			Y
Harahan	2011				Y			Y

Study (First author)	Year	Resident Satisfaction, Quality of life, Wellbeing	Resident Functional Status	Resident Clinical Outcome	Staff Outcome	Process Outcome	System/Service Use Outcome	Other
Harden	2015			Y				
Harrington	2000		Y	Y			Y	Y
Harrington	2003		Y		Y			Y
Harrington	2012						Y	Y
Harrington	2016							Y
Harvath	2008				Y		Y	
Hasson	2008				Y			
Havig	2011	Y						
Havig	2014							Y
Heath	2012				Y		Y	Y
Hedrick	2009		Y			Y		
Heeren	2014		Y	Y				
Hegeman	2005						Y	Y
Help the Aged	2007	Y						Y
Hendrix	2000						Y	
Hendrix	2001						Y	
Heponiemi	2011				Y			
Hewison	2009				Y			Y
Hickey	2005			Y				
Hodgkinson	2011			Y	Y	Y		Y
Hofmann	2003			Y				
Hollingsworth	2016			Y	Y			
Horn	2005		Y	Y			Y	
Horn	2010		Y	Y				
Hovey	2015						Y	
Hunt	2014			Y	Y			Y
Hutt	2003			Y		Y	Y	
Hutt	2008			Y		Y		
Hyde	2014				Y	Y		
Hyer	2011							Y
Ikegami	2013	Y		Y			Y	
Intrator	2011				Y			
Irvine	2013				Y			Y
Jette	2004						Y	
Jogerst	2008				Y	Y		Y
Johnson	2005	Y		Y				
Jordan	2009	Y		Y	Y			Y
Kajonius	2016	Y						

Study (First author)	Year	Resident Satisfaction, Quality of life, Wellbeing	Resident Functional Status	Resident Clinical Outcome	Staff Outcome	Process Outcome	System/Service Use Outcome	Other
Kang	2008	Y		Y				Y
Karsh	2005				Y			
Kash	2006				Y			
Kash	2010		Y		Y		Y	
Katz	2009				Y			
Katz	2011			Y		Y		
Kayser-Jones	2003	Y		Y	Y			Y
Kayser-Jones	2008			Y			Y	
Kayyali	2014							Y
Keogh	2014				Y			
Kerr	2008	Y			Y			Y
Killett	2013							
Kim	2006							Y
Kim	2009							Y
Kim	2009							Y
King	2001			Y		Y	Y	
Kinjerski	2008	Y			Y			
Kirkevold	2004			Y				
Kirkevold	2006		Y					Y
Kirkevold	2008		Y	Y				Y
Klay	2005			Y				
Klitch	2000			Y	Y			
Konetzka	2005				Y	Y		
Konetzka	2008			Y				
Kovner	2000			Y	Y		Y	
Kovner	2000						Y	
Kovner	2001	Y		Y	Y		Y	
Kramer	2002						Y	
Krichbaum	2000			Y				
Kris	2004	Y			Y			Y
Kris	2009			Y				Y
Krueger	2002				Y	Y		
Kuo	2008				Y			Y
Laakso	2001							Y
Laging	2015				Y		Y	Y
Landreville	2005			Y	Y			
Lange	2011				Y			Y
Lapane	2004	Y		Y	Y	Y	Y	Y

Study (First author)	Year	Resident Satisfaction, Quality of life, Wellbeing	Resident Functional Status	Resident Clinical Outcome	Staff Outcome	Process Outcome	System/Service Use Outcome	Other
Lapane	2007				Y			
Lapane	2011			Y			Y	
LaPorte	2007							Y
Lee	2002			Y			Y	Y
Lee	2009			Y				
Lee	2014			Y			Y	Y
Leland	2012			Y				
Lerner	2013			Y			Y	
Lerner	2014				Y		Y	Y
Lewis	2004				Y			
Li	2015				Y		Y	Y
Lin	2014			Y			Y	Y
Lisk	2012						Y	
Liu	2011				Y		Y	Y
Lucas	2007	Y			Y	Y		
Lucas	2009				Y			
Maas	2008			Y		Y		
MacEntee	2007			Y				
Manitoba Nurses' Union	2006				Y	Y		
Marcotte	2009				Y	Y		
Masterson	2004			Y	Y	Y	Y	Y
Matsudaira	2012		Y	Y	Y	Y	Y	Y
Mattingly	2015			Y	Y	Y		
Mayrhofer	2016							Y
McAiney	2008				Y		Y	
McGilton	2007				Y			
McGilton	2014				Y			Y
McGregor	2005						Y	Y
McGregor	2011						Y	
McGregor	2014						Y	
McKinney	2016				Y		Y	Y
McNulty	2006			Y	Y			
Meade	2016				Y		Y	
Meehan	2015						Y	Y
Miller	2016					Y		
Mitchell	2003			Y				
Molinari	2008							Y

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Monarch	2005			Y			Y	
Monkhouse	2003							Y
Morgan	2008			Y	Y		Y	
Moxon	2001			Y				Y
Moyle	2003				Y			
Mueller	2006							Y
Mueller	2012			Y				
Muirhead	2004							Y
National Center for Health Workforce Analyses	2004							Y
Nazir	2013				Y			
Neuman	2014			Y			Y	
Noel	2000	Y		Y	Y			
Older People's Commissioner for Wales	2014	Y			Y	Y		Y
Orellana	2014				Y			
Ottem	2004				Y	Y		Y
Painter	2000							
Painter	2000				Y			
Park	2009			Y	Y		Y	Y
Parsons	2003				Y			
Paulsen	2005							
Phillips	2000		Y		Y		Y	
Pillemer	2008				Y		Y	
Pittman	2015			Y			Y	Y
PSSRU	2011				Y			Y
Rahnfeld	2016				Y			
Rai	2012				Y			
Rantz	2014			Y			Y	
RCN	2004				Y		Y	Y
RCN	2010	Y			Y	Y		Y
RCN	2010	Y			Y	Y		
RCN	2012				Y			Y
Redfern	2002				Y			
Rico	2013				Y			
Riggs	2001				Y			

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Rondeau	2009				Y			
Rosen	2011				Y			
Ryden	2000			Y				
Sawan	2016					Y		
Schnelle	2004		Y	Y				Y
Schwendimann	2016				Y			
Scott-Cawiezell	2007					Y		
Scottish Care	2015						Y	
Scottish Care	2015				Y			Y
Scottish Care	2016				Y			Y
Scottish Care	2016				Y			
Shin	2008	Y						
Shin	2008	Y						
Shin	2012	Y		Y				Y
Shin	2013	Y	Y	Y		Y		
Shin	2014	Y	Y					
Shin	2015		Y	Y		Y		Y
Shipman	2007			Y				
Shippee	2015	Y		Y		Y		Y
Simmons	2001			Y	Y			
Simmons	2004			Y	Y			
Spector	2013			Y			Y	
Spilsbury	2011	Y	Y	Y		Y	Y	Y
Spilsbury	2015							Y
Spilsbury	2015				Y			
Stearns	2007			Y	Y		Y	
Stolee	2006					Y		Y
Suen	2006							Y
Tamura	2013			Y				
Temple	2011				Y			
Thomas	2009				Y		Y	
Thomas	2010							Y
Thomas	2014			Y			Y	
Thompson	2002				Y			
Tong	2011			Y	Y			
Trinkoff	2005				Y			
Trinkoff	2013			Y				

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Unruh	2005				Y			
Wagner	2008	Y						
Walker	2008				Y			
Wan	2006			Y				
Way	2008				Y			
Weech-Maldonado	2004			Y				
Wild	2010				Y			
Woo	2005			Y				
Xing	2013			Y			Y	
Xu	2013	Y	Y					
Yamaguchi	2016				Y			
Yassi	2004		Y		Y		Y	
Yeatts	2000				Y			
Yeh	2002	Y	Y	Y			Y	
Zhang	2004			Y				
Zhang	2005							Y
Zhang	2008	Y		Y	Y			
Zhang	2009				Y			Y
Zhang	2013		Y	Y				Y
Zimmerman	2002			Y			Y	
Zuniga	2014			Y				
Zuniga	2015							Y