SUMMARY OF INCLUDED PAPERS (36)

Authors	Participants	Aims	Methods	Key Findings	Weighting
Bowden, Dempsey, Boyd et al. 2013	60/176 FYs in Southeast Scotland deanery, UK	Preparation to deliver PC	Questionnaire and semi-structured interviews	65% find it distressing 79% felt out of their depth 67% were not well prepared to manage EOL Learn by doing 91% who felt out depth stated they had someone to approach, often seniors or PC team. Recommend further training that is: practical, case-based, increase clinical exposure with a specific placement.	M, H, H – H
Charlton & Smith 2000	1637/7694 PRHO, UK	Perceived PC skills	Questionnaire (Likert scale)	Mean 2.9 score out of 5 in anxiety in caring for dying. Mean 2.25 score out 5 in preparation. Skills gained by life experience and hands-on experience, higher scores in graduate-entry medics. Want more training in practical experience/exposure, hospice rotation and teaching on symptom control.	M, H, H – H
Gibbins, McCoubrie & Forbes 2011	21/39 FY1s in University Hospital Bristol, UK	Experience of caring for dying patients	Semi-structured interviews	FY1s described death and dying as a 'taboo' and that patients do not receive comprehensive assessments. All felt 'thrown in the deep end' and 'left to do it' alone. They learnt from their personal experience and received variable senior doctor support alongside guidance from nursing staff and PC team. Report that at medical school they do not receive enough exposure to PC, lack formal exams and do not have enough practical teaching.	H, H, H – H
Kawaguchi, Mirza, Nissim et al. 2017	10 internal medicine residents out of 60 who agreed in Toronto, Canada	Explore understanding of PC and challenges in providing it	Semi-structured interviews	All understood that PC is not limited to EOLC and that it can have a positive impact in QOL. Report a societal stigma against PC and that it is perceived as "abandoning a patient". JD prioritise other clinical presentations and do not have enough time to provide PC. Find it more challenging OOH and lacking community support information. Request: communication teaching, PC rotation, access to PC team OOH, feedback on their performance, case-based informal teaching and increased curriculum content.	H, H, H – H
Linane, Connolly, McVicker et al. 2018	110 questionnaires and 31 interviews across 2 hospitals, Galway, Ireland	Determine the frequency that JD deal with EOL and the impact on their psychological well-being	Questionnaire and interviews	All had been involved, 40% of SHOs had done so more than 10 times. 86% feel distressed from a patient death, 42% have disturbing memories and 48% are upset by a patient death. 12% scored for PTSD through the PCL-C scale. Feel unprepared and lack knowledge. 80% would like more PC training.	H, H, H, - H
Linklater 2010	79/132 FY1s in North Scotland deanery, UK	Educational needs of doctors caring for dying patients	Questionnaire	61% felt that it had a strong negative emotional impact, found it memorable experience. 2/5 felt that PC was not optimally provided. Worse OOH. 55% felt adequately supported. Sources of support: other FYs (72%), nursing colleagues (49%) and consultants/ supervisors (11%).	H, H, H – H
Morrison & Forbes 2012	7/10 FY1s who have PC rotation in Southwest and Wales deaneries, UK	Experience of PC rotation	Semi-structured interviews	PC rotation was a positive experience which increased FY1s confidence in symptom control, professionalism and BBN. Learnt by active participation and observation from doctors and PC nurses. Received support from PC seniors and MDT, which is not available on other acute hospital setting.	H, L, H – H
Murray-Brown, Curtis & Gibbins 2015	94/208 FY1s at Devon and Cornwall hospitals, UK	Experience of caring for the dying	Questionnaire	All FY1s had cared for dying patients, a ¼ had cared for more than 20 patients. 53% of FY1s do not feel prepared. 41% feel that they care for the patients by themselves, and 59% would like more support. Senior support was specialty dependent with less available in surgery. Seniors described as distancing themselves. All want more teaching on symptom control.	M, H, H – H
Price & Schofield 2015	11 CMTs in 15 hospitals in	How do junior doctors learn to provide EOLC	Semi-structured interviews	Felt daunted, scared and left alone to care for dying patients. Still recall deaths that occurred early in their career. Learnt PC by doing it.	M, H, H – H

	Wessex deanery, UK			Report support varying according to specialities, but consistently receive PC team and nursing support. Informally benefit from reflective practice and direct/indirect observation from seniors. All want further teaching, noted that PC was a low curriculum priority with lack of assessments and teaching sessions.	
Redman, Pearce, Gajebasia et al. 2017	47/355 FY1s in North Yorkshire, UK	Experience of 'Priorities for Care of the Dying person' to improve education and clinical practice	8 semi-structured group interviews 21 individual telephone/video interviews	Recognise the significance of caring for the dying and find it a valuable/ rewarding work. But some FY1S question their role/ responsibility, find it challenging and 'feel out of depth.' Experience varied according to specialities and is worse OOH. Received support from SHOs, nurses and PC staff. Benefit from reflection and debrief sessions, want a specific PC handover for OOH, practical teaching sessions and access to prescribing guidelines	H, H, H – H
Schroder, Heyland, Jiang et al. 2009	185/318 internal medicine residents at 5 sites, Canada	Attitudes, knowledge, competency and learning priorities in EOLC	Survey	2/3 of residents have cared for more than 10 patients. ¼ of residents were often/ always depressed and ½ felt guilty. Preparedness rated 6.1/ 10, higher scores were associated with previous PC rotation.	H, H, H – H
Barclay, Wyatt, Shore et al. 2003	399/590 GPs in Wales, UK	PC training that GPs received in Wales during different career stages	Questionnaire	As junior doctors, 26% did not receive any training on PC and training is static except for in syringe drivers.	H, M, L – M
Brennan, Corrigan, Archer et al. 2010	31/186 FYs in 5 hospitals in Devon and Cornwall, UK	Understand transition from student to doctor	Semi-structured interviews 17 FYs interviewed twice 10 audio diaries	Describe emotionally challenging and memorable experiences at the start of their career. All felt unprepared to deal with death and dying, felt that you gain the skills through experience on the job. Lack emotional support and question their career choice.	M, H, L – M
Centofanti, Swinton, Barefah et al. 2016	33 residents in ITU, Canada	Reflections on end-of-life education: 3 wishes project	Semi-structured interviews after death of patient	ITU dehumanises the patient. Residents feel helpless, inadequate and alone when palliating patients. The do not feel prepared and lack the knowledge, skill or experience. Useful to have framework. Benefit from intentional role modelling and reflection. Keen to improve their skills and have further training.	M, M, H – M
Crawford & Zambrano 2015	12 doctors (9 = JD) from University of Adelaide who were awarded prize for excellence in PC, Australia	Use of PC clinical elective on medical practice as a JD	Semi-structured interviews	Enjoyed the PC elective rotation, it changed from being apprehensive to gaining a sense of control. Hospice rotation prepared them by giving them practical skills and experience. Learnt transferrable skills that have improved them as doctors. Describe hospital culture of "fixing" patients. After a hospice rotation, learnt that palliation is valuable and not a failure. As a JD left to deal with PC, without any supervision. Senior doctors' support is often practical guidance, not emotional.	L, H, H – M
Ewing, Farquhar & Booth 2008	18 healthcare professionals (5 = JD), Addenbrooke's hospital, UK	Healthcare professionals perspective of PC service (both refers and providers)	Semi-structured interviews Focus groups	Junior doctors do not feel they have the skills in PC, especially in prescribing. Limited senior support during the ward round. Benefit from informal education, advice and out of hour access.	M, H, L – M
Feld & Heyse-Moore 2006	25/37 doctors who were junior doctors working at St Joesph's Hospice, UK 62 hospices UK-wide with inpatient beds	Review effectiveness of Balint model in a hospice and other support systems for JD	Semi-structured interviews of doctors at St Joesph's hospice Questionnaire to UK-wide hospices	Balint group was positive because it facilitated sharing of experiences, increase in confidence and ability to offload/ reduce sense of isolation. Challenges were in fearing judgement from others.	M, M, L – M
Gajebasia, Pearce, Redman et al. 2019	47/355 in a in one Foundation school, UK	Understand and explore FYs' experience of training and training needs in care of dying	Semi-structured group or individual interviews	Variable teaching throughout their medical education. Learnt from observation, reflection, written guidance and hospice placements. Would like further training in prescribing, communication, recognising the dying, societal perspectives and emotional resilience.	M. H, M - M

Lloyd-Williams 2002	23 SHOs in inpatient hospice, UK	Experience of SHOs working in hospices and their perception of the learning opportunities available	Questionnaire sent to all hospices that have accredited SHO training posts	22% of SHOs experience psychological distress (scored by GHQ12) Described it as a positive experience and recommend other SHOs to have a rotation in a hospice. Learnt from observing seniors, nursing staff and from their personal experience. Well supported throughout the rotation by nursing staff and had approachable seniors.	H, M, M – M
Macleod 2001	10 doctors at different career stages reflecting on death and dying, New Zealand	Doctors experience in learning to care for the dying	Phenomenological interview	Recall having strong emotional reactions after the death of a patient. However trained to high behind technical procedures, focus on curative model and distance themselves from intimate encounters. Learnt how to care for dying through experience not from medical training.	H, H, L – M
Moores, Castle, Shaw et al. 2007	All grades – 49 JHO and 63 SHOs at 3 hospitals, Leeds, UK	Doctors experience following a death of a memorable patient	Questionnaire	Moderate to severe intensity to a patient death's. Junior doctors found it the least professionally satisfying. Irrespective of grade, strategies to dealing with a disturbing death were: talking to others (90% felt able to talk to their team), socialising and seeking religious support. Some required counselling and increased team support.	M, M, L – M
Paice, Rutter, Wetherell et al. 2002	1445/2456 PRHOs 8 weeks prior to the end of their year, UK	Understanding the cause of stress in newly qualified doctors, how they cope and what interventions make it less traumatic	Postal questionnaire	All stressful incidents took place in the context of death and disease. Cope with death and dying by approaching it as problem solving and having a social support network.	H, M, L – M
Reid, Gibbins, Bloor et al. 2013	2 consultants, 4 SpRs, 6 junior doctors in University Hospital Bristol, UK	Healthcare professionals perspective on EOLC	Focus groups	Describes a hospital culture of providing active treatment and having minimal engagement with dying patients. Anxiety in prescribing and reviewing led to delays Different ward cultures and support varied according to specialties/ consultants. Challenging OOH especially without clarification of treatment goals in the documentation.	M, H, M – M
Tait & Hodges 2013	12 residents during the PC rotation, Canada	Address trainee gaps in EOLC	Semi-structured interview 1 week after a resident interviews a dying patient for an hour.	Goals of medicine do not align with PC and there is a culture to only refer to PC when there is "nothing left" at the very end. Observe from seniors that they should not get too close with their EOL patients and that there is "nothing to do" for PC patients. Junior doctors do not receive any emotional support from seniors. Request further role-modelling, observation, debriefing and feedback.	H, H, M – M
Vivekanan da-Schimt & Vernon 2013	FY1s at 2 hospitals in Sheffield, UK. Site A – integrative course (9 FY1s) Site B – lecture-based (9 FY1s)	Ethical issues that FY1s encounter during clinical practice	1-1 semi-structured interviews	PC is a key ethical issue for FY1s where they struggle with treatment dilemmas. Felt ill-prepared and unsupported by senior members of the team. Want more training that includes: junior doctors providing case-based teaching and medical students have greater experiential learning.	H, L, M – M
Weil, McIvert, Rotstein et al. 2011	52/133 residents at St Vincent's hospital, Australia	Learning needs, attitudes and confidence in practicing PC	Survey	80% of residents feel comfortable in PC. 98% would like advice on symptom management.	M, M, H – M
Wheatley – Price, Massey, Panzarella et al. 2009	71/153 residents at 5 hospitals in Canada	Preparedness of residents to discuss poor prognosis	Question survey	69% felt comfortable discussing poor prognosis, this increased with years of training. 75% felt well prepared for these consultations, this was not associated with training and was inversely related to knowledge score.	M, M, L, - M
Clayton, Butow, Waters et al. 2012	21 residents, Sydney, Australia	Evaluation of EOL communication skill training intervention	Pre and post teaching intervention questionnaire	Stress and burnout (measured via MBI scale): personal satisfaction improved compared to pre and post (36.9 to 33.9); no change in emotional exhaustion or depersonalisation. Found the training useful and would recommend further training.	L, L, L – L
Hayes, Eimear, Miptah et al. 2016	36/75 FY1s in Galway University Hospital, Ireland	New doctors views towards EOL	Questionnaire (FATCOD scale)	25% feel uncomfortable when a dying patient cries and 28% prefer to not to be present. 44% feel uncomfortable discussing death and dying.	L, M, L – L

Hohenberg & Gonski 2017	22/32 interns at St Vincent's hospital, Australia	Geriatric learning needs and learning preference	Semi-structured interviews about 3 educationally significant experiences	27% felt that PC was key area in geriatric medicine. 50% lacked senior support which limited their learning. Learnt effectively through: reflective practice, pro-activity in the workplace.	M, L, L – L
Frearson 2019	6/8 FY1s on an 8 week hospice placement, London, UK	Understand FY1s experience of a hospice placement	1-1 interviews with an interpretivist approach	Gained transferrable skills that addressed learning gaps from medical school in communication and recognising the dying. 50% reported concerns of medically de-skilling.	L, M, L - L
Malthouse 2012	12 junior doctors, Dorothy House hospice, UK	Experience of death and dying. Medical education, culture, preparation and support for PC.	Narrative inquiry about memories of death and dying	Deaths are significant memorable experiences for doctors. Some report it to be a positive experience, others describe it as important to "hide emotions" and others say that there workplace culture marginalises death. Feel unprepared for their work.	L, L, M – L
Mathew, Weil, Sleeman et al. 2019	11 junior doctosr who participated in "Second conversation" teaching intervention	Develop a workplace-based intervention to practice EOLC skills	Interviews using framework analysis	JDs benefited from real-life experience, feedback and simulation. It increased their confidence and preparation for future conversations. Report varying quality depending on seniors background in EOLC and it not being prioritised.	M, L, L – L
McCullough & McGatter 2016	10/13 junior doctors, Ninewells Hospital, Scotland	If Scottish PC guidelines improved competency and confidence in prescribing in palliative care	Quality Improvement Project questionnaire pre and post teaching session	All had cared for patients with PC needs. Before teaching intervention the doctors were most confident in prescribing anticipatory medication and least confident in prescribing syringe driver.	L, L, L – L
Mikhael, Baker & Downar 2008	1 intervention hospital with pocket card and lectures (51 residents) and 2 control hospitals with lectures only (30 and 31 residents) in Toronto, Canada	Effectiveness of pocket card to improve residents' knowledge in symptom control at EOL	10 question survey at start and end of rotation Focus interview group with intervention group	Comfort level increased in both groups but a greater increase observed in intervention arm. Found it convenient to have the information readily available.	L, L, L – L
Minor, Schroder & Heyland 2009	17/19 residents rotating through 6-month ITU rotation at Kingston General Hospital, Canada	Effectiveness and perceived value of a EOLC curriculum during ITU	Question survey pre and post curriculum survey	Observed an increase in competency in: pain management, psychological knowledge, communication and professional skills. 54% rated that PC training was very variable.	L, L, L – L
Miptah, Nawwar, Hayes et al. 2016	36/76 interns at Galway University Hospital, Ireland	New doctors feel prepared to pronounce death	Questionnaire	66% pronounced a death within working for 4 months, with 62% not feeling prepared to do this. The accessed support from: senior doctors (70%), nursing staff (25%), other junior doctors (21%) and online resources (17%).	L, M, L – L
Robinson, Danils, Jalal et al. 2016	29 FY1s at Sheffield Teaching Hospital, UK	Foundation doctor experience with EOL	Questionnaire and retrospective audit of EOL patients on HPB ward	97% cared for dying patients	L, L, L – L
Tiernan, Kearney, Lynch et al. 2001	34 newly qualified doctors at St Vincent's University Hospital, Dublin	Assess knowledge of EOL patients and evaluate teaching programme	Questionnaire at the start and end of the 6 session teaching programme	Predominately doctors are not confident in the medical management of terminally ill. Confidence and knowledge in EOLC increased after the teaching programme. Case-orientated cases and symptom control were reported as most useful.	L, L, L – L

PC = Palliative Care
EOL = End of Life
EOLC = End of life care
QOL = Quality of life
JD = Junior doctors
FY = Foundation Years
PRHO = Pre-registration House Officer
JHO = Junior house officer
SHOs = Senior house officers
CMMT = Core medical trainee
OOH = Out of hours
BBN = Breaking bad news

ITU = Intensive treatment unit
HPB = Hepatobiliary
MDT = Multi-disciplinary team