

SUMMARY OF INCLUDED PAPERS (36)

| Authors | Participants | Aims | Methods | Key Findings | Weighting |
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| 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 |

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| | 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 |

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| 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 |
| Moore, 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 |
| Vivekananda-Schmitt & 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 |

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| 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 their workplace culture marginalises death. Feel unprepared for their work. | L, L, M - L |
| Mathew, Weil, Sleeman et al. 2019 | 11 junior doctors 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