



Provision of the Evidence to Inform the Future Education, Role and Function of Health Care Assistants in Ireland

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Contents

Chapter 1	3
1.1 Overview	3
Chapter 2	6
2.1 Introduction	6
2.2 Titles and Definitions of HCAs	7
2.3 Development and growth of the HCA Role	8
2.4 Profile of HCAs	10
2.5 Roles and Impact of HCAs	11
2.6 Supervision and Delegation	19
2.7 Education and Training of HCAs	20
2.7.1 Continuing Education	22
2.8 Professional Regulation of Healthcare Assistants	23
2.9 Staffing and Skill-Mix	27
2.10 Relationships with other Health Professionals	32
2.11 Patient Experience with HCAs	33
2.12 Job Satisfaction/Intention to Leave/Turnover/Absenteeism	33
2.13 Economic Impact	35
2.14 Future Development of HCAs	36
2.15 Conclusion	39
References	42
Appendix A	50

Chapter 1

Introduction

1.1 Overview

This chapter outlines the approach used to develop a report based on the literature (including grey literature) on the education, role and function of the Health Care Assistant in Ireland and internationally. It examined evidence from the literature on:

- The role and function of the Health Care Assistant – including the provision of sample job descriptions/job specifications.
- The educational preparation – content, level, duration etc.
- The impact of Health Care Assistant skill-mix on quality of care and cost of that care.

Aims:

- As specified by the Health Service Executive Tender document, the aim was to present a report based on the literature, on the education, role and function of the Health Care Assistant in Ireland and internationally. Specific objectives of the research (as per the Tender) were to:
 - Review relevant national and international peer reviewed evidence and policy literature (including 'grey literature') in relation to health care assistants' role and function and their educational preparation.
 - Analyse the education preparation of health care assistants nationally and internationally.
 - Outline the role and the function of health care assistants in all care settings in Ireland, and internationally, including but not limited to; the UK, Netherlands, Australia, Scandinavia, New Zealand, USA and Canada.
 - Analyse the literature relating the impact of health care assistants in addition to registered nurses (skill mix) relating to the quality of care
 - Analyse the literature relating the impact of health care assistants in addition to registered nurses (skill mix) relating to the cost of care.
 - Identify the enablers and barriers to the development of health care assistant roles nationally and internationally.
- Identify the percentage ratio grade mix (Nurses: Health Care Assistants') internationally used within services.

The development of the report is guided by the principles of systematic review methodology. All databases (detailed below) were searched using relevant subject headings (e.g. MeSH, Emtree) and free text terms for title and abstract fields. Further assessment was made in terms of volume of material and relevance because of changes within and differences between health systems in order to determine a final scope. All searches were documented including the exact search strings, line-by-line retrieval numbers, the name of the loaded

databases, time and date. All references retrieved were saved as plain text file for audit purposes including their unique identifiers (if available).

We searched for primary and secondary studies, systematic reviews and the grey literature. EBSCO host Online Research Databases were used to simultaneously search relevant health and psychosocial databases. Grey literature searches were completed using a number of sources, including: Grey Matters (CADTH), Google Scholar as well as dissertations, theses, databases and databases of conference abstracts. A search was performed in the Database of Abstracts of Reviews of Effects, the NHS Economic Evaluation Database, the Health Technology Assessment Database (all available through www.crd.york.ac.uk/CRDWeb), the Cochrane Central Register of Controlled Trials and the Cochrane Database of Systematic Reviews (www.thecochranelibrary.com) and, Health Technology Assessment Database.

Covidence was used for the screening process with two researchers screening the titles independently for inclusion or exclusion of the articles sourced. Following initial screening, 404 articles were included for full text review and the research team has located 334 of these full texts which have been added to the Covidence system.

The scope of this review was very broad and this led to the inclusion of a large amount of articles for full text review. However, based on a preliminary analysis, a vast amount of the 404 articles consist of commentaries, opinion pieces, letters to the editor, editorials, and conference abstracts and thus, upon analysis, the papers identified did not consist of many high quality articles, such as RCTs, systematic reviews or meta-analysis. However, there were a small number of recent studies that used these higher quality methodological approaches.

Table 1: Search strategy

		CINAHL	MEDLINE
S1	healthcare assistant* OR health care assistant* OR nurs* assistant* OR nurs* aide* OR unregulated nurs* OR HCA* OR auxiliary nurs* OR unregulated care provider* OR licensed practical nurs* OR unlicensed assistive personnel OR enrolled nurs* OR assistants in nurs*	41570	17384
S2	role OR function OR regulation OR qualification* OR education OR registration OR job description OR job specification	1657464	6069901
S3	acute hospital* OR acute setting* OR acute care OR hospital* OR ward* OR unit*	2333410	16058289
S4	S1 AND S2 AND S3	24504	4772
S5	S4 with limitations (years 2008-2018; peer reviewed)	10929	2349

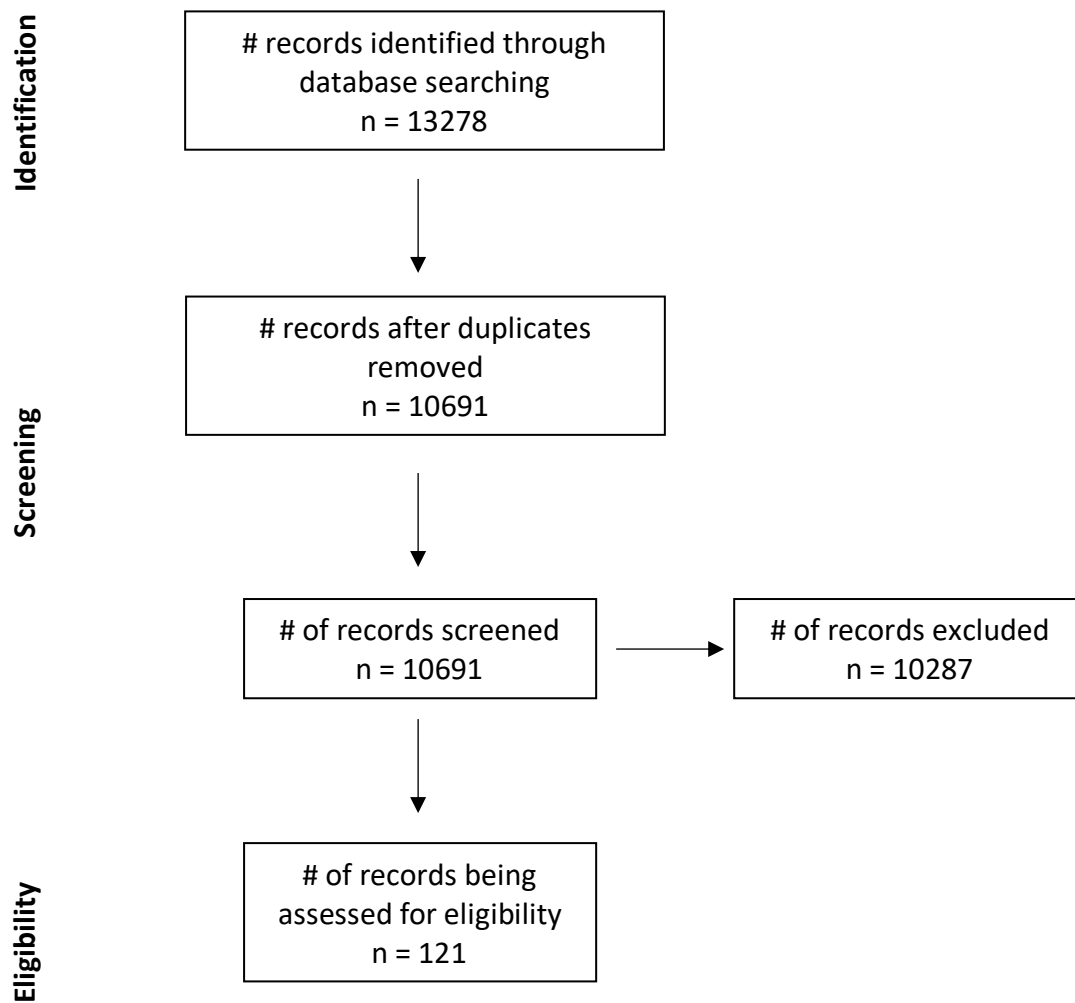


Figure 1: Preliminary PRISMA Flowchart

Chapter 2

Literature Review

2.1 Introduction

The review of the literature is outlined in 13 sections related to the themes identified in the search process. The sections include: 1) titles and definitions related to the Health Care Assistant¹ (HCA) (section 2.2); 2) the development of the HCA role (section 2.3); 3) profile of HCAs (section 2.4); 4) the roles undertaken by HCAs (section 2.5); 5) supervision and delegation of responsibilities to HCAs (section 2.6); 6) education and training (section 2.7); 7) professional regulation (section 2.8); 8) skill-mix (section 2.9); 9) relationships with other health professionals (section 2.10); 10) the patient experience (section 2.11); 11) job satisfaction and turnover (section 2.12); 12) economic impact (section 2.13) and; 13) future developments (Section 2.14). Both published and unpublished literature included in this review used a variety of approaches in describing and evaluating the role of HCAs and depending on the question being addressed by the study. These have included qualitative approaches (for example individual and focus group interviews, case studies, observation, narrative reviews (Saks et al., 2000, Kessler et al., 2010, Butler-Williams et al., 2010, Vail et al., 2011, Hasson et al., 2013, Glackin, 2016); and quantitative approaches (surveys,) (Kessler et al., 2010, Braeseke et al., 2013, Estabrooks et al., 2015a, UNISON, 2016), pre-test – post-test designs (Twigg et al., 2016, Drennan et al., 2018a). A number of studies used mixed-methods approaches and policy reports, scoping studies or systematic reviews (Kessler et al., 2010, Braeseke et al., 2013, Butler et al., 2011, Spilsbury et al., 2013, Arain et al., 2017). The studies reviewed included the role of HCAs in hospital settings, nursing homes, community settings and general practice settings² (Bosley and Dale, 2008, Brant and Leydon, 2009, Vail et al., 2011, Estabrooks et al., 2015a, Burns, 2012, Spilsbury et al., 2013).

Previous reviews have identified a paucity of strong empirical studies that explore patient, staff and organisational outcomes related to the role of the HCA (Moran et al., 2011, Braeseke et al., 2013, Hewko et al., 2015, Afzal et al., 2018). This review identified that, overall, the evidence from the majority of studies reviewed that explored the impact of HCAs was predominantly cross-sectional, observational and drew their conclusions from qualitative, survey or secondary data. In addition, the majority of studies were undertaken at single sites with relatively small samples. Apart from one major report at European level (Braeseke et al., 2013), no studies have explored the role at an international level or used data from multiple countries. Similar to systematic reviews in this area (Flodgren et al., 2017, Butler et al., 2011), we identified very few studies that used randomised controlled trials, quasi-experimental approaches, interrupted time series designs or controlled before and after studies; these are generally acknowledged as the strongest research designs which allow causality to be determined. However, studies using controlled before and after designs are beginning to be implemented in this field (Twigg et al., 2016, Drennan et al., 2018a) and this should strengthen this area of research in the future.

¹ It is acknowledged that there are a number of titles to describe the role; however, for the purpose of the review, Healthcare Assistant is used throughout.

² On reviewing the literature, the employment of HCAs in general practice was limited to the UK with a call for further research in this area (Bosely and Dale 2008; Burns 2012).

2.2 Titles and Definitions of HCAs

A number of titles are used in the literature to describe the role of assistants, employed for different roles and/or responsibilities within the staffing mix. These include: healthcare assistants, health care support workers, nursing assistants, nursing auxiliaries, clinical support workers, assistant practitioners, medical carers, health auxiliary workers, practical nurses, nursing assistive personnel, unregulated care providers, certified nursing assistants, continuing care assistants, nurses' aides, assistants in nursing and healthcare assistants (Moran et al., 2011, Baughman and Smith, 2012, Hasson et al., 2013, Braeseke et al., 2013, Cavendish, 2013, Hewko et al., 2015, Twigg et al., 2016, Afzal et al., 2018, Sarre et al., 2018)³. A number of countries have the role associated with HCAs using a multitude of titles. The array of titles related to the HCA role in England led Cavendish (2013) to recommend that there be a single title aligned to the post: Nursing Assistant. The rationale behind this change of title was to acknowledge that HCAs are part of the nursing team. Scotland has introduced the single job title of Healthcare Support Worker, whereas in Ireland, the title Healthcare Assistant is used (Glackin, 2016). Healthcare Assistant is the most widely used term identified in a number of reports and studies (Braeseke et al., 2013). A number of countries also use the term unregulated or non-registered care providers to identify those who work in the provision of direct healthcare but are not registered or regulated in the country in which they practice; this is evident in Canada (Afzal et al., 2018), Ireland (Glackin, 2016), the UK (Griffiths and Robinson, 2010) and Australia (Twigg et al., 2016). In the US, HCAs are predominantly identified as Certified Nursing Assistants (CNAs).

Aligned to the multitude of titles aligned to the role, there are a number of definitions. At a European level, Braeseke et al. (2013: 4) define the HCA or similar roles as 'care staff below the qualification level of "nurses responsible for general care" according to the Directive 2005/36/EC'⁴. Others provide more comprehensive definitions of the role. For example, in a review of the role and function of support workers in health in the UK, Saks et al. (2000: 21). defined the role as:

A worker who provides face-to-face care or support of a personal or confidential nature to service users in clinical or therapeutic settings, community facilities or domiciliary settings, but who does not hold qualifications accredited by a professional association and is not formally regulated by a statutory body.

NHS Scotland (2010: 9, in defining the role of the Healthcare Support Worker (HCSW) stated:

The HCSW has the awareness and ability to address the basic care needs of individual patients/ clients under the direction and supervision of healthcare professionals. They support the multidisciplinary team in the delivery of high quality care.

NHS Education for Scotland (2010: 9) also provides a definition for a senior HCA:

³ Hewko et al. (2015) provide a comprehensive list of titles assigned to roles similar to the HCA role.

⁴ At least three years of study or 4,600 hours of theoretical and clinical training, Article 31, 3. Directive 2005/36/EC.

The Senior HCSW can evidence previous experience and/or consolidation of practice as a HCSW or can evidence an appropriate level of knowledge. They will have the understanding and ability to deliver delegated care under the direction and supervision of healthcare professionals and support the multidisciplinary team in the delivery of high quality care.

The International Standard Classification of Occupations (ISCO), provided by the International Labour Organisation (ILO) defines healthcare assistants (5321) as follows:

Health care assistants provide direct personal care and assistance with activities of daily living to patients and residents in a variety of health care settings such as hospitals, clinics and residential nursing care facilities. They generally work in implementation of established care plans and practices, and under the direct supervision of medical, nursing or other health professionals or associate professionals.

In Ireland, The Department of Health and Children⁵ (DoHC., 2001), Ireland have defined the role of the HCA as:

... to assist nursing/midwifery staff in the delivery of patient care under the direction and supervision of the Clinical Nurse Manager 2/ 1, Staff Nurses/ Midwives/ Public Health Nurses and community Registered General Nurse as appropriate. (DoHC, 2001: 25).

Although there are an array of titles, aligned to the broad roles of a healthcare assistant, there are a number of commonalities in definitions aligned to the position; these include, the provision of predominantly direct, fundamental care to patients in variety of settings and that they work under the supervision of other healthcare professionals, predominantly registered nurses (RNs).

2.3 Development and growth of the HCA Role

Internationally, it has been identified that HCA roles are growing exponentially (Hewko et al., 2015). The development and growth of the HCA role has been linked to a number of drivers, including: changes in the education of nursing students, the impact of legislation on the working conditions of the healthcare workforce and the changing demographics and healthcare needs of populations at a global level. In addition, the changing roles of other groups of healthcare professionals had also been highlighted as a factor in the development of the role.

Traditionally, nursing students would have provided a substantial proportion of direct care to patients during the apprenticeship model of training (Fretwell, 1983, Burnard and Chapman, 1990, French, 1992). Between 1977 and 1989 three European Council directives, although primarily dealing with the freedom of movement within the EU and number of hours allocated to nurse education and training, were to have a major influence on the education and training of nursing students. The EEC directive 89/595/EEC (Council Directive, 1989) lead to

⁵ Now referred to as the Department of Health

fundamental changes in the theoretical input into nurse education. The most significant change of the new directive was that the amount of time allocated to theoretical input in the course was now extended from twenty-six weeks to forty weeks. This recommendation had the effect of shifting the education of nurses in the European Union from one dominated by service provision to one where education was predominant. In effect, students undertaking a course leading to a general nurse qualification would now spend more time in the classroom and less time in the clinical areas. In addition, in the clinical area, the profile of the pre-registration nurse was one of student as opposed to a direct care provider. This had implications both for the organisation of the education services and the needs of the clinical area which previously relied heavily on nursing students for the maintenance of staffing levels. The HCA role was seen as a replacement for the support that had traditionally been provided by nursing students (Kessler et al., 2010).

Aligned to the changes in nurse education driving the growth in the numbers of HCAs providing patient care, the changing role of RNs has also been cited as a factor. The European Working Time Directive (EWTD, 2003/88/EC), which has impacted on, and reduced, the working hours of doctors resulted in the transfer of tasks traditionally in the medical domain, such as cannulation and the intravenous administration of antibiotics, to registered nurses; this subsequently led to the transfer of aspects of patient care that were traditionally in the nursing domain to healthcare assistants (Saks and Allsop, 2007, Kessler et al., 2010). In Ireland, the transfer of tasks from non-consultant doctors to nurses, which include intravenous cannulation, phlebotomy, first-dose intravenous drug administration and, nurse led delegated discharge of patients (The Haddington Road Agreement, 2013) may also have an impact on the transfer of roles traditionally in the domain of RNs to HCAs. In addition, the increasing specialisation of RNs as both clinical nurse specialists and advanced practitioners and the reduction in time that RNs spend at the bedside has also led to the growth of the HCA workforce (Moran et al., 2011, Kessler et al., 2010, Cavendish, 2013). The Cavendish Review (Cavendish, 2013) highlighted that the time the RN has available at the bedside has decreased, in particular, due to the necessity of recording patient care; this is especially related to the higher patient turnover rates seen in the acute hospital sector and had resulted in an added paperwork and associated workloads.

The projected shortfall in professionally qualified healthcare staff is also identified as a reason for the growth in the numbers of HCAs employed within the health services (Moran et al., 2011) as are moves to reduce costs associated with employing RNs (Aiken et al., 2017). This can be seen in the UK where a new grade of caregiver, the nursing associate, employed at a level below the RN, has been introduced (Gummer, 2015). Kessler et al. (2010: 21) highlighted that roles, such as that of the HCA, have become 'deeply embedded in the nursing workforce' as a result of changes in nurse education, the extension and expansion of roles in RNs, increasing complexity in patient care and the modernisation of the delivery of healthcare. These changes, as Kessler et al. (2010: 21) further state, have seen the traditional role of the RN in patient care becoming 'increasingly challenged'.

The changing demographics in many developed countries and the increasing need to provide care for a growing cohort of older people have also led to changes in workforce configuration and the need to examine different models of care delivery (Moran et al., 2011, Baughman and Smith 2012, Braeseke et al., 2013, Afzal et al., 2018). Aligned to this changing

demographic is the projected shortage of qualified nurses to meet the health needs of an ageing population. This has resulted in the increase in the use of healthcare assistants internationally to provide care for this cohort of patients, especially with the projected growth in age-related dementias, the requirement for long-term residential care and the provision of care of chronic conditions in the patient's own home (Kessler et al. 2010, Spilsbury et al. 2013, Estabrooks et al. 2015a, Hewko et al. 2015, Twigg et al. 2016, Sarre et al. 2018). The US Bureau of Labor projects that between the years 2016 and 2026 the need for HCAs is projected to grow by 11%; this is greater than the average growth for all other occupations and is, in particular, related to the care needs of an ageing population. The growth in care provision by HCAs, has been highlighted in both the US and Canada (Baughman and Smith, 2012, Lockard and Wolf, 2012, Estabrooks et al., 2015a). In the US, it is estimated that of those who work in the provision of direct care, 49% are employed as nursing aides or attendants (Baughman & Smith, 2012). The growth in HCAs providing direct patient care is also evidenced in Canada where the vast majority of care provided to nursing home residents is now provided by HCAs; it is reported that 80% of direct care is provided to residents in nursing homes by unregulated care workers (Estabrooks et al., 2015a, Estabrooks et al., 2015b). The increasing complexity of patient care needs in both acute and community settings is also another challenge leading to the growth in the numbers of HCAs required to deliver face-to-face healthcare (Moran et al., 2010, Spilsbury et al., 2013).

2.4 Profile of HCAs

A number of studies have reported on the profile of the HCA workforce internationally. One of the issues highlighted in the literature was that, due to the unregulated nature of the workforce, it is problematic in obtaining accurate and reliable information on the profile of those working as HCAs (Hewko et al., 2015, Estabrooks et al., 2015a, Afzal et al., 2018). Of those that do provide information on the profile of HCAs, the majority of studies provide estimates; however, there are a number of representative surveys that have measured the demographic and educational profile of HCAs.

The Cavendish Review (2013) estimated that there are approximately 1.3 million unregistered staff in the UK's National Health Service (NHS) and social care services delivering hand-on care in a variety of healthcare settings. This consists of approximately 106,500 working in health and 1.225 million in social care. The majority of HCAs in the health sector work in acute settings with social care support workers predominantly providing care in a person's home. Spilsbury et al. (2013) reported that the number of HCAs working in the community had increased by 110% over a ten year period (1996 to 2006) whereas the number of qualified district nurses had fallen by 21% in the same period. Recent UK workforce statistics have identified that there were 356,208 clinical support staff (headcount) in post in the NHS, an increase of 6,155 (1.8%) since September 2015; this equated to 305,280 FTE support staff, an increase of 5,841 (2%) since September 2015 (HSIC, 2016).

As highlighted, due to the predominantly unregulated nature of the HCA workforce, it is difficult accessing reliable data on the demographic and educational profile of HCAs. Of the studies that do report on the profile of HCAs, the general pattern is that the HCA workforce is predominantly female, work part-time, are relatively older than the average age of other healthcare occupations and have relatively lower levels of education (Saks and Allsop, 2007,

Smith and Baughman, 2007, Khatutsky et al., 2010, Kessler et al., 2010, Sengupta et al., 2010, Choi and Johantgen, 2012, Cavendish, 2013, Spilsbury et al., 2013, Estabrooks et al., 2015a, UNISON, 2016). A number of studies report on the profile of HCAs in comparison to other healthcare occupations, principally RNs. Kessler et al. (2010: 14), in a mixed-methods study in the UK, reported that HCAs differed from other members of the nursing workforce in that they were generally older women 'embedded' within the community in which the health setting in which they are employed is situated; they also had a number of previous jobs in a variety of settings prior to taking up the post of HCA. This was similar to the profile of HCAs in rural areas of Canada; however, in urban areas, the majority of unregulated care providers were not born in the country and did not speak English as their first language (Estabrooks et al., 2015a). This was indicative of a country increasingly relying on an immigrant workforce to provide healthcare as a population ages. As Kessler et al. (2010) highlighted, HCAs are generally older than other healthcare occupations. The Cavendish Review (Cavendish, 2013) also highlighted that the average age of HCAs working in the health sector was approximately 45 years of age and that the educational level of HCAs was variable. This level of maturity of HCAs was found to be beneficial in community settings as it provided levels of stability and psychological support to the community nursing team (Spilsbury et al., 2013).

The occupational mobility of HCAs was explored at a European level, with variability in the mobility of HCAs who work in various countries. Due to a lack of standardisation of educational qualifications it was reported that mobility of HCAs out of the country in which they trained was limited. The country in Europe with the highest outward mobility of HCAs was the Czech Republic; HCAs predominantly moved to other European countries as well as the US and the Middle East. Countries including Belgium, Switzerland and the UK reported that they did have a proportion of staff working as HCAs from other European and non-European states; however, apart from Switzerland (22% of HCAs came from outside the country) there were no reliable figures on the proportion of staff from one European country working in other countries (Braeseke et al., 2013).

2.5 Roles and Impact of HCAs

A clear definition of the role of HCAs in terms of what they do was inconsistent across much of the literature reviewed with number of studies and reviews identifying that the role of the HCA is varied and context specific (Kessler et al., 2010, Spilsbury et al., 2013, Hewko et al., 2015, Glackin, 2016, Afzal et al., 2018) (see table 2.1 for a list of roles). An example of this is provided regarding HCAs working in community (Spilsbury et al., 2013) where it was found that the role was dictated by the particular setting in which the HCA was employed and reactive to issues such as workload shortages and organisational change. In a thematic review of the literature, Moran et al. (2010) also reported that the development of the role of HCAs was highly context dependent and consisted of a number of factors including, setting staffing grades and levels, patient dependency levels as well as the nature of tasks that were delegated to HCAs by professionally qualified staff. There is a consensus in the literature that the lack of a definition of the role of HCAs has led to inconsistency in how the role is deployed and understood (Spilsbury et al., 2013, Hewko et al., 2015). Spilsbury et al. (2013) concluded that the 'ad hoc' development of the HCA roles had led to differences in how the post is understood and utilised in practice. In effect, the role appeared to develop and be defined according to the changing pressures of service need rather than through any strategic process.

The diversity of roles undertaken by HCAs was also highlighted in the Cavendish Review (Cavendish, 2013). This review found that there was huge variability across the UK in pay, job training, job titles (60 separate job titles were identified) and job descriptions. Job descriptions in particular were highlighted in the Review as being variable with these being developed individually at local level and varied within employment settings. This is similar to the situation in Ireland where it has been reported that job descriptions were ambiguous and this resulted in the inconsistency in the utilisation of tasks and roles undertaken by HCAs (Glackin, 2016). Glackin (2016: 175) further reported that the generic job description that applies to HCAs in Ireland 'is both vague and nonspecific and does little to negate the variability in the application of the role.' Following a scoping review of the literature; Hewko et al. (2015: 10) highlighted that the diversity of roles and tasks undertaken by HCA made 'describing "the" role of a HCA near impossible' and further concluded that the HCA workforce, due to its diversity of roles, was 'invisible and ubiquitous' (Hewko et al., 2015: 12).

In relation to the tasks undertaken by HCAs, it is evident that they are multifaceted and expanding. The *SANCO* report (Braeseke et al., 2013), a comprehensive account of the education, training and work situation of HCAs in fifteen European countries, provides an extensive overview of the roles of HCAs. Core to the roles outlined are the provision of fundamental care to patients (for example: nutrition, mobilisation, hygiene comfort, toileting), social and emotional support of patients and administrative processes. Other extended activities, those beyond the provision of fundamental care outlined in job descriptions, included: sterilisation of instruments, administration of medications, vital sign observations, and wound dressings. Of all the countries surveyed, the UK, in addition to the provision of fundamental care, provides the widest range of tasks that may be undertaken by HCAs and includes activities such as venepuncture, ECG recording, spirometry and lung function testing (Braeseke et al., 2013).

Of all the roles outlined in the literature reviewed, the main role of HCAs is the provision of fundamental care to patients (e.g. activities of daily living), transportation of patients, psychological support and housekeeping duties (Waldie, 2010, Lindquist et al., 2012, Suter et al., 2014, Knopp-Sihota et al., 2015, Afzal et al., 2018). HCAs are increasingly becoming involved in the greater provision of bedside care; an area that was previously the preserve of the RN (Bach et al., 2008, Spilsbury et al., 2013, Glackin, 2016). It has been reported that HCAs provide 60% of the direct and indirect care to patients, twice that of RNs with the majority of HCA work delivered at the bedside in the provision of fundamental care (Kessler et al., 2010). In addition, as patient care has evolved in its complexity, tasks traditionally under the remit of RNs have been transferred to HCAs with subsequent delegation and supervision by registered healthcare professionals (Afzal et al., 2018). These tasks include: wound care, catheterisation and, blood glucose monitoring (Waldie, 2010, Lindquist et al., 2012, Braeseke et al., 2013, Afzal et al., 2018); it is generally highlighted in the literature that these tasks have been delegated to the HCA by a nurse or other healthcare professional and are principally supervised by RNs (Braeseke et al., 2013, Afzal et al., 2018). In relation to the expansion of these roles, Kessler et al. (2010: 136) highlighted the evolving role of the HCA as a 'bedside technician'; this 'technician', as well as delivering fundamental care, her/his role has expanded into more technical tasks that were previously under the remit of RNs. The evolving roles of HCAs was also highlighted in the Cavendish Review (Cavendish, 2013: 18); the review divided the roles of HCAs into 'routine tasks' and 'advanced tasks'. Routine tasks included:

making beds, helping patients with nutrition, cleansing and dressing, blood glucose monitoring, vital sign observations, simple wound dressings and transporting patients. Advanced tasks were identified as those that were traditionally under the remit of RNs, but as this cohort undertook further advanced roles, HCAs were taking over procedures such as female catheterisation, intravenous cannulation, complex wound care, infusion feeding, preparation and administration of medications (including injections), ECG recordings, phlebotomy and care planning. Although the Cavendish Review reported that HCAs were undertaking both routine and advanced tasks, it was reported that HCAs, in some cases, felt unprepared to undertake some tasks as well as feeling pressurised to do so, especially during periods of staff shortages. It has also been identified that HCAs report a reluctance in taking on complex tasks such as the administration of medications from nursing staff due to a lack of training or insufficient advice on their levels of accountability for these tasks (Kaasalainen et al., 2014, Afzal et al., 2018). To inform this aspect of the HCA role, Spilsbury *et al.* (2016: 2) in the UK undertook an evidence review on the 'the administration of medicines in care homes (with nursing) by care assistants focusing specifically on safety, training needs and processes'. In conclusion, the review identified that:

Whilst the RN assumes responsibility for the management and administration of medicines to residents in care homes with nursing, the RN can delegate this to a care assistant but must be confident that the care assistant is competent to take on a delegated task (Spilsbury *et al.* 2016: 9).

The outcomes from the review were used to develop evidence based guidance for the administration of medicines in care homes for older people by care assistants which highlighted their role in relation to administration, training and responsibilities (Department of Health/University of Leeds 2016).

A survey of 2,300 HCAs by the trade union UNISON (2016) in the UK also reported that the roles of HCAs have changed with a move towards more technical tasks; however, the majority of respondents reported that they did not feel suitably qualified to undertake a number of these roles with variability reported between what employers and HCAs saw as appropriate tasks. This variability in roles and tasks undertaken by HCAs has also been reported in Ireland where it was reported that some HCAs perceived that they were working beyond their original scope of practice whereas others reported that their skills were underutilised and that there was little scope for the development of the role (Glackin, 2016).

A survey by UNISON (2016) in the UK of HCAs examined the frequency in which they carried out tasks in their role. The most frequently reported tasks that were carried out a few times a day of every week included areas related to the provision of fundamental care such as bathing a patient, feeding a patient, bed making and, keeping stores stocked. In addition, a significant proportion of HCAs were involved in more technical tasks such as monitoring and recording a patient's vital signs and blood glucose and being involved in the application of a simple dressing. Tasks that HCAs were infrequently involved in, although they did occur, included undertaking an ECG, phlebotomy and cannulation.

A number of authors have attempted to classify the role of the HCA under a number of heading; including the tasks involved (Hewko et al., 2015, Afzal et al., 2018) the role in relation

to other healthcare professions (Kessler et al., 2010) and how the role is operationalised in clinical practice (Moran et al., 2011). Moran et al. (2011) in a thematic review of the literature on the roles of support workers in health and social care, identified four domains related to their role: direct care, indirect care, administration and facilitation. Direct care related to those aspects of the role that have direct patient contact. Indirect care was identified as roles that relate to preparing the environment for clinical procedures, transporting patients and providing support to relatives. Administrative roles relate to activities such as answering telephone calls and making appointments for patients and relatives. Facilitation refers to 'informal monitoring or assessment of patient change (Moran et al., 2011: 1193). Underpinning these domains, four core attributes were also identified including: helper/enabler, a companion, a facilitator and a monitor. Hewko et al. (2015: 10) further classified the role of the HCA under five headings: patient-contact, non-patient contact, clerical/administrative roles and, 'tasks similar to Registered Nurses (RNs)'. Kessler et al. (2010: 13) also classified the role of HCAs under a number of headings, including: a relief, a substitute, an apprentice and as a co-producer:

The [HCA] role is seen as a vehicle for pursuing policy goals: as a relief – removing routine tasks from nurses; as a substitute – replacing nurses in the provision of some core nursing tasks; as an apprentice – providing a future supply of nurses; and as a co-producer – enhancing care quality by bringing to bear distinctive capabilities.

The theme of the HCA as providing a 'relief' for nursing staff has also been identified in a number of studies; this relief from care delivery, traditionally associated with nursing roles, is generally associated with nurses taking on tasks traditionally undertaken by doctors but is now seen as HCAs relieving RNs from tasks that were traditionally under their remit (Kessler et al., 2010, Cavendish, 2013). The areas of patient care undertaken by HCAs that were traditionally under the domain of RNs are generally associated with direct and indirect aspects of care. Direct aspects include fundamental, care such as the provision of hygiene and mobilisation with indirect tasks associated with administrative work (Kessler et al., 2010). In Australia a similar relief role has been outlined by Assistants in Nursing (AINs) (similar in role to HCAs) (Twigg et al., 2016). The introduction of AIN post to the acute sector was envisaged as being 'complementary rather than a substitutive role' (p. 190); that is, they were additional to normal ward staffing rather than used as a replacement⁶. The post is under the direction of an RN and, as in other countries, the role is predominantly involved in assisting patients with activities of daily living as well as blood glucose monitoring and vital signs observations. There is no regulation, standardisation of education or registration associated with this post, unlike the RN and EN grades in the Australian system (Duffield et al., 2014). In comparison to the substitutive model, the supportive or relief model of HCA staffing maintains the number of nursing hours provided to patient care by RNs (Twigg et al., 2016).

HCAs are also used as substitutions; that is they are used as a replacement for RNs (Saks and Allsop, 2007, Kessler et al., 2010, Twigg et al., 2016). The main reasons highlighted in the literature for HCAs to be used as substitutes for RNs is as a cost saving measure as well as problems in the recruitment of RNs (Saks and Allsop, 2007). However, no evidence was identified in this review of this occurring or the outcomes associated with substitution.

⁶ It is of note that the system in Australia has both RNs and ENs as part of the ward staffing complement.

The final two elements of Kessler et al.'s (2010) classification of the role of HCAs focus on that of being an apprentice: the role is viewed as a stepping stone to RN education and training and; as a co-producer: this relates to the positive impact the role has on patient care but there is a sense that the contribution to patient care or an awareness of the role by patients is unclear. The substitution of RN roles by HCAs has also been identified in community settings and, as Spilsbury et al. (2013: 7) highlighted, raises issues of 'boundaries and responsibilities of assistants, levels of supervision and regulation.'

Another aspect of the role highlighted in the literature is that of a support. Kessler et al. (2010) outlined that the support function of the role varied according to the perception of the stakeholder: RNs viewed the role as a support to nursing staff and this aspect of the HCA role was viewed by this cohort as being of most value; the ward manager viewed the role as a support to the team, whereas HCAs perceived their role as one of support to the patient with an emphasis on empathy. One central aspect articulated by all stakeholders was the caring aspect of the role.

Another way the HCA role is defined is in terms of comparing the post to other groups providing patient care; in particular RNs. A number of studies have reported on the comparison of roles between RNs and HCAs. Glackin (2016: 176) reported that, following a series of individual and one-to-one interviews, the results were 'inconclusive', with many of the descriptions of the HCA and RN role overlapping. The Cavendish Review (2013: 19) did attempt to delineate the boundaries between RNs and HCAs:

There are two main differences between the registered nurse and the HCA. Only the registered nurse can give the full range of prescription only medication; and HCAs are under the supervision of the nurse. The nurse's role is to assess, plan, implement and evaluate the care; and to delegate tasks to the HCA within that framework.

A number of studies have highlighted that, even though the roles of HCAs are expanding, there are reported barriers in how the role is operationalised. In a multiple methods study including interviews, case studies, focus groups, action research and surveys, Kessler et al. (2010) concluded that there were a number of limitations in how the role of HCAs was utilised. They highlighted that there was limited strategic use of the HCA with an emphasis on using the role 'as a substitute within the context of skill mix reviews and the pursuit of cost efficiencies'; there was also a perception that there was a lack of recognition of the new tasks being undertaken by HCAs and that the post was viewed, by some, as cheap labour (p.14). The consequence of this approach was a lack of evidence based innovative approaches in how the post could be used effectively in the delivery of healthcare. This was a similar finding to that outlined in the Cavendish Review (2013: 6), which reported that, even though HCAs consisted of a third of the caring workforce in the NHS, they felt 'undervalued and overlooked'. This sense of a lack of value and an underutilisation of the role was also highlighted amongst HCAs working in Ireland (Glackin, 2016).

Another barrier in the development of the HCA role that is discussed in the literature is the occupational boundaries in which HCAs are required to work with a variability reported in the extent to which the roles of HCAs are defined and delineated compared to other healthcare

professionals (Brant and Leydon, 2009, Kessler et al., 2010, Vail et al., 2011, Spilsbury et al., 2013, Cavendish, 2013, Glackin, 2016). Glackin (2016), following a series of interviews with stakeholders in the Irish healthcare system, identified that the role of the HCA was multifaceted and, in a number of cases, expanded beyond traditional boundaries that would be expected within the role. Spilsbury et al. (2013), in examining the role of HCAs in community settings from the perspective of senior managers, also found that many were working beyond their grade due to local exigencies and needs. As well as working beyond the boundaries for which HCAs were prepared, it has also been highlighted that there were barriers to HCAs being able to practice at a level for which they were educated (Glackin, 2016). The research reviewed highlighted that issues in relation to scope of working occurred due to 'poorly defined occupational boundaries' (Glackin, 2016: 174); these poorly defined boundaries were principally between RNs and HCAs; however, these issues were also related to boundaries with other grades (Kessler et al., 2010, Glackin, 2016). One of the reasons postulated for these poorly defined boundaries was a lack of a specific or structured job description for HCAs and a lack of understanding amongst RNs on what constitutes the role of the HCA (Kessler et al., 2010, Spilsbury et al., 2013, Glackin, 2016). There were also reports of tensions over role boundaries, accountability, delivery of care and respect for the role of HCAs (Spilsbury and Meyer, 2005, Brant and Leydon, 2009, Kessler et al., 2010, Cavendish, 2013, Glackin, 2016, Afzal et al., 2018). One of the predominant concerns amongst other healthcare professionals over the HCA post was in terms of accountability; these concerns related to the extent to which tasks could be delegated to HCAs as well as the lack of 'statutory regulation' of the role (Kessler et al., 2010: 134).

A further area discussed in the literature that has been identified as an issue in the role of HCAs is related to the scope of practice of the occupational group. In a review of the literature related to unregulated care providers (UCPs) in Canada, Afzal et al. (2018) concluded that there is a lack of clearly defined scope of practice, that the roles performed were becoming more complex; however, these new roles were, in some cases unsupported and this lack of support had implications for patient safety. Twigg et al. (2016), in a study that explored the introduction of HCAs on wards in Australia to support RNs, further reported that the increase on adverse patient outcomes on the wards were they were introduced compared to wards where they were not employed were somewhat attributable to poorly defined scopes of practice and a lack of policy directives. HCAs' scope of practice can also be determined by the setting in which they are employed (Arain et al., 2017). Hewko et al. (2015), following a scoping review of the literature, identified that HCAs that work in a patient's home setting have a poorly defined scope of practice compared to those that work in a hospital or nursing home settings. However, strong delineation of role boundaries between HCAs and RNs and job descriptions for HCAs have been identified in those HCAs that are employed in GP practices (Vail et al., 2011). In community settings, Arain et al. (2017) reported that HCAs in supportive living settings had a broader scope of practice in terms of medication assistance than those HCAs working in long-term settings. Furthermore, HCAs working in community settings have been identified as having a wide scope of practice including the provision of both fundamental and advanced care as well as providing social support such as assisting with shopping; however, it is reported that the level of supervision of HCAs in these settings, can, at times be minimal due an increase in HCAs providing care that previously was under the domain of community or district nurses (Cavendish, 2013).

Another aspect of the role that arises in the literature is that HCAs work under the supervision of another health professional (Hasson et al., 2013, Braeseke et al., 2013, Cavendish, 2013, Glackin, 2016, UNISON, 2016). This relationship is highlighted in the *SANCO* report (Braeseke et al., 2013: 66):

Since the HCA training in most of the participating countries is not oriented towards an independent occupation, healthcare assistants ... regularly work under the supervision of higher qualified clinical staff ... HCAs carry out delegated nursing tasks, which were planned, supervised and reviewed by registered nurses.

The vast majority of HCAs surveyed in the UK reported that they do so under the supervision of an RN (UNISON, 2016) with half reporting that the supervision provided was good or excellent and half reporting that it was poor or fair. However, other studies have reported that HCAs, especially those working in community settings, are increasingly working alone with a subsequent lack of supervision (Glackin, 2016).

Evidence on the impact of the role of HCAs on outcomes is relatively limited. Spilsbury et al. (2011), in a systematic review of the relationship between nurse staffing and the quality of care in nursing homes, identified a number of studies that particularly explored the association between HCA staffing, including numbers of HCAs, HCA hours per resident day, the ratio of HCAs to residents and time spent by HCAs on nursing care. Spilsbury et al. (2011: 746) concluded that the evidence base for the association between HCA staffing and quality indicators was mixed; in two studies, positive relationships were identified for 'quality of care deficiencies, quality of life deficiencies, resident satisfaction, fracture occurrence and infections'. No associations were identified for HCA staffing and the quality indicators of catheterization, hospitalisation, administration of psychoactive drugs, pain, contractures, urinary tract infections and adequacy of nursing care. There is limited evidence, predominantly qualitative, that the role adds flexibility and more efficient use of resources in meeting caseloads in community settings; in addition, they were found to be valuable in the provision of fundamental care thus allowing RNs to focus on the more complex healthcare requirements of patients. Those studies that show the effective use of the role in practice describe a partnership approach between RNs and HCAs in community settings in relation to medicines support for low-risk clients living in the community (Lee et al., 2015) and the provision of evidence based education to people at risk of cardiovascular disease (Allen et al., 2014). In both of these studies HCAs worked closely with, and were delegated to, by RNs.

Table 2.1. List of Healthcare Assistant Tasks and Activities

Direct Tasks	Indirect Tasks	Pastoral Care	Ward/Team-Centred	Technical/Specialist Care	
				Invasive	Non-Invasive
<p>Patient care that involves direct physical contact of a non-technical or non-specialist nature</p> <ul style="list-style-type: none"> • Addressing patient’s basic needs (eating, sleep, physical comfort) • Daily living support (dressing, undressing, toileting, shaving, administer eye drops etc.) • Assisting with hygiene needs (e.g. oral, bathing, nail care etc.) • Ambulation/Mobility and Transfers (assist in use of transfer devices such as Hoyer Lift or Transfer Board) • Providing transportation or escorting patients • Physical exercise (e.g., Range of Motion (ROM) exercises as outlined in plan of care) 	<p>Patient care that does not involve physical contact and is of a non-technical or non-specialist nature</p> <ul style="list-style-type: none"> • Housekeeping activities (making beds, serving meals, cleaning, laundry, etc.) • Emptying/cleaning commode, urinal or bedpan • Shopping • Banking/Mailing cheques • Menu and meal planning • Monitor/record patient observations • Medication reminders to patient • Simple repairs to clothing or linens and maintenance of footwear 	<p>Providing general support to the patient or relative that is unrelated to their physical condition</p> <ul style="list-style-type: none"> • Reassuring patients/relatives • Helping confused patients • Dealing with patients’ non-medical queries • Educational and recreational assistance • Emotional support (personal interaction for socially isolated persons) • Nutritional advice 	<p>Tasks that are one step removed from direct patient care, usually occurring away from the bedside</p> <ul style="list-style-type: none"> • Answering the phone • Keeping stores stocked • Handover and updating members of staff • Collecting TTOs • Testing specimens • Record keeping • Charting and reporting care delivery • Entry of outcomes data • Assisting with discharge/admissions/ theatre check lists • Make care plans • Any other clerical duties 	<p>Clinical/medical tasks and procedures that require training to perform and are of a technical or specialist nature</p> <p>Invasive</p> <ul style="list-style-type: none"> • Taking blood • Catheterisation • Cannulation • Bowel Care (assisting person with using a suppository or enema) • Taking blood (to stable patients only) • Ear syringing • Upper airway suctioning • Venepuncture 	<p>Non-Invasive</p> <ul style="list-style-type: none"> • Blood glucose monitoring • Dressings/wound care/compression bandaging • ECGs • Ostomy bag care • PEG Tube feeding • Ventilator and tracheostomy care (cleaning around the stoma/cannula or suctioning a tracheostomy) • Assist with oxygen administration • Input of fluids and foods • Record/monitor vital signs (pulse, respiratory rate, temperature, etc.) • Taking specimens (urine, faeces, sputum) • Basic chest (lung) auscultation with a stethoscope • Performing visual assistance tasks)

(Adapted from: Kessler 2010; Spilsbury et al. 2013; Hewko et al. 2015; Glackin 2016; Afzal et al. 2018)

2.6 Supervision and Delegation

One of the central themes in the literature is the delegation and supervision of tasks from RNs to HCAs. Recognising the increase in the delegation of tasks from one grade to another, a number of regulatory and professional bodies have incorporated guidance on this aspect of the RN's role into scope of practice and code of conduct guidelines (NMBI, 2015, NMC, 2018, RCN, 2015). In Ireland, The Nursing and Midwifery Board of Ireland (NMBI) in guidance document entitled *Scope of Nursing and Midwifery Practice Framework* (NMBI, 2015: 21) outlines that 'delegation takes place where the nurse or midwife ... who has the authority for the delivery of healthcare, transfers to another person the responsibility of a particular role or activity that is normally within the scope of practice of the delegator'. The document further outlines that the nurse or midwife is accountable in ensuring that the delegated task is at the level of competence of the 'unregulated HCW [healthcare worker] to perform' (p. 21). In addition, it outlines the structures that organisations should put in place to support nurses and midwives and those to whom tasks are delegated as well as the responsibility of the nurse or midwife who is delegating a task to a HCA. Similarly, in the UK, the Nursing and Midwifery Council (NMC, 2018: 3) defines delegation as, 'the transfer to a competent individual, of the authority to perform a specific task in a specified situation.' In the document entitled: *Delegation and Accountability: Supplementary Information to the NMC Code* (NMC, 2018: 3), the NMC highlights that delegation can be from 'a registered professional to an unregulated member of staff'. Similar guidelines have also been produced in Canada (College of Nurses of Ontario, 2013, College of Registered Nurses of British Columbia, 2013, College of Registered Nurses of Nova Scotia, 2012).

Although there are guidelines on delegation from national nursing and midwifery regulatory bodies, a number of inconsistencies in RNs delegating to HCAs are reported, including a reluctance to delegate among junior staff (Glackin, 2016), a lack of preparation at undergraduate level to delegate to others (Allan et al., 2016), conflicting instructions in delegation (Suter et al. 2014; Glackin 2016), delegation of tasks beyond the HCAs' scope of practice (Hasson and McKenna, 2011, Spilsbury et al., 2013, Glackin, 2016), accountability and responsibility regarding delegation (Glackin, 2016), and the knowledge that the HCA has the required education and skill to undertake the delegated task (Allan et al., 2016, Afzal et al., 2018). In Ireland, senior managers reported that, as a consequence in the variability in training of HCAs, there was a lack of understanding regarding the competencies of HCAs and this had consequences regarding the tasks that could be delegated (Glackin, 2016). HCAs in the same study also reported that this lack of understanding resulted in them receiving conflicting direction from RNs and, subsequently, confusion regarding what could and could not be delegated. It is reported that delegation is something that is predominantly learnt by RNs in an *ad hoc* way while in clinical practice and not something that is taught or developed as part of their pre-registration education (Allan et al. 2016).

One of the difficulties with RNs delegating tasks to HCAs highlighted in the Cavendish (2013) review was the profusion of job titles and variability in roles associated with the post. The Review also highlighted that the separation of the education and training of RNs and HCAs resulted in a lack of clarity amongst RNs on the task and roles that they could safely delegate to HCAs. UNISON (2016) also reported that a third of HCAs who were surveyed were uncertain regarding the tasks that could be safely delegated to them. The main issue related to competence of the HCA to undertake the task.

2.7 Education and Training of HCAs

Levels of training and education for HCAs differs internationally. The entry requirements for students to HCA education and training programmes across fifteen European countries was wide-ranging; the length of school education prior to entering a HCA programme varied from 8 years to 12 years with the minimum age ranging from 15 to 18 years (Braeseke et al., 2013). In a number of studies, the educational preparation of HCAs for their role was reported as being inadequate due to a disconnect between theory and practice. For example, Glackin (2016), reported that, in Ireland, HCAs can acquire their qualification without adequate clinical practice to align with the theoretical component of the course.

The most comprehensive overview of the education and training of HCAs in Europe is provided in *Development and Coordination of a Network of Nurse Educators and Regulators (SANCO/1/2009)* report (Braeseke et al., 2013). This report highlighted that there was great variability in the education and training of HCAs across the fifteen European countries that returned data for the report. The length of specified training for HCAs ranged from one year to four years. At the time of the Report, 2013, in Ireland and the UK there was 'no official examination, curriculum or employment regulation' identified (p.22). In a number of countries within the EU (Germany, Ireland, Finland, the Czech republic, Poland and Austria), HCA education can be undertaken on a full-time or part-time basis; however, in countries where the education programme is generally of one year in duration, it is completed full-time (Braeseke et al., 2013). The vast majority of countries that provided data for the SANCO report had an official curriculum for HCA education and training with the exception of the UK; in addition, the majority of countries, with the exception of Ireland, Bulgaria and the UK had an official examination. However, the format of the examination across the countries surveyed varied; examination processes included written, oral and/or practical components. All 15 countries in the SANCO report identified that the curriculum for training HCAs consisted of both theoretical and practical components with variability in the ratios of clinical to practice applied. The clinical placements identified in the European context were wide-ranging and consisted of experience gained in hospitals, residential settings, private practices and rehabilitation settings. Ireland and the Netherlands supplemented the practical placement with access to skills lab based training (Braeseke et al., 2013). Funding for education of HCAs varies across Europe with the majority sourced through public funding; however, in Austria, Poland and Slovenia, funding for education was private and in the UK and Italy it was mixed public and private. In Ireland, HCAs are formally prepared for their role through a Level 5 award from Further Education and Training Awards Council (FETAC). The education for these awards is principally provided by Centres for Nurse Education situated within hospitals and provisions for ensuring that HCAs are educated to Level 5 are set out by the Health and Information Quality Authority (HIQA, 2009). However, HCAs that are both qualified and unqualified work in the health system. This lack of standardisation of qualifications has resulted in a lack of confidence in the role (Glackin, 2016). Although the educational qualifications for HCAs in Ireland are authorised by FETAC, they are not regulated by this or any other official body. This lack of standardisation of the educational provision of HCAs has also been highlighted as an issue in Canada (Afzal et al., 2018) and Europe (Braeseke et al., 2013). In a series of interviews with senior managers in Ireland, Glackin (2016: 172) reported that there was a perception that there was a 'disconnect between theory and clinical practice' and variability in the training of HCAs. This variability in the training, Glackin (2016: 172)

concluded, had resulted in a 'three-tiered workforce reflecting qualified, partially qualified and non-qualified HCAs.' This was seen as a risk in the provision of quality care and the tasks that could be safely delegated to HCAs.

In the UK, it was identified in the Cavendish Review (Cavendish, 2013) that approximately 40% of HCAs providing direct care in community settings had no relevant qualification and questions arose in the *Review* that HCAs did not have adequate levels of education their post; comparisons were made that HCAs were, in some cases, working at the level of the now defunct State Enrolled Nurse post without the levels of training or accountability previously aligned with this role. The Cavendish Review (Cavendish, 2013: 36) concluded that the training and education of HCAs in the UK is 'neither sufficiently consistent, nor sufficiently well supervised, to guarantee the safety of all patients and users in health and social care' and called for the creation of a 'certificate of fundamental care'. This became the 'Care Certificate' and was introduced in England in April 2015; it consists of fifteen standards, can be completed in three months and was jointly developed by Health Education England (<https://hee.nhs.uk/our-work/care-certificate>) and Skills for Care (<https://www.skillsforcare.org.uk/Learning-development/Care-Certificate/Care-Certificate.aspx>). A recent evaluation of the Care Certificate (Kessler et al., 2016 cited by Sarre et al., 2018), shows that this process has positively impacted on the length of induction courses for participants. In the UK, it has been reported that, overall, the education of HCAs is *ad hoc* and there is no formal standardised system across the country with education provided at a local level (Sarre et al., 2018). Sarre et al. (2018) in a series of qualitative interviews with 58 HCAs and other staff across three NHS Trusts in England reported that, although induction training was viewed as important, it did not match the realities of healthcare work. There was, in particular, a call for an emphasis on education and training related to communication skills and caring for people with cognitive impairments. In addition, HCAs being supernumerary during the induction phase was identified as being of great value; however, this, at times, did not occur due to staffing shortages. A shortage of RNs in particular was identified as a barrier to HCAs accessing supervision, mentorship and assessment as part of their education process. A major study by Arthur et al. (2017) consisting of a telephone survey of all the Trusts in the UK found great variability in the training of HCAs with half the Trusts reporting that the induction process lasted a week or less. In Scotland, nationally agreed education requirements have been outlined (NHS Education for Scotland, 2010).

In other countries, the systems for education are wide-ranging with variability in the levels of standardisation of educational programmes. The Australian system employs a role similar to HCAs who are identified as Assistants in Nursing (AINs); the education programme is 18 weeks in length which consists of seven weeks theory and eleven weeks practical placements (Twigg et al., 2016). In Canada, education and training of HCAs is provided by both public and private institutions (Kelly and Bourgeault, 2015); the split between the public and private provision of education for HCAs has been identified as providing an inconsistency in standards and differing levels of competencies gained by course participants (Afzal et al., 2018). Overall there are no national standards for HCA training in the country, and while some provinces have a standardised curricula, there is great variability in the type and length of training accessed by HCAs (Berta et al., 2013, Estabrooks et al., 2015a, Estabrooks et al., 2015b, Arain et al., 2017, Afzal et al., 2018). An example of a provincial standards available is the Alberta Government Healthcare Aide Curriculum (2018) (see

<https://open.alberta.ca/publications/9781460137253>) which consists of six HCA core competencies: role and responsibility, provision of care, collaborative care, communication, health across the lifespan and safety. In the US, HCAs who pass Federal Government requirements are called Certified Nurse Assistants (CNAs). To be certified in the US, CNAs are required by Federal Government to have 75 hours of training with at least 16 hours of practical training (Sengupta et al., 2010); this training is based on the Nurse Aide Training and Competency Evaluation Program of the Omnibus Reconciliation Act of 1987 (U.S. Department of Health & Human Services [USDHHS], 2002, Sengupta et al., 2010). CNAs are predominantly employed in hospital and residential care settings and are required to complete at least 12 hours of continuing education annually (Sengupta et al., 2010, Baughman & Smith, 2012). There is concern, however, that the current programmes in the US are not meeting the needs of an ageing population with too much emphasis on the theoretical components rather than clinical experience and there are calls to increase the current 75 hours of training stipulated in regulations (Sengupta et al., 2010).

The educational mobility of HCAs varies on a European level. Horizontal permeability, the ability to undertake further education at the same level of the HCA qualification, was available, although somewhat limited in a number of European countries and included moving into new professions at the same level or gaining senior post with the HCA role. Vertical permeability, moving to a higher level of qualification, predominantly nursing, was available in a number of European countries but the pathway to this was variable with a limited number of bridging courses available to HCAs wishing to progress. Both the UK and Switzerland had the best structured processes to enable suitably qualified HCAs progress onto registration nursing programmes; Switzerland offered direct access for HCAs to universities of applied sciences whereas the UK takes into account accreditation of prior learning (APL) or recognition of prior learning (RPL). However, other studies have reported difficulties in HCAs accessing nurse training due to cost or a lack of support (Vail et al., 2011).

Overall, there is great variability in the literature on the content and standards of educational provision for the preparation of HCAs for their role both at national and international levels. From the literature reviewed, there is a lack of information on which programme structures and content are most effective in preparing HCAs for their role; this conclusion is also highlighted in a review of the HCA literature by Hewko et al. (2015).

2.7.1 Continuing Education

Increasingly HCAs are delivering a greater proportion of the hands-on care to people in hospital; however, the literature reviewed demonstrated that there is inconsistency in the levels of continuing education available to HCAs once they enter their clinical post and the relevance of this education to their role. The evidence that does exist is predominantly from Canada and the UK.

In Canada, it was reported that HCAs have limited access to on-going education (Berta et al., 2013, Afzal et al., 2018). The Cavendish Review (Cavendish, 2013), drawing upon a UNISON survey (UNISON, 2010) also reported that a substantial proportion of HCAs had not had a formal appraisal or had been presented with a personal development plan. Spilsbury et al. (2013: xvi) on examining the roles of HCAs in community settings, also concluded that 'the developing roles of assistants in community nursing teams have been relatively neglected'.

Health Education England (HEE, 2014) has published *A National Strategic Framework to Develop the Healthcare Support Workforce*; part of the process in developing the *Framework* consisted of an online questionnaire that elicited 5,764 responses; the majority of who were in healthcare support roles. The responses indicated the healthcare support workers found that access to ongoing education was inconsistent and there were a number of barriers in this cohort accessing training. Furthermore, the consultation process identified that those skills that were gained, were found not to transfer between organisations or into the higher education sector reducing the mobility opportunities of HCAs. Sarre et al. (2018: 151) also reported that access to continuing education for HCAs can be variable and, at times, access could be dependent on the level of support received from ward managers who acted as 'gatekeepers' in relation to access to training.

In a survey in the UK (UNISON, 2016), approximately 40% of HCAs reported that there was training they needed to access but were unable to do so. Areas of training required that was most cited included: cannulation, phlebotomy, catheterisation, care of people with dementia, venepuncture, ECG and the taking of vital signs. Reasons highlighted in the literature that prevent HCAs from accessing ongoing education and training include poor resources, support from ward managers and the variability in training needs of HCAs. Where training was available, it was generally accessed by new staff, with limited opportunity for ongoing education; in addition, training tended to concentrate on tasks with little provision made for education in relation to emotional support, staff and patient relationships and empathy for patient care. Other areas that have been highlighted in relation to the on-going education of HCAs include: having difficult conversations with patients and relatives and dealing with work-related stress (UNISON 2016, Arthur et al., 2017). In the US (Sengputa et al., 2010: 215) reported that the continuing education programmes required by CNAs working in the nursing home sector included: care of a person with dementia, communication skills and 'working with supervisors'.

2.8 Professional Regulation of Healthcare Assistants

This section of the review highlights the literature that discusses the regulation and registration of HCAs as well as the situation internationally where evidence exists. No research was identified that highlighted the benefits or otherwise of regulation; however, a number of studies explored attitudes to regulation from the perspective of key stakeholders.

As in the profile and definitions of the role, there are a multitude of models under which HCAs are supervised and, in some cases, regulated. In many countries, the HCA workforce is unregulated and these care providers 'do not have a legally defined scope of practice, a protected title, mandatory education requirements, a set of professional practice standards or a professional conduct review process' (Afzal et al., 2018: 3). The debate around the regulation of HCAs and other health professionals emerged not least due to a number of failings in care that led to reports and enquiries internationally. These include exposure to poor care or lack of standards in both hospital and nursing home sectors (Drennan et al., 2010, The Mid Staffordshire NHS Foundation Trust Inquiry chaired by Robert Francis QC, 2010) and concerns regarding the quality of care experienced by older people (Estabrooks et al., 2015a, 2015b). As a consequence of these reports highlighting poor care, a number of key reviews were launched both in Ireland and the UK that made a number of recommendations related

to staffing by RNs and HCAs to ensure that patients experienced high quality, safe care. One report that was specifically related to HCAs was the Cavendish Review (Cavendish, 2013: 12); this review 'was established to investigate what can be done to ensure that all people using services are treated with care and compassion by healthcare assistants and support workers in the NHS and social care settings'. Although not specifically a research report, the review did undertake a series of focus groups, seminars, surveys roundtables and consultations. While recommendations on formal registration of HCAs was outside the scope of the Cavendish Review, the report did recommend that there should be 'higher national standards in the absence of registration' (p. 34); this was a theme highlighted in a number of reports and studies.

One major European report on the regulation and future development of the HCA role was published in the last number of years; this report is entitled: *Development and Coordination of a Network of Nurse Educators and Regulators (SANCO/1/2009)* (hereafter referred to as the SANCO report) (Braeseke et al., 2013). This project initiated a European-wide network that examined the education, regulation and legal framework pertaining to HCAs in fourteen EU⁷ countries and Switzerland. Representatives on the project included nurse educators, regulators and managers. The SANCO report (Braeseke et al., 2013) recommended the registration of HCAs but found that there was variability across a number of European states on the extent to which this occurred. Only in five of sixteen countries involved in the report was registration compulsory; a number of countries, notably Ireland, Switzerland and the UK had no form of registration. Bodies registering the role varied from state agencies or bodies self-administrating the occupational group. In addition, one country, Slovenia, requires re-registration every seven years with evidence of continuing professional education. The countries in Europe in which HCAs are officially registered and/or regulated include: Austria (Regulation) Belgium (Registration and Regulation), Bulgaria (Regulation), the Czech Republic (Registration and Regulation), Denmark (Registration and Regulation), Germany (Regulation), Finland (Registration and Regulation), Italy (Regulation), The Netherlands (Regulation), Poland (Regulation), Slovenia (Registration and Regulation), Spain (Regulation) and Switzerland (Regulation); there is no registration or regulation in Ireland or the UK. The level of regulation differs by country; in Austria, Bulgaria, the Czech Republic, Denmark, Finland, Italy and Slovenia, both the work practices and education of HCAs are regulated whereas in Belgium, Germany, The Netherlands, Poland, Spain and Switzerland only the education requirements are regulated (Braeseke et al., 2013). The official bodies regulating HCAs vary from country to country across Europe with regulation of HCAs ranging from federal governments or regional authorities, federal offices, ministries of health, education and labour (Germany, Italy, Austria, Bulgaria, Belgium and Poland and Spain) to official nursing regulatory bodies (Denmark, Finland, Slovenia, the Netherlands and the Czech Republic) (Braeseke et al., 2013).

Currently, there are no national regulation processes in place for HCAs in the UK, Ireland, Canada, Australia or New Zealand (Glackin, 2016, Afzal et al., 2018). In the UK, there are currently no plans to regulate HCAs (Spilsbury et al., 2013); however, a number of reports into failings in care and from feedback from patient groups, nursing representative unions and

⁷ Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, Germany, Ireland, Italy, The Netherlands, Poland, Slovenia, Spain, United Kingdom.

healthcare employers, have reported that some form of regulation of HCAs should be put in place. The *Francis Inquiry* into failings in care at Mid Staffs NHS Trust in the UK did recommend that healthcare support workers should have a code of conduct and a mandatory registration system in place:

The Inquiry concludes that the balance of the evidence is strongly in favour of a compulsory registration scheme for healthcare support workers, and the imposition of common standards of training and a code of conduct. It recommends that the NMC be the regulator. Such a register should include a record of the reasons for any termination of employment as a healthcare support worker. The possibility of a wider system for excluding those unfit to hold such posts should be kept under review (The Mid Staffordshire NHS Foundation Trust Inquiry chaired by Robert Francis QC, 2010: Recommendation 195).

Support for regulation has also been highlighted by senior managers in healthcare in the UK. Spilsbury et al. (2013) reported that senior managers working within community settings perceived that regulation of the HCA workforce was required and were, in some cases, implementing locally developed codes of practice to assist in clarifying the role. Saks et al. (2002) further reported that CEOs were in favour of regulation with the majority stating that there should be direct regulation overseen by a supervisory body.

Although Canada has no national regulation process, it does have a system in a number of provinces; this system varies by institutional type and type of registration as well as mandatory versus voluntary (Estabrooks et al., 2015a). In Ireland, there is little research related to the regulation of the HCA role; however, a recently completed doctoral thesis provides a comprehensive summary of the role in Ireland to date (Glackin, 2016). Glackin (2016) reported that in terms of regulation, senior managers expressed concern that there were a number of risks to the public due to the fact that HCAs in Ireland were not regulated. These risks included HCAs working alone, confusion regarding competencies and supervision and parameters around delegation. Glackin (2016) concluded that a form of regulation would help address the concerns; however, there was variability in the views of key stakeholders interviews as to the form this process of regulation should take.

A number of countries that do not have formalised regulation or registration of HCAs have called through various representative bodies for a system of regulation to be put in place (Australian Nursing Federation, 2011, Royal College of Nursing, 2007, UNISON 2016). The RCN in the UK has advocated for the regulation of HCAs (RCN, 2015), primarily as a means to protect the public who receive care from HCAs and ensuring that training and education is carried out consistently across the health service. There is support amongst HCAs in the UK for a formal registration process to be put in place with 85% of respondents to a UNISON (2016) survey reporting that they should be regulated by an external regulatory body. The majority of respondents surveyed reported that such regulation would be beneficial in raising professional status, the application of consistent education and training standards and the implementation of a code of conduct. Respondents' perceptions of who should take responsibility for regulating HCAs in the UK varies; suggestions included an new regulation body, the Nursing and Midwifery Council (NMC) or the Health and Care Professions Council. In Ireland, there was also support amongst HCAs interviewed for a process of regulation to be

put in place with the protection of the public as the main reason advocated for this approach (Glackin, 2016).

The literature reviewed highlighted a number of reasons why the HCA workforce should be regulated; these included: protection of the public, to improve educational standards, to standardise the role and define the scope of practice, control access to employment, to provide recognition of the role and to assist in workforce planning (Saks et al., 2000, Saks and Allsop, 2007, Griffiths and Robinson, 2010, Hewko et al., 2015). The form of regulation favoured by CEOs in Saks's *et al.* (2002: 172) study included: 'a mandatory register; codes for workers and employers; formal education levels; pre-service checks; and access to information on those unsuitable for employment'. One of the main reasons an occupation is regulated is to protect the public with questions arising regarding if the processes used in the recruitment and supervision of unregistered HCAs are enough to protect the public (Saks and Allsop, 2007). Saks et al. (2007) in a survey of CEOs in healthcare in the UK, reported that over half perceived that there was either moderate or considerable risk to the public from having an unregulated workforce providing care. Reasons for this concern in subsequent focus groups included the problem of identifying people who were unsuitable for a caring role, the wide variation in HCA roles and, the lack of standards for training. As well as protecting patients, other reasons put forward for a system of registration and regulation of HCAs is that it will facilitate the provision of workforce planning for this group. Hewko et al. (2015: 14), following a scoping review of the literature related to HCAs, recommended that, 'in the absence of regulation, at minimum, inclusive HCA registries should be instituted in all countries'; the rationale for this recommendation is that it will facilitate forward workforce planning due to the availability of data and the ability to match this data to the healthcare needs of the population. Another reason highlighted for regulation, is to facilitate the standardisation of roles undertaken by HCAs. Griffiths and Robinson (2010) in a scoping review exploring the regulation of HCAs in the UK reported that they were undertaking roles for which they were not trained and, at times, were undertaking these tasks without adequate supervision. The scoping review concluded:

There is thus a strong case for regulation in that it would control access to employment, be accompanied by defined and nationally agreed competencies and mandatory, standardized training, and clarify the scope of individual support workers' practice (Griffiths and Robinson, 2010: 6).

A number of models and considerations regarding regulation were proposed including at the level or grade that regulation be applied, the generic and specific tasks associated with the role, who the regulatory body should be⁸, the level of regulation – ranging from light touch to formal models; that is licensing arrangements or registration, employer-based registration as opposed to a national system and voluntary or compulsory (Griffiths and Robinson, 2010).

Reasons for the non-registration of HCAs have also been highlighted in the literature; these included costs and logistical issues, the size of the workforce and complexities due to the multiplicity of titles and roles undertaken by HCAs (Saks et al., 2000, Saks and Allsop, 2007,

⁸ In the UK consideration was given to the Health Professions Council or the Nursing and Midwifery Council

Griffiths and Robinson, 2010). Saks and Allsop (2007), who examined the regulation of HCAs from the perspective of healthcare managers, highlighted that the costs of such a scheme for both for employers and HCAs would be relatively high; in addition, it was argued that a regulatory system would add constraints on the employment of HCAs and the supply of personnel could be reduced if minimum standards were set. In the UK, the regulation of HCAs is predominantly employer led through the uptake of references, police checks, supervision and delegation. However, it has been identified that this system is not without risk (Saks and Allsop, 2007).

This review found no evidence that regulation impacted on the quality of care provided by HCAs. Griffiths and Robinson (2010: 5) in a scoping review for the NMC in the UK concluded that that it was 'not possible to demonstrate unequivocally that an unregulated healthcare support workforce presents a risk to public safety and that this risk would be prevented by regulation.' However, the report did go on to highlight that HCAs had obtained employment in one setting following dismissal for misconduct in another and that this could occur as a consequence of a lack of regulation; however, Griffiths and Robinson (2010) concluded, as has occurred with other groups of healthcare professionals, regulation does not guarantee that high quality care will be delivered.

2.9 Staffing and Skill-Mix

This is emerging evidence in the literature related to the impact that staffing levels and skill-mix has on patient outcomes; skill-mix is generally defined as the proportion of hours of care provided by RNs in comparison to other grades, including HCAs (Aiken et al., 2002). Assessing skill-mix is increasingly seen as important when exploring the association between nurse and HCA staffing and patient outcomes (Twigg et al., 2016, Drennan et al., 2018a).

Across Europe, there are variable levels of skill-mix; the RN4CAST reported that skill-mix⁹ ranged from a high of 82% in Germany to a low of 54% in Spain; Ireland reported the average proportion of RNs providing care at 72% (Aiken et al. 2012). In the UK the RCN (2010) reported that skill-mix in acute hospital settings across the four countries of the UK ranged from 66% in Northern Ireland to 60% in Scotland, 59% in England and 56% in Wales with the average skill-mix at 62%. The RCN (2010) has estimated that the skill-mix in mental health settings is 50% and in children's wards, 83%. In older people's wards, the skill-mix has been estimated at 50% RN and 50% HCA (RCN, 2012). In the UK, it was reported that between the years 2011 and 2012 there was a fall in the number of RNs by 2,283 whereas there was an increase over the same period of HCAs by 2,691; this, suggested Cavendish (2013) may have occurred as a consequence of replacing RNs with less expensive HCAs during a recessionary period; however, further data would be needed to ascertain if this trend continues. In a survey undertaken by the RCN (2010) it was noted that the skill-mix¹⁰ in nursing homes has fallen from 34% in 2007 to 25% in 2009. In community settings, Spilsbury et al. (2013) reported that that was great variability across England between and within organisations on the RN/HCA skill-mix. Similarly, in the US, Seblega et al. (2010) reported that the hours provided by RNs in the nursing home sector had decreased whereas those provided by Licensed Practical Nurses

⁹ Proportion of care provided by RNs

¹⁰ Day duty

(LPNs) and HCAs had increased. This, it was concluded was due to the replacement of RNs by LPNs and HCAs and was associated with the financial costs of employing more expensive RNs.

In the UK, there is variability in recommendations related to skill-mix. The Royal College of Nursing has made a number of recommendations in this area; in a document entitled *Safe Staffing for Older People's Wards* (RCN, 2012) it recommended that staffing on older people's wards should be 65% RN and 35% HCA or above; it further recommended that, in some case, a richer skill-mix may be required depending on patient need. This recommendation is based on the premise that, while the current ratios in these settings (50%RN:50%HCA) provides basic safe care, a skill-mix of 65:35 was viewed as ideal to provide 'good quality care (RCN, 2012: 7). The RCN (2007a) has also made similar recommendation for general hospital wards and states that the ratio registered to unregistered staff should not fall below 65:35 per cent. Recently Wales has published the Nurse Staffing Levels (Wales) Act (Welsh Government, 2016: 6); although it does not stipulate a set level of skill-mix, it does state the process under which it should be calculated:

When calculating a nurse staffing level, a designated person must—

1. (a) exercise professional judgement, and
2. (b) take into account each of the following—
 1. (i) the average ratio of nurses to patients appropriate to provide care to patients that meets all reasonable requirements, estimated for a specified period using evidence-based workforce planning tools;
 2. (ii) the extent to which patients' well-being is known to be particularly sensitive to the provision of care by a nurse.

A designated person may calculate different nurse staffing levels—

1. (a) in relation to different periods of time;
2. (b) depending on the conditions in which care is provided by a nurse.

The National Institute for Health and Care Excellence (NICE, 2014) in its safe staffing guideline also did not mandate skill-mix ratios but set out a number of recommendations. Drawing on the evidence review (Griffiths et al., 2014) submitted to NICE (2014: 12) as part of their consultation process, the guidelines stated:

When agreeing the skill mix of the ward nursing staff establishment, this should be appropriate to patient needs and take into account evidence that shows improved patient outcomes are associated with care delivered by registered nurses.

The NICE Guideline (NICE, 2014) further recommended that RNs should have overall accountability for the care of patients and advised that nursing staff requirements should be based on registered nurse hours. NICE also outlined that RNs should support and supervise HCAs and in delegating tasks and that the level of knowledge and skill of the HCA needs to be taken into account.

In Ireland, the ratio in medical and surgical settings has been set at 80% registered nurses and 20% non-registered, with higher ratios of RNs to HCAs recommended in specialist settings (for example, 85% RN to 15% HCA in emergency departments) (Department of Health, 2018). This recommendation was based on the evidence from a number of studies that explored the

relationship between skill-mix and patient outcomes. A programme of research is aligned to this policy recommendation to evaluate the impact on patient, nurse and organisational outcomes (Drennan et al., 2018a).

A number of reviews and meta-analyses have examined the association between skill-mix and patient outcomes; many of the studies reviewed in this area were relatively strong both for internal and external validity as they were carried out in multiple settings as well as using relatively large data sets from which to draw their conclusions. In a systematic review of the literature to inform the National Institute for Health and Care Excellence's (NICE) development of their safe nurse staffing guidelines, Griffiths et al. (2014) found no evidence to support a positive role of health care assistants in patient safety outcomes; some evidence pointed to a negative effect. Griffiths et al. (2014: 68) concluded: 'in general, evidence on skill mix favours a higher proportion of registered nurses and most evidence of associations with higher health care assistant staffing was negative (i.e. favouring fewer care assistants)'. In Griffith's review two studies (Hart and Davis, 2011, Lake et al., 2010) found that wards with more healthcare assistants had significantly higher rates of falls while another study found no association (Ibe et al., 2008). A single study (Unruh et al., 2007) found no association between the number of HCAs and length of stay while one study found that higher numbers of HCAs were associated with higher readmission rates (Weiss et al., 2015). One study found significantly more medication administration errors in units with more healthcare assistants (Seago et al., 2006). One study showed significantly less patient satisfaction in units with more health care assistants (Seago et al., 2006) and one showed significantly higher use of physical restraints (Hart and Davis, 2011). A recent systematic review on the association between nurse staffing, including skill-mix, and missed care (Griffiths et al., 2018) concluded that 'adding support workers to the workforce does not generally reduce the level of missed nursing care and may even increase it where skill mix is diluted'.

One of the largest studies examining the association between skill-mix and both patient and nurse outcomes was undertaken in acute care hospitals in six European countries (Belgium, England, Finland, Ireland, Spain and Switzerland); data was collected from 13,077 nurses across 243 hospitals, with mortality data collected from 275,519 surgical patients in 188 of the 243 hospitals (Aiken et al., 2017). Aiken et al. (2017) reported that in hospitals with a richer skill-mix; that is a higher proportion of RNs compared to other grades, there were lower mortality rates, higher levels of patient satisfaction and fewer adverse outcomes (falls, pressure ulcers, hospital acquired urinary tract infections). Aiken et al. (2017: 565) concluded: 'each 10% increase in the proportion of nursing personnel who are professional nurses is associated with an 11% decrease in the odds of patient deaths after general surgery'.

Aiken et al.'s study explored surgical units whereas a recent secondary, longitudinal study examined the association between skill-mix and mortality in 12 acute medical units in Italy of 1464 patients (Ambrosi et al., 2017). The study concluded that those patients who received less care from RNs had a higher risk of mortality (RR = 2.236, 95 % CI = 1.270–3.937); in addition, those patients that were received a richer skill-mix of care (higher proportion of hours provided by RNs compared to HCAs) was associated with a decreased risk of mortality (RR = 0.940, 95 % CI = 0.912–0.969).

An on-going study in Ireland (Drennan et al., 2018b) recently published data from six pilot wards which made a number of changes to the staffing in medical and surgical wards based on the recommendations in the *Framework for safe Nurse Staffing and Skill-Mix* (Department of Health, 2018). These changes included a systematic approach to determining the team delivering direct care (RNs and HCAs), ensuring that the CNM 2 post is 100% supervisory and, adjusting the skill-mix in the wards to 80% RN and 20% HCA. This resulted in an uplift in staffing numbers in a number of wards (both RNs and HCAs) as well as an adjustment in the skill-mix to ensure that they met the recommended RN to HCA ratio. Outcomes were measured prior to and following the implementation of the recommendations. The outcomes to date demonstrated a substantial reduction in agency hours required, a reduction in adverse events, an improvement in respondents' perceptions that wards were adequately staffed and resourced. In addition, staff (RNs and HCAs) also perceived that the working environment became less complex over the period of the study with an overall agreement that time available to deliver care increased. Staff perceptions of the quality of care delivered as good or excellent also increased in those wards that received a staff uplift and the implementation of the 80/20 skill-mix. The proportion of care left undone and delayed events also reduced with levels of job satisfaction increasing following the implementation of the recommendations.

In the nursing home sector, Castle and Anderson (2011) undertook a large scale study that examined quarterly staffing data between the years 2003 and 2007 from 2839 nursing homes in the US. It was reported that increasing both RN and HCA staffing levels was associated with better quality outcomes; however, quality outcomes associated with an increase in Licensed Practical Nurses (LPNs) was much weaker. This, it was suggested, was due to the relative lack of hands on care provided by LPNs. Previous research by Castle et al. (2008) has reported that high agency use of HCAs in the nursing home sector is associated with decrease in the quality of care delivered; this is particularly the case if nursing homes replace their staffing with agency HCAs. Castle et al. (2008), providing an example, state that increasing HCA 'agency staff from 5 FTEs to 35 FTEs can expect an overall 4.1% increase in restraint use, 4.7% increase in catheter use, 5.7% increase in inadequate pain management, and 3.8% increase in pressure ulcers' (p. 248). Lin (2014) on the other hand, found no association with an increase in HCA staffing and quality of care in the nursing home sector in the US; however, an increase in RN staffing was associated with an increase in the quality of care.

Skill-mix is generally explored in terms of HCAs substituting for RNs or HCAs being employed to so support RNs. There is emerging evidence that a skill-mix where there is a reduction in the nursing hours provided by RNs and an increase provided by other grades, results in an increase in adverse patient outcomes including mortality and missed care (Twigg et al., 2016). There was limited evidence, until recently, on the impact of the supportive or complementary model of Assistants in Nursing (AINs) (similar to HCAs) on care delivery (Twigg et al., 2016). Using a pre-test – post-test control group (AIN versus non-AIN wards) design, 408,707 patient records were reviewed in a large metropolitan area in Australia; data was collected two years prior to, and two years following, the introduction of AINs. The outcomes explored were based on Needleman's (2002, 2011) adverse outcomes sensitive to nursing care and included: failure to rescue (death in patients with complications), 30-day mortality, falls, hospital-acquired urinary tract infection (UTI), pressure sores, pneumonia, or sepsis (Twigg et al., 2016). Twigg et al. (2016) found that on wards where AINs were introduced, there were

statistically significant increases in failure to rescue, hospital acquired urinary tract infections and falls with injury. In comparison, on the non-AIN wards, there was a significant decrease in pneumonia and a significant increase in falls with injury. This, as the authors outline, was an unexpected finding and stated: 'although adding AINs to the wards did not reduce the number of RNs it still functionally decreased the skill mix' (Twigg et al., 2016: 197). Twigg et al. (2016) concluded that adding AINs as a supportive role to RNs did not demonstrate beneficial effects on patient outcomes. A number of studies in the hospital setting have also reported that a lower skill-mix (that is the majority of care delivered by grades other than an RN) is associated with adverse events including mortality, failure to rescue, increase length of stay and hospital acquired pneumonias and urinary tract infections (Needleman et al., 2002, Cho et al., 2003, Estabrooks et al., 2005, Twigg et al., 2011, Twigg et al., 2012).

On the other hand, a number of studies have reported no association between skill mix and patient outcomes in a number of settings (Castle and Engberg, 2007, Castle et al., 2007, Decker, 2008, Comondore et al., 2009, Spilsbury et al., 2011, Backhaus et al., 2014, Ball et al., 2016, Ball et al., 2014, Dellefield et al., 2015). Backhaus et al. (2014) reported no association between nurse staffing and quality of care in nursing homes following a systematic review of longitudinal studies; there was a relationship with the incidence of pressure ulcers: more staff resulted in fewer pressure ulcers regardless of who delivered care (RNs or HCAs). Ball et al. (2014, 2016) has explored the relationship between skill-mix and care left undone on data from the RN4CAST in England and Sweden and found no association between levels of support workers¹¹ and care left undone. In the Swedish arm of the study, Ball et al. (2016: 2095) concluded that there was 'a small benefit when support worker staffing was at its highest level (compared with having no assistants), the effect was modest compared with the effects of increasing levels of RN staffing'.

One study identified reported better patient outcomes associated with better HCA staffing; Castle and Anderson (2011) reported that a 6% increase in HCAs is associated with a 1% reduction in pressure sores. Spilsbury et al. (2011) undertook a systematic review that explored the relationship between nurse staffing and quality of care in nursing homes. The review concluded that no firm conclusions could be made on the relationship between staffing and quality. A number of reasons were identified for this, not least the quality of the studies (the majority were cross-sectional and utilised secondary data sources) and the variability in methods used and operational definitions of quality that were presented; the review identified 42 indicators of quality, the majority of which were clinically focused. There was 'tentative' evidence that better quality care was associated with better RN and HCA staffing (Spilsbury et al., 2011: 746); however, overall, it was concluded that the evidence, which was predominantly originated from the US nursing home sector, 'produced inconsistent and contradictory results about the link between nurse staffing and quality in nursing homes' (Spilsbury et al., 2011: 748). A recent review of the association between nurse staffing and quality in nursing care in the nursing home sector noted an improvement in the quality of studies undertaken between 2008 and 2014 and reported that a number of longitudinal studies reported a relationship between a higher RN skill-mix and better quality outcomes (Dellefield et al., 2015).

¹¹ Licensed practical nurses and HCAs

In addition, a Cochrane review of the literature on hospital nurse staffing models and patient and staff-related outcomes that selected studies on the basis of an intervention¹² (Butler et al., 2011) reported that the evidence on replacing RNs with unqualified HCAs was limited; there was some evidence that specialist support staff, such as dietary assistants, may have some impact on patient outcomes.

2.10 Relationships with other Health Professionals

A number of studies have reported on the relationships with other healthcare professionals. Following a series of interviews, Kessler et al. (2010: 134) reported that RNs' perceptions of HCAs were 'extremely positive' across a sample of NHS Trusts, with the role viewed as highly valuable and a sense that wards would not function without the post in place. Positive team-working attitudes have also been identified in HCAs working in GP practices (Vail et al., 2011) and community settings in the UK (Spilsbury et al., 2013). In addition, other members of the multidisciplinary team have highlighted the positive impact of the HCA role on patient care and have reported on the importance in delivering quality care (Spilsbury et al., 2013; Afzal et al., 2018). The *SANCO* report also highlighted the relationship between HCAs and RNs; in particular it identified the role as one that supported the RN in her/his role but identified that there was a need to be aware of the scope of practice of HCAs *vis à vis* the RN, the supervision of the role, delegation and allocation of tasks, mentoring and collaborative working.

HCAs have reported feeling supported in their role primarily by RNs but also by medical staff in the acute hospital setting (Butler-Williams et al., 2010). The Cavendish Review (Cavendish, 2013) reported that nurses were the strongest advocates for HCAs and recommended that directors of nursing should take responsibility for the education, recruitment and management of HCAs; this recommendation was based on the premise that there was a disconnect between the strategic use of nurses and HCAs even though the two groups worked closely together.

One area that is relatively under researched is the contacts that occur between nursing students and HCAs even though there is evidence that these two cohorts have a close working relationship (Spilsbury and Meyer, 2005, Kessler et al., 2010, O'Driscoll et al., 2010, Hasson et al., 2013). Hasson et al. (2013), found that HCAs were involved in teaching nursing students and this was viewed as both a regular and normal part of their role. This teaching relationship was identified as being both formal (under the direction of an RN) and, informal; it was acknowledged that both formal and informal roles had developed as a consequence of the close working relationship between nursing students and RNs and the care demands in the ward environment. HCAs reported teaching a range of activities to nursing students related to both fundamental and specialised care. However, Hasson et al. (2013) highlighted that HCAs were unprepared for this aspect of their role with questions arising regarding the level of HCAs' knowledge regarding the theory underpinning the task being taught to nursing students and the potential to impact on the learning experience of nursing students.

HCAs themselves have described their role as having a low status and as helper to nurses (Vail et al., 2011) with reports that communication between RNs and HCAs can be challenging (Dahlke and Baumbusch, 2015). In a review of the literature related to unregulated care

¹² Randomised controlled trials, controlled clinical trials, controlled before and after studies, time-series analysis.

providers in Canada, Afzal et al. (2018) identified that this cohort of the healthcare workforce were isolated from multidisciplinary teams, had minimal input into interprofessional teams and were not involved in communication or collaborative processes.

2.11 Patient Experience with HCAs

A number of studies have explored the impact of the HCA role on the patient experience. Overall, the patient experience of being cared for by HCAs was generally positive with a view that they spent more time with patients than did RNs; however, patients were unable, at times, to distinguish the role of the HCA from other healthcare professionals, principally RNs. Where patients did distinguish, they expressed a preference in survey data to deal with a RN over a HCA when asking questions about their condition or care; however, those patients who could distinguish whether care was delivered by a HCA or RN, reported a better care experience from a HCA and a closer relationship (Kessler et al., 2010). Following a number of qualitative interviews with stakeholders, including patients, in Trusts in the UK, Kessler et al. (2010: 134) concluded that the role was perceived as a 'patient friend' and 'confidant'. The Cavendish Review (Cavendish, 2013) also identified that HCAs perceived that they were closer to patients than other disciplines within hospital settings, including RNs; a majority of HCAs in a recent survey (UNISON, 2016) reported that they felt valued and respected by their patients.

In a series of focus groups with older people and their carers, Arthur et al. (2017) reported that both older people and their carers required HCAs to be friendly and approachable, to build relationships and not to stereotype older people; in relation to the on-going education and training of HCAs, patients and carers would like to see included: communicating with people with cognitive disabilities, stimulating patients and encouraging patients to eat and drink.

Many issues related to the patient experience of being cared for by a HCA were aligned to a lack of recognition of the role amongst patients with a recommendation that this should be facilitated to improve patients' experience of the care delivered by HCAs (Kessler et al., 2010, Cavendish, 2013). However, studies have shown that patients may be less accepting of HCAs and, at times, confuse the role with that of nurses (Vail et al., 2011, Cavendish, 2013); this has led to recommendations that role should be distinguishable from RNs through uniforms and name badges (The Mid Staffordshire NHS Foundation Trust Inquiry chaired by Robert Francis QC, 2010).

2.12 Job Satisfaction/Intention to Leave/Turnover/Absenteeism

A number of studies have explored the job satisfaction and intention to leave amongst HCAs; however, the evidence is relatively limited. In the UK, Kessler et al. (2010) reported, following a survey, that levels of job satisfaction were high, with intention to leave low. Where job satisfaction did occur, it was related to taking on tasks that the HCA perceived were no longer desired by RNs. Similarly, Estabrooks et al. (2015a: 52), following a large scale survey of 1,381 HCAs reported that respondents were generally satisfied with their jobs but had 'moderate risks for burnout' on two of the three Maslach Burnout Inventory subscales – exhaustion and cynicism; however, HCAs scored well on the job efficiency subscale. Choi and Johantgen (2012) reported that supportive supervision and a perception of being valued by an employer

were positively associated with job satisfaction amongst HCAs working in the nursing home sector. Estabrooks et al. (2015a) highlights that the relatively high levels of burnout amongst HCAs working in nursing homes may be associated with the complexity of residents requiring care, workloads and staff shortages but highlights that further work is required in this area. Although studies demonstrated that levels of job satisfaction among HCAs were relatively high, when levels of dissatisfaction were reported, they were related to pay, limitations in role progression and promotion and a lack of understanding amongst other grades about the role and uncertainty regarding career progression (Vail et al., 2011, Spilsbury et al., 2013). In the US, it is reported that job satisfaction was associated with the extent to which CNAs working in the nursing home sector felt that they were prepared in their initial training for their job, the quality of training and the extent to which continuing education was relevant to their work (Sengupta et al., 2010, Han et al., 2014).

In association with job satisfaction, a number of studies have explored levels of, and reasons for, turnover amongst HCAs. Turnover rates of HCAs are rarely reported in the literature. Those that do exist report a turnover rate of 14% for HCAs working in the health sector and 19.8% of those who work in the social care sector; reasons cited for leaving the job included inadequate pay and a lack of appreciation by employers (Cavendish, 2013). Baughman and Smith (2012) reported that the average length of time a HCA in the US stays with an employer is relatively short at 10 months. Castle and Anderson (2011) have reported that higher turnover rates of RNs and HCAs in the nursing home sector are associated with the provision of lower quality care. It is also predicted that turnover rates amongst HCAs will also worsen in the future as there are increased demands for care from an ageing population (Baughman and Smith, 2012). High turnover rates have been reported amongst certified nursing assistants (CNAs) (similar to HCAs in the US). In a study of 2,254 CNAs employed in 516 nursing homes in the US, Choi and Johantgen (2012) reported that there were high levels of job satisfaction amongst CNAs; however, a quarter of respondents indicated that they intended to leave their current employment within the next year. The study found a relationship between job satisfaction and intention to leave; that is, satisfied CNAs were less likely to express an intention to leave than those who had lower levels of job satisfaction. Reasons for high turnover rates amongst HCAs in the US include low wages and work-related disability, with back injury the most predominant cause (Baughman and Smith, 2012). Baughman and Smith (2012) report that approximately 5.4% of HCA periods of work end due to a work-related disability; this is twice the rate of RNs.

In a number of countries, HCAs are paid relatively poorly compared to other healthcare workers. In the US, the median salary for a HCA was \$27,520; this compares to a median salary of \$70,000 for RNs (US Bureau of Labor Statistics 2017). In the US, intention to leave amongst CNAs was associated with hourly salary: 'CNAs were 12% less likely to express an intention to leave with a one- dollar increase in their hourly wage' (Choi and Johantgen, 2012: 193). Baughman and Smith (2012) also highlight studies where retention rates amongst healthcare workers increase in line with living wage increases; however, this was found to have a relatively modest effect when predicting turnover. The Cavendish Review (Cavendish, 2013) highlighted that, even though HCAs were undertaking advanced procedures previously under the remit of RNs, this was not reflected in salary scales and this subsequently led to the perception of the low status of the HCA post.

Allwardt (2008), in an unpublished PhD thesis, reported that the predictors for staff turnover amongst nurses' aides (n = 243) working in the nursing home sector in the US were: length of time in post (longer tenure less likely to leave), health insurance (nurses' aides with health insurance less likely to leave) and; mental or physical health problems (HCAs with these issues were more likely to leave). Mental and physical health problems were highlighted as being related both to the emotional and physical demands of the job. Allwardt (2008) further reported that, of those HCAs that did leave their current employment, approximately half continued to work as nurses' aides in both nursing home and hospital settings; however, a high proportion left the occupation completely. In the UK, In a survey of over 2,300 healthcare support workers, 44% of respondents reported that they fairly or very seriously thought of leaving their job; stress and being undervalued by employers were the main reasons presented (UNISON, 2016). Other studies have shown that, amongst HCAs, intent to leave is higher amongst a younger cohort (Sloane et al., 2010), HCAs educated to a higher level (Choi and Johantgen, 2012) and job tenure (Wiener et al., 2009). On the other hand, factors that facilitated the retention of HCAs in the US, included:, higher LPN staffing rates, higher HCA salaries and good management structures, including supervision and working in organisations where the care delivered was perceived to be high (Castle and Engberg, 2007, Donoghue and Castle, 2009, Stearns and D'Arcy, 2008, Hewko et al., 2015).

Castle and Ferguson-Rome (2015) in a large scale study (3,941 long-term care facilities) reported an average rate of 9.2% absenteeism amongst HCAs in the nursing sector in the US. Higher levels of absenteeism amongst HCAs were associated with lower levels of quality care, including an increase in the use of physical restraints, catheter use a reduction in pain management and an increase in pressure sore. Baughman and Smith (2012) also reported that HCAs in the US have the highest absenteeism rates due to work related injuries when compared to all other occupations. Baughman and Smith (2012) further identified that, of those in the US who leave HCA employment, only a third stay within the sector. Choi and Johantgen (2012: 193), in the US reported that amongst CNAs working in the nursing home sector in the US: 'supportive supervision was a significant factor of both job satisfaction and intent to leave. For each one unit increase in supportive supervision, CNAs were 4.09 times more likely to be satisfied with their jobs and 47% less likely to intend to leave their jobs'.

2.13 Economic Impact

There is little evidence in the literature related to the economic impact of HCAs in the delivery of health care. An evidence review undertaken for NICE, concluded that there was limited economic evidence on the cost-effectiveness of staffing interventions (Griffiths et al., 2014). One study, using a randomised controlled trial (Allen et al., 2014), examined the cost-effectiveness of an evidence based behavioural intervention programme that aimed to reduce cardiovascular disease risk reduction delivered by a nurse practitioner (NP) and community health worker team (CHW) (similar to community HCAs) in a region of the US. The comparison was usual care. The role of the community health worker was to reinforce the instructions provided to patients by the nurse practitioner which included lifestyle modifications and helping patients to develop strategies to improve adherence. Those patients that had contact with the nurse practitioner and community health worker team had clinically and statistically significant improvements in LDL cholesterol, systolic and diastolic BP, and HbA1c compared to patients receiving the usual care. The total cost of the nurse practitioner and community health worker exceeded the cost of care delivered by a doctor

only; however, the cost difference was relatively small (\$2825 NP/CHW; \$2198 MD) and the level of patient contact with the NP/CHW team was higher than the usual care group. Overall, Allen et al. (2014) concluded that a nurse-led team assisted by a community health worker was effective in delivering an evidence based intervention for those at high risk of CVD. In relation to the CHW, they were identified as 'critical' members of the team and were effective in bridging 'communication gaps between patients and healthcare providers and intervene to decrease barriers to adherence' (Allen et al., 2014: 6).

In the UK, Cookson and McGovern (2014) undertook a cost-effectiveness analysis of nurse staffing and skill-mix on nurse sensitive outcomes as part of the NICE development of safe nurse staffing guidelines. They concluded that the evidence available was limited and as part of the process they undertook a cost effectiveness analysis to estimate the incremental cost of averting one fall and avoiding one drug error on a single representative ward as a result in the change in the proportion of registered nurses to unregistered staff. In regression models, it was identified that a skill-mix of greater than 60% RN, was associated with fewer falls; a skill-mix less than 50% was associated with a greater number of falls. The model further demonstrated that a skill-mix with greater than 20% HCA was associated with a higher number of falls. The analysis found 'weaker and more inconsistent evidence' of the relationship between a [richer] skill-mix and drug errors'; in effect drug error rates increased; this, it was suggested, may have been down to higher levels of reporting (Cookson and McGovern, 2014: 45). The incremental cost effectiveness ratio was calculated at £1,412 per fall avoided and £127,823 per drug error avoided. Based on this analysis, Cookson and McGovern (2014), concluded that increasing skill-mix was cost-effective in reducing falls; however, the report outlined a number of limitations of the data used in the modelling of a limited number of adverse events.

Recently in Ireland, an economic evaluation of implementing the recommendations of the pilot Framework for Safe Nurse Staffing and Skill-Mix (Department of Health, 2018) was undertaken on six pilot wards; the implementation resulted in an alteration to staffing and skill mix based on patient acuity and dependency levels and patient turnover (Drennan et al. 2018). The evaluation measured the cost of staffing requirements and adjusting the skill-mix to 80% RN to 20% HCA in each of the pilot wards. It also costed the impact of the change to staffing on nursing sensitive outcome measured (adverse events). The total cost of implementing the changes to staffing and skill-mix was estimated to be €1,601,487 across the six wards annually. Associated with the changes to staffing and skill-mix was a reduction in agency nurses used to staff the wards, this resulted in a reduction of agency spend of €82,480 on average, per month. Therefore, the monthly cost of implementing the recommendations in the Framework (adjusting staffing levels and skill-mix at €79,574) was less than the agency savings realised of €82,480. Therefore, in implementing the recommendations of the Framework, there was a net monthly saving of €2,905 across the six pilot wards. Further research is ongoing in this area that is examining the impact of the implementation of the recommendations on the costs associated with adverse events (Drennan et al., 2018).

2.14 Future Development of HCAs

A number of studies highlight the aspirational role of HCAs to continue their career development to registered nurse status (Kessler et al., 2010, UNISON, 2016). The literature reviewed highlights that the extent to which this achievable is mixed. In a UK study, Kessler

et al. (2010) highlight little inclination amongst healthcare trusts to advance the role by supporting HCAs to undertake nurse education and training. The Cavendish Review (Cavendish, 2013) also reported that HCAs perceived that they had little or no opportunity to progress their careers and that the move of nursing to an all degree profession had closed off this route to some HCAs due to university entry requirements¹³. The Cavendish Review drew on Griffin and Sines (2013) bridging programme as a possible model to facilitate HCAs without the requisite academic qualifications to move into degree level nursing programmes. In Ireland, HCAs predominantly enter nurse education and training as mature students (aged 23 years of age and older) through the Central Applications Office (Braeseke et al., 2013). However, it is also reported that many HCAs are happy in their current role and have no desire to undertake training to become an RN citing the changing role of the RN as a disincentive to follow this pathway (Glackin, 2016, UNISON 2016).

In addition, the literature identified that, with some exceptions (see for example, Braeseke et al., 2013 and Cavendish, 2013), the future strategic development of the HCA role was found to be lacking; this was particularly the case for HCAs working in medical and surgical settings with some evidence emerging of a more focused use of the post in emergency and operating departments (Kessler et al., 2010). Priority areas HCAs themselves reported for future development included: promoting public and professional understanding of the HCA role, mandatory training and qualifications framework for HCAs, funding for secondment to RN training and, staffing ratios and skill-mix guidelines (UNISON, 2016).

A number of writers have called for specific, delineated job descriptions for HCAs; the rationale being that this will provide guidance on scope of practice as well as ensuring the safety of those receiving care (Spilsbury et al., 2013, Glackin 2016, Afzal et al., 2018). However, it is also acknowledged there is a need for flexibility for local role development to meet the needs of the local patient population (Spilsbury et al., 2013). There is also a call for a clear definition of role barriers between HCAs and RNs (Braeseke et al., 2013) with a call for the ongoing monitoring of the quality of care delivered by HCAs to confirm they are practising within their scope of practice and working effectively with RNs to ensure that HCA roles are valued and integrated within nursing teams (Spilsbury et al., 2013, Twigg et al., 2016).

It has also been recommended that there should be a common standard of training at European level of HCAs; this should take place following the completion of compulsory education and consist of 2 to 3 years full-time study at level 4 of the European Qualifications framework and take place in state accredited institutions (Braeseke et al., 2013). The flexibility of such programmes is acknowledged in that full-time and/or part-time models of delivery should be made available. Internationally, there is also a call for a greater standardisation of programmes for the education of HCAs (Afzal et al., 2018) and they should have both theoretical and clinical components in a variety of settings; the recommended weighting is 50% for each component. The clinical component should take place in a variety of care settings with the option for electives as required following which the successful completion of the HCA educational programme should lead to a recognised certificate or licence (Braeseke et al., 2013). The SANCO report further recommended that the education of HCAs should encompass a number of competencies including, subject specific competencies (e.g.

¹³ In the UK, A-Levels are a requirement to undertake degree level nursing programmes.

the provision of fundamental care); social-communicative competencies (e.g. respect for, and building relationships with, clients); methodological competencies (e.g. documentation) and; personal competencies (e.g. dealing with stress, working with other healthcare disciplines) (Braeseke et al., 2013). The SANCO report also recommended that the completion of the HCA programme and the attainment of a recognised qualification, should contribute to access to nurse education 'provided that the EU guideline 2013/55/EU (former 2005/36/EU) is fully met' (p. 58) (Braeseke et al., 2013). The national and European standardisation of the educational preparation of HCAs, it has been argued, will support the development of skills and competencies that are transferable within and across community nursing teams (Spilsbury et al., 2013, Estabrooks et al., 2015).

The literature also recommends that protected time is made available for the on-going education of HCAs in clinical settings and that education offered should include areas such as cognitive impairment of patients; managing stress and negative emotions and having difficult conversations with patients and relatives (Sarre et al., 2018). There is also calls for structured mentorship and supervision to be put in place to ensure that HCAs have the requisite skills and education to undertake the roles that are being delegated by RNs and other healthcare professionals (Glackin, 2016, Sarre et al., 2018).

In terms of regulation and registration, the *SANCO* report highlighted that registration without the successful completion of a recognised HCA education programme should not be permitted. The recommendation states:

We recommend a registration of HCAs through an organ of self-administration of the occupational group or a state agency. This registration should be seen in conjunction with the necessity of sustained continued education and self-improvement (p. 60).

The rationale for this recommendation was that it was envisaged that registration would ensure that standards of care are met, especially if aligned with a requirement for re-registration based on evidence of continuing education. In addition, the regulation of the HCA qualification would allow for mobilisation of HCA workers across EU states as well as providing employing bodies and patients with evidence of the standards of the HCA being employed. Regulation was also viewed as providing a framework for workforce planning as the size and constituents of the HCA workforce would be known; it was highlighted in the *SANCO* report that there was very little data on the profile of the HCA workforce across Europe. This is the same in other countries where a lack of information on the HCA workforce has been identified as a barrier to workforce planning and monitoring the impact of this occupational group on patient care (Estabrooks et al., 2015, Hewko et al., 2015). This lack of data on the HCA workforce was also highlighted in the Cavendish Review (Cavendish, 2013:14) in the UK; the collection of data on the HCA workforce was hindered by 'a profusion of job titles and lack of role clarity'. A finding that has also been highlighted in a number of studies and reports (Saks et al., 2000, Saks and Allsop, 2007, Hasson and McKenna, 2011, Hewko et al., 2015).

As this review has demonstrated, there are relatively limited studies of a high quality that discuss the impact of HCAs on patient care. Griffiths and Robinson (2010) recommended that future research should encompass areas such as patient and organisational outcomes

associated with an unregulated workforce and research on recruitment and retention in the healthcare support workforce.

A number of studies and reports also outlined recommendations to improve the working relationships between various occupational groups providing care in healthcare settings. These included a need to recognise the input of HCAs into patient care and involve them as a part of the multidisciplinary team (Afzal et al., 2018); in addition, it is recommended that RNs are prepared in areas related to accountability and team building and preparation to supervise, mentor and delegate to HCAs (Vail et al., 2011, Twigg et al., 2016, Afzal et al., 2018). Studies have also highlighted the need to raise awareness of the role of HCAs amongst healthcare professionals (Vail et al., 2011), the need to provide time for mentorship of HCAs (Vail et al., 2011, Afzal et al., 2018) and to educate patients on the role of HCAs (Kessler et al., 2010).

At a workforce level, there are calls for a systematic approach to workforce planning for HCAs to be put in place to ensure that the appropriate skill-mix is in place to provide safe patient care (Estabrooks et al., 2015a). The relationship between skill-mix and patient outcomes is also highlighted with recommendations that there should be adequate RNs to ensure the supervision and mentorship of HCAs to ensure the delivery of quality care (Twigg et al., 2016). The recently published policy document, a *Framework for Safe Nurse Staffing and Skill Mix in General and Specialist Medical and Surgical Care Settings in Adult Hospitals in Ireland* (Department of Health, 2018: 5) recommended that 'the nurse/healthcare assistant grade is 80%/20%, once a safe nurse staffing level exists'.

2.15 Conclusion

Overall, following a comprehensive review of the literature, there is a lack of strong evidence on the impact of HCAs on patient or organisational outcomes. The majority of the results outlined are predominantly from cross-sectional survey data or qualitative interviews; however, stronger studies are beginning to emerge, not least in the area of the impact of skill-mix and patient outcomes, which are based on large data sets and multiple sites; in addition, research designs which allow for causality to be identified are being put in place.

Of the studies that were reviewed it is evident that there are multiple titles and definitions associated with the HCA role; these multitude of definitions are leading to a number of issues outlined in the review such as challenges defining inter-occupational role boundaries in the delivery of healthcare and the place of HCAs in respect of other healthcare professions. Although the review identified a number of wide-ranging definitions, there were a number of core commonalities that described the role; these included, the provision of direct care to patients which is delivered under the supervision and delegation of other healthcare professionals. The review also highlighted a number of factors that are leading to the exponential growth of HCAs providing patient care in both in-patient and community settings; these include the change in the education and training of nursing students, the expanding role of RNs, the increasing need to provide healthcare for a growing cohort of older people - in many case with complex healthcare needs, and the expansion of community based healthcare.

Capturing an accurate profile of the HCA workforce in many countries was difficult due to the lack of data aligned with the unregulated nature of the workforce. There was a consensus in the literature that data on an accurate profile of HCAs was required to enable strategic workforce plans to be put in place. As well as the variety of definitions of HCAs, the literature also highlighted the multiplicity of roles undertaken by this occupational group. A lack of standardisation and definition of the role was resulting in HCAs delivering care based on local and contextual exigencies rather than on any form of strategic planning. It was also highlighted that HCAs, in some settings, have a poorly defined scope of practice. Consequently, the roles undertaken by HCAs are multifaceted and expanding and they range from the provision of fundamental care to more advanced and technical tasks in some countries. In relation to advanced and technical tasks there were mixed reports with some studies identifying that HCAs felt unprepared and pressured to take on these roles with others identifying that the skills of HCAs were underutilised. One of the consequences of the multitude of roles undertaken by HCAs was the blurring of occupational boundaries with other groups of healthcare professionals, in particular RNs. The literature also debated the rationale behind the extension of the HCA roles into areas traditionally the domain of RNs; these reasons ranged from HCAs acting as a relief to RNs in increasingly complex healthcare environments to acting as a substitute for RNs to reduce the costs of delivering healthcare.

The evidence on the association between HCAs and patient outcomes, in particular quality indicators, was limited in the studies reviewed. This was principally due to the research designs used but also due to the methodological difficulties in disaggregating the impact of other healthcare groups from that of HCAs in care settings. The evidence that does exist in this regard came from studies that explored the relationship between skill-mix, that is, the care delivered by RNs and HCAs, and patient outcomes. There were a small number of studies that identified improvements in patient outcomes associated with HCA staffing; however, the majority of studies and systematic reviews reported no association with patient outcomes or an increase in adverse events, including mortality when care was delivered by a higher proportion of healthcare assistants as opposed to RNs. These outcomes were reported in both acute hospital and long-term care settings.

The education and training of HCAs varied greatly not only between countries but also, in many cases, within countries. As a consequence there was a lack of standardisation of the role and difficulties with the transferability of the post from one setting to another. Although a number of countries had different levels of preparation for the HCA role, there was a consensus that, in the programmes available, there was a lack of opportunity to gain clinical experience, curricula content did not match the complexities of healthcare and, HCAs had limited access to continuing education. A number of studies and reports called for the standardisation of the educational provision of HCAs to ensure patient safety.

The unregulated nature of HCAs was also highlighted in studies and reports reviewed and this was seen as an issue for patient safety, professional conduct, educational standards and defining a scope of practice. A number of studies and reports called for the direct regulation of HCAs principally to protect the public but also to enable the monitoring of the HCA workforce as it extended, not only in the delivery of more technical aspects of care, but also expanded into various settings, particularly the community where supervision may not be at the level of hospital settings. Other reasons highlighted for regulating HCAs included the

enhancement of the occupation, as an aid to workforce planning and to control access to employment. There was, however, variability in the number of the reports reviewed on who the body responsible for the regulation of HCAs should be as well as the type of regulation that should be put in place. A number of reports and studies also highlighted arguments against the regulation of the workforce, including costs, constraints on employment, and governance issues.

The relationship of HCAs with other groups of healthcare professionals was generally reported as positive with other occupational groups valuing the role of HCAs in the delivery of healthcare, this was particularly highlighted by RNs. However, there were inconsistencies in both HCAs' experiences of supervision and delegation and RNs' level of preparation to undertake this aspect of their role despite guidance from both professional and regulatory bodies. The patient experience of being cared for by HCAs was reported as being positive; however, patients and their relatives, at times, had difficulties in distinguishing the role from RNs.

Economic evaluations of the impact of HCA staffing were limited. One study that modelled the association between skill-mix and adverse events explored only two outcomes: falls and medication errors. In Ireland, a large scale economic evaluation of the implementation of the Department of Health Framework for Safe Nurse Staffing and Skill-Mix has produced data from a number of pilot wards (six) that demonstrates that, to date, the alteration in staffing and skill-mix is relatively cost neutral. The research has now been expanded to over 30 wards and outcomes will be published over the next few years.

The work situation of HCAs in terms of job satisfaction and turnover demonstrated a complex picture with generally studies reporting that levels of job satisfaction were high; however, rates of turnover were variable. Factors associated with higher levels of job satisfaction and lower levels of HCA turnover or intention to leave included pay, job tenure, preparation for the role, access to continuing education, strong support from management, good levels of supervision and mentorship and lower levels of work related stress.

In conclusion, the literature identified an occupational group that has a number of challenges, not least its position in relation to other healthcare professions, a lack of a delineated job description and the unregulated nature of the occupation in a number of countries. It is also evident that in many countries there has been a lack of strategic planning in determining the future direction of HCAs, this has resulted in the development of a multitude of roles, the role developing according to local contexts and needs and the blurring of occupational boundaries. In relation to workforce planning, there have been moves in some countries to determine an evidence-based skill-mix to ensure that patients receive high quality care; however, one of the issues is a lack of reliable data on the HCA workforce to enable informed decisions to be put in place. The review demonstrated that there is a relative lack of high quality research related to the role, function and impact of HCAs and future policy developments should ensure that programmes of research are aligned to the development of policy guidelines directed at the development of the HCA role.

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Appendix A

Table 2: Data Extraction table

Source and Type of evidence (Author, date, country and title)	Population and Context (e.g. ante-natal, post-natal etc.)	Aim	Core elements ☒Location ☒ Scope of work	Methodologic al process Study design Risk of bias	Level of evidence (JBI)	Relevant findings (the use of HCAs and development of their role)	Key recommendations / Limitations /Gaps
Afzal et al. (2018) Canada “The Role of unregulated care providers in Canada – A Scoping Review”	Older adult population being cared for by unregulated care providers	This review explored the role of unregulated care providers in healthcare systems, their potential role on interprofessional teams and the impact of unregulated care provider’s role on quality of care and patient safety and the education and employment standards.	Scopic Review	An iterative search of published and grey literature was conducted from January 2000 to September 2016 using Medline, CINAHL, SCOPUS and Google. Inclusion and exclusion criteria were applied to identify relevant studies published in English. Low risk of bias	4.b	This review found a total of 63 papers that highlighted the emerging role of the unregulated care provider, particularly the difficulties they face and the lack of a definition regarding their role title and how this can affect patient safety.	The unregulated care provider plays an important role in the Canadian healthcare system and so efforts should be made to define this role along with standards put in place for level of education required and employment standards. No limitations identified

Source and Type of evidence (Author, date, country and title)	Population and Context (e.g. antenatal, postnatal etc.)	Aim	Core elements Location Scope of work	Methodological process Study design Risk of bias	Level of evidence (JBI)	Relevant findings (the use of HCAs and development of their role)	Key recommendations / Limitations / Gaps
Aiken <i>et al.</i> (2017) Belgium, England, Finland, Ireland, Spain and Switzerland "Nursing skill mix in European hospitals: cross-sectional study of the association with mortality, patient ratings, and quality of care"	13, 077 nurses in 243 hospitals and 18, 828 patients in 182 of the same hospitals in the six countries.	"To determine the association of hospital nursing skill mix with patient mortality, patient ratings of their care and indicators of quality of care."	Cross Sectional Study 243 hospitals in 6 countries (Belgium, England, Finland, Ireland, Spain and Switzerland)	Cross-sectional patient discharge data, hospital characteristics and nurse and patient survey data were merged and analysed using generalised estimating equations (GEE) and logistic regression models. Low risk of bias	4.b	Richer nurse skill mix was associated with lower odds of mortality (OR=0.89), lower odds of low hospital ratings from patients (OR=0.90) and lower odds of reports of poor quality (OR=0.89), poor safety grades (OR=0.85) and other poor outcomes (0.80<OR<0.93). In the samples obtained from the six hospitals, there were an average of six caregivers for every 25 patients, four of whom were professional nurses. Substituting one nurse assistant for a professional nurse for every 25 patients is associated with a 21% increase in the odds of dying.	Having HCA's is associated with better outcomes for patients. If the skill mix were to be reduced, and personnel added without professional nurse qualifications may erode quality of safety and may contribute to nurse shortages. No limitations identified
Allan <i>et al.</i> (2016) England "Delegation and supervision of healthcare assistants' work in the daily management of	Interviewed newly qualified nurses, ward managers, and health care assistants.	This paper discusses the invisible learning that newly qualified nurses undertake (i.e. How to follow	Ethnographic case study Three hospitals in England.	Ethnographic case study was carried out over a period of three years in three different hospitals which	3.e	The practice involving "invisible learning" can lead to a grey area around mistakes that newly qualified nurses carry out that lend to a learning experience or that cause a danger for patients The use of simulated situations as	Implications for practice involving making learning more visible for newly qualified nurses – through the use of simulation as part of the nurse training

Source and Type of evidence (Author, date, country and title)	Population and Context (e.g. antenatal, postnatal etc.)	Aim	Core elements ☒Location ☒ Scope of work	Methodological process Study design Risk of bias	Level of evidence (JBI)	Relevant findings (the use of HCAs and development of their role)	Key recommendations / Limitations / Gaps
uncertainty and the unexpected in clinical practice: invisible learning among newly qualified nurses”		supervisors and how to delegate and supervise HCA’s) when they begin their careers in a hospital setting.		involved a series of interviews with participants. Observations notes and interviews were transcribed verbatim by a transcriber. Data were analysed using thematic analysis and both manually and with the qualitative software NVivo. Low risk		part of nurse training and post-qualifying transition might offer the opportunity to make ‘safe mistakes’ in the context of delegation and supervision of HCAs which can be useful for learning purposes.	and post-qualifying transition would assist with this. Not focused on HCA’s
Allen <i>et al.</i> (2014) America “Cost-effectiveness of Nurse Practitioner/Community Health Worker Care to	Patients were identified from medical records using ICD 9 codes and were eligible if they had diagnosed CVD, type 2	This paper reports on the cost-effectiveness analysis of a program of CVD risk reduction delivered by	Randomized Controlled Trial in which 525 patients were randomly assigned to one of two groups: management of CVD risk factors	Randomized Controlled Trial Low risk	1.c	This study provides evidence that a nurse-led team which includes CHWs is an effective model of care. Community health workers are critical members of these teams. They share perspectives and experiences that enhance	This study supports NP/CHW teams using evidence-based treatment algorithms as a cost-effective, successful strategy to implement national guidelines

Source and Type of evidence (Author, date, country and title)	Population and Context (e.g. antenatal, postnatal etc.)	Aim	Core elements ☒Location ☒ Scope of work	Methodologic al process Study design Risk of bias	Level of evidence (JBI)	Relevant findings (the use of HCAs and development of their role)	Key recommendations / Limitations /Gaps
Reduce Cardiovascular Health Disparities”	diabetes, hypercholesterolemia, or hypertension. They had to be African American or Caucasian, ≥ 21 years of age and able to speak and understand English	NP/CHW teams versus enhanced usual care to improve lipids, blood pressure, and HbA1c levels in patients in federally-qualified metropolitan community health centers.	by a NP/CHW team or an enhanced usual care (EUC) group.			trust enabling them to effectively bridge communication gaps between patients and healthcare providers and intervene to decrease barriers to adherence. However, adoption and sustainability of this model of care will require financing mechanisms for CHWs. Funding, reimbursement and payment policies for CHWs must be established to ensure that CHW models are adopted in mainstream health care.	for the management of hyperlipidemia, hypertension, and diabetes in high risk vulnerable populations. This study discusses community health care workers instead of HCA’s specifically.
Allwardt (2008) Nebraska, U.S. Determinants of job separation and future employment choices of nursing aides employed in nursing homes	Nursing aides working in nursing homes (n=243)	To examine demographic and employment characteristics , and economic stressors and their association with nursing aides’ job separation	Nursing homes in Nebraska, U.S.	Observational over 3 years Low risk of bias	Level 3.e	Predictors of nurses’ aides remaining in post were length of time in post and health insurance; while mental or physical health problems were predictors for leaving post. A large proportion of nurses’ aides resumed the profession in another nursing home or hospital for higher wages.	Both monetary compensation and mental and physical health are important factors for remaining in post.

Source and Type of evidence (Author, date, country and title)	Population and Context (e.g. antenatal, postnatal etc.)	Aim	Core elements Location Scope of work	Methodological process Study design Risk of bias	Level of evidence (JBI)	Relevant findings (the use of HCAs and development of their role)	Key recommendations / Limitations / Gaps
Ambrosi et al. (2019) Italy "In-hospital elderly mortality and associated factors in 12 Italian acute medical units: findings from an exploratory longitudinal study"	Older adults in 12 acute medical unit in Italy	"To describe the occurrence of in-hospital mortality among patients admitted to acute medical units and associated factors. Two hypotheses (H) were set as the basis of the study: patients have an increased likelihood to die H1: at the weekend when less nursing care is offered; H2: when they receive nursing care with a skill-mix in favour of Nursing Aides instead	Exploratory Longitudinal study	Data on individual and nursing care variables were collected and its association with in-hospital mortality was analysed by stepwise logistic regression analysis. Low risk	2.c	Those patient receiving less care by RNs at weekends were at increased risk of dying (RR = 2.236, 95 % CI = 1.270–3.937) while those receiving a higher skill-mix, thus indicating that more nursing care was offered by RNs instead of NAs were at less risk of dying (RR = 0.940, 95 % CI = 0.912–0.969).	This paper recommended that skill ix be redefined so as to increase RN's at the weekend to match the number at weekdays. A major limitation of this study was the focus on Registered staff nurse's role at the weekends instead of HCA's.

Source and Type of evidence (Author, date, country and title)	Population and Context (e.g. antenatal, post-natal etc.)	Aim	Core elements Location Scope of work	Methodological process Study design Risk of bias	Level of evidence (JBI)	Relevant findings (the use of HCAs and development of their role)	Key recommendations / Limitations / Gaps
		of Registered Nurses.”					
Arain et al. (2017) Canada “Are healthcare aides underused in long-term care? A cross-sectional study on continuing care facilities in Canada”	Managers of the primary care facility in Canada were eligible to participate.	“The purpose of this research was to examine the differences in HCAs training and utilisation in continuing care facilities”	Western Canada providence. Cross sectional mixed method study	This study conducted a mixed-method study on HCA utilisation in continuing care with the view to measure the primary outcomes of the involvement of HCA’s in medication assistance and other care activities Low risk	4.b	130 completed surveys showed that approximately 81% of HCAs were fully certified. Variations were found in how HCAs were used in SL and LTC facilities. Overall, HCAs in SL were more likely to be involved in medication management such as assisting with inhaled medication and oral medication delivery. A significantly larger proportion of survey respondents from SL facilities reported that medication assistance training was mandatory for their HCAs (86%) compared with the LTC facilities (50%) (p value <0.01).	This study found that although the utilisation of HCAs varies between facilities, it is recommended that the role of HCA should be expanded to lead to cost-effective and more efficient care. The findings in this study are useful for the policy-makers to ensure the appropriate use of resources. No limitations were identified
Arthur et al. (2017) England “Can Health-care Assistant Training improve the relational care	Health care assistants and they care they give to older adult patients in hospital setting.	This paper looked at HCAs caring for older people and sought to design a relational care	Randomised controlled trial – Three Acute NHS hospital trusts in England	A telephone survey of all NHS hospital trusts was set up to assess current HCA training provision, a	1.c	The biggest challenge for HCA training is getting HCAs released from ward duties. Older people and careers are aware of the pressures that ward staff are under but good relationships with care staff determine	The intervention was successful however no conclusions can be drawn from it. “Limitations: This was an intervention development and

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of older people? (CHAT) A development and feasibility study of a complex intervention”		training intervention for HCAs and assess the feasibility of a cluster randomised controlled trial to test the new intervention against HCA training as usual (TAU).		focus group of older people and careers was conducted and semi structured interviews with HCAs and other care staff was set up to explain the intervention. Low risk		whether or not their experience of hospital is positive. HCAs have training needs related to ‘difficult conversations’ with patients and relatives; they have particular preferences for learning styles that are not always reflected in available training.	feasibility study so no conclusions can be drawn about the clinical effectiveness or cost-effectiveness of the intervention”
Bach <i>et al.</i> (2008) England “Role redesign in a modernised NHS: the case of health care assistants”	Health care assistants in a hospital setting	This paper looked at the role design of HCAs and how the role varies to such a degree in care compared to RN’s.	Two acute hospital trusts in London Paired comparisons allowed exploration of differences in the use of HCAs, with the involvement of two London trusts allowing for some control over socio-economic and labour market factors,	The main fieldwork technique was interviewing. In total, 60 semi-structured interviews were conducted, divided equally between the two NHS trusts. This comprised	4.b	Our evidence suggests that HCAs were taking more responsibility for direct care, but the role of HCAs and the degree of legitimacy attached to it differed, reflecting underlying differences in the nursing model subscribed to by nurses at each trust.	“The main contribution of this article has been to document and explain variations in the role of HCAs between different workplaces, confirming the presence of competing ideologies of the nursing workforce. Role redesign is shaped by local organisational

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			relating to the distinctive labour market in London.	interviews with 34 HCAs and 26 staff nurses, sisters and senior nurses. Each interview lasted between 25 and 90 minutes and was recorded digitally on an MP3 player. Low risk			context and does not result in the uniform and linear upskilling trajectory implied by the Department of Health nursing HR policy” Limitation: Fieldwork was confined to two case study tests.
Backhaus et al (2014) America “Nurse Staffing Impact on Quality of Care in Nursing Homes: A Systematic Review of Longitudinal Studies”	Nursing staff and Healthcare assistants in nursing homes.	This study sought to summarise the findings of recent longitudinal studies in relation to the relationship between nurse staffing and quality care in nursing homes.	Not specified Systematic review of longitudinal studies	The databases PubMed, CINAHL, EMBASE, and PsycINFO were systematically searched. Studies were eligible if they (1) examined the relationship between nurse staffing and QoC	5.a	No consistent relationship was found between nurse staffing and Quality of care. Higher staffing levels were associated with better as well as lower Quality of care indicators. For example, for restraint use both positive (i.e., less restraint use) and negative outcomes (i.e., more restraint use) were found. With regard to pressure ulcers, we found that more staff led to fewer pressure ulcers and, therefore, better results, no	No consistent evidence was found for a positive relationship between staffing and Quality of care. Limitation: Not HCA focused

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				outcomes, (2) included only nursing home data, (3) were original research articles describing quantitative, longitudinal studies, and (4) were written in English, Dutch, or German. The methodological quality of 20 studies was assessed using the Newcastle-Ottawa scale, excluding 2 low-quality articles for the analysis Low risk		matter who (registered nurse, licensed practical nurse/ licensed vocational nurse, or nurse assistant) delivered care.	
Ball et al. (2014) England	2917 Registered Nurses	"To examine the nature and	Cross-sectional survey Acute care hospitals	A cross-sectional survey design	4.b	"Most nurses (86%) reported that one or more care activity had been left	Nurses working in English hospitals report that care is

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"Care left undone 'during nursing shifts: associations with workload and perceived quality of care"	working in 401 general medical or surgical wards in 46 general acute National Health Service hospitals in England.	prevalence of care left undone by nurses in English National Health Service hospitals and to assess whether the number of missed care episodes is associated with nurse staffing levels and nurse ratings of the quality of nursing care and patient safety environment."		was used. The methodology of the survey in England followed a protocol established by the international RN4Cast consortium of 15 countries. The study focused on general medical and surgical wards in acute hospitals. Low risk		undone due to lack of time on their last shift. Most frequently left undone were: comforting or talking with patients (66%), educating patients (52%) and developing/updating nursing care plans (47%). The number of patients per registered nurse was significantly associated with the incidence of 'missed care' (p<0.001). A mean of 7.8 activities per shift were left undone on wards that are rated as 'failing' on patient safety, compared with 2.4 where patient safety was rated as 'excellent' (p <0. 001)."	frequently left undone. Care not being delivered may be the reason low nurse staffing levels adversely affects quality and safety. Hospitals could use a nurse-rated assessment of 'missed care' as an early warning measure to identify wards with inadequate nurse staffing. Limitation: This study does not report whether the staff are either registered or non-registered staff.
Ball et al. (2016) Sweden A cross-sectional study of 'care left	RNs and support workers (n=10174)	To determine factors associated with variation in 'care left undone' by Registered Nurses (RNs)	General medical and surgical wards in 79 acute care hospitals	Cross-sectional survey Low risk	Level 4.b	The time of shift, patient mix, nurses' role, practice environment and staffing have a significant relationship with care left undone	Research is needed to identify how these factors relate to one another and whether care left undone is a predictor of adverse patient outcomes

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undone' on nursing shifts in hospitals.		in acute hospital wards in Sweden				Support worker staffing has little effect on care left undone	
Baughman and Smith (2012) Labor mobility of the direct care workforce: Implications for the provision of long-term care	Direct care workers in long-term care settings	To provide analysis of the dynamics of labor supply of direct care workers in long-term care settings	Health care sector; private households, non-nursing residential facilities; other social services U.S. excluding Maine, Vermont, North Dakota, South Dakota, and Wyoming	Observational over 5 years Low risk of bias	Level 3.e	On average direct care workers remain in post of 9.7 months Low wages and disability, usually back problems, are the main reasons for direct care workers' turnover Of those that leave their post less than 1/3 stay within the sector Wages has a modest effect on preventing turnover	Turnover for direct care workers will increase in the future as the population continues to age and requires increased care The study focused on women only
Berta et al. (2013) Canada "The evolving role of health care aides in the long-term care and home and community care sectors in Canada"	Six industry experts participated in a focus group. Three individuals were in high-level management positions with three organizations that represent	This paper looks understanding the nature and scope of the HCA work, and of the factors that shape the evolving role of HCAs and the factors that impact	Canada Qualitative Study	A focus group was tape recorded and transcribed verbatim by a professional transcriptionist contracted by the principal investigators. Two of the investigators	4.b	The major themes found in this study in relation the role of a HCA were 1. Hat HCAs do, 2. Factors that influence what HCAs do and 3. HCA role preparations.	A new reliance is upon integrated team based care delivery means there is now an increasing reliance on HCAs and they are being asked to carry out more and more complex tasks. This paper shows that not only is there a demand

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	<p>HCAs, including PSWs, in Ontario, and nationally; one individual was an executive with an entity that represents organizations employing HCAs/PSWs in the HCC sector; and two participants were from two associations representing for profit and not-for profit employer organizations of PSWs/HCAs in the long-term institutional care sector.</p>	<p>how and where they work.</p>		<p>reviewed the transcript and identified preliminary themes that emerged from the transcript data. A draft of this initial analysis and anonymized copies of the focus group transcript was then distributed to all project team members for review. Low risk</p>			<p>to further investigate the role of the HCA, there is a need to readdress the resource interdependencies across health care sectors that can influence the provision of care to older Canadians. No Limitations identified.</p>

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<p>Braeseke et al. (2013).</p> <p>Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, Germany, Ireland, Italy, The Netherlands, Poland Slovenia, Spain, United Kingdom, Switzerland.</p> <p>Final report on the Project: Development and Coordination of a Network of Nurse Educators and Regulators (SANCO/1/2009) to the European Commission, DG SANCO</p>	Healthcare assistants and “lower skilled nurses” within the 14 EU member states and Switzerland	To initiate a Europe-wide exchange about educational standards and legal regulations of employment for assistant staff within the healthcare sector	<p>current situation in education and employment for healthcare assistant</p> <p>identify best-practice examples for challenges in healthcare delivery and mobility issues</p> <p>derive recommendations for development of training programmes</p>	<p>Systematic reviews and transnational data on HCAs</p> <p>Low risk</p>	Level 3.a and 3.e	<p>Roles included: fundamental care, social and emotional support to patients; administrative processes; sterilisation of instruments; administration of medications; vital sign obs; wound dressings</p> <p>tasks are delegated to HCAs and supervised by RNs</p> <p>Entry requirements to HCA education and training programmes across fifteen European countries</p> <p>Training ranged from one to four years.</p> <p>Curricula consisted of theoretical and practical components with variable ratios of clinical to practical training</p> <p>Regulation varied from federal governments or regional authorities, federal offices, ministries of health, education and labour to</p>	<p>Clear definition of role</p> <p>training should consist of 2 to 3 years full-time study at level 4 European Qualifications framework in state accredited institutions and lead to a recognised certificate or license</p> <p>Clinical components should take place in various care settings</p> <p>education of HCAs should encompass a number of competencies:</p> <ul style="list-style-type: none"> • subject specific • social-communicative • methodological • personal competencies

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						official nursing regulatory bodies	
Brant and Leydon (2009) England “The role of the health-care assistant in general practice”	Practice nurses, HCAs, practice managers and GPs from 38 practices across South-West Hampshire.	This study aimed to describe general practice colleagues’ perceptions of the HCA role; identify key areas of inter-professional agreement and disagreement about the role; and describe the likely impact of these on the direction and development of HCAs	South-West Hampshire Multiple-method qualitative study.	This study used focus groups and semi-structured interviews that were set in general practices across one primary care trust. Low risk	4.b	Five key themes were identified as important and the first three of these were: communication, team working and the individuality of the HCA and the general practice. These three themes were present throughout the data corpus and appeared to influence the direction in which the HCA role developed. The final two core themes identified were role definition and general role structure.	This article shows clearly how communication and teamwork are essential in successfully developing a new role and how a failure to fully address these may negatively affect the role development. It has highlighted how varied the roles and responsibilities of a new HCA role can be and how uncertain staff are about the possible direction of the role in the future. Limitation: Small sample size
Butler et al. (2011) Canada “Hospital nurse staffing models	Participants were patients and nursing staff working in hospital settings	“Our aim was to explore the effect of hospital nurse staffing models on	Canadian hospitals Cochrane Review	Seven reviewers working in pairs independently extracted data	1.a	Out of the 6,202 potentially relevant studies found, 15 were included in to the review. The papers found showed evidence in relation to the impact of replacing	The evidence in relation to the impact that replacing Registered Nurses with unqualified nursing

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and patient and staff-related outcomes”		patient and staff-related outcomes.”		from each potentially relevant study. The following databases from inception through to May 2009: Cochrane/EPOC resources (DARE, CENTRAL, the EPOC Specialised Register), PubMed, EMBASE, CINAHL Plus, CAB Health, Virginia Henderson International Nursing Library, the Joanna Briggs Institute database, the British Library, international		Registered Nurses with unqualified nursing assistants is unclear however some specialist support staff such as dietary assistants may have an important impact on patient outcomes.	assistants has on patient outcomes is very limited. However, it is suggested that specialist support staff, such as dietary assistants, may have an important impact on certain patient outcomes. The limitations of the studies included highlight the need for larger studies, preferably using an RCT, CCT or CBA design, and for ITS studies that use several data points pre- and post-intervention, and that draw on primary data

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				theses databases, as well as generic search engines Low risk			
Butler-Williams et al. (2010) United Kingdom "The hidden contribution of the health care assistant: a survey-based exploration of support to their role in caring for the acutely ill patient in the general ward setting"	374 Health care assistants in hospital settings.	"To examine the feelings, support and feedback available to health care assistants (HCA) when caring for acutely ill ward patients"	Two urban district general hospitals in South West of England. Qualitative Study	A questionnaire was developed as the data collection method. This was developed through a combination of expert opinion, literature review and was based upon a previous qualitative study. Likert scales which ranged from strongly agree (1) to strongly disagree (5)	4.b	The overall study sample consisted of 128 completed questionnaires. Feelings of HCAs - The majority of respondents (97%) indicated they felt confident in knowing when to call for help should a patient become unwell, and felt calm regarding subsequent care required (88%). Only 8% described feeling a lack of control when caring for these unwell patients. Emotions associated with providing this care included anxiety in 34% of respondents. Concerns regarding the lack of attention to other patients whilst their time was spent with the acutely ill patient (30%) was highlighted.	This study has provided insight regarding HCA contribution to acute patient care within a general ward. Recognition is needed of the emotions and stressors associated with caring for the acutely ill ward patient that HCAs suffer the same as RNs. Limitations: Low response rate and female gender bias.

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				were included; these were deliberately constructed to minimize response set bias. Data analysis used both MICROSOFT ACCESS and EXCEL software programmes (Microsoft Corporation Redmond, WA, USA) Low risk		Support of HCAs - The ward manager and/or ward RN were utilized the most (82, 89%), but interestingly critical care outreach, other HCAs and ward doctors were seen as key support providers (30, 69 and 55%, respectively). There was a low uptake on trust counselling services (13%). Feedback for HCAs – 45% indicated the received very little feedback and of those who did receive feedback stated they received it from; RN (49%), followed by the ward manager (37%) and 27% from their HCA colleagues.	
Castle and Anderson (2011) “Caregiver Staffing in Nursing Homes and their influence on Quality of Care”	Nursing home administrators (NHAs) from 3941 nursing homes were recruited.	This study investigates the relationship of caregiver staffing levels, turnover, agency use, and professional staff mix with	US Nursing Homes Longitudinal Review	Data was collected from nursing home administrators , nursing home compare, from an online survey and the area resource file.	4.d	The results of this study show that staffing characteristic variables and quality indicators show a higher number of staff is generally associated with a change to better quality of care in nursing homes.	This paper concludes that more staff leads to better care in nursing homes. The limitations they state are the quality indicators chosen. Other limitations not stated are the poor quality of the

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		quality of care so as to overcome the weaknesses found in past research.		The staffing variables of RNs, Licensed Practical Nurses and Nurse Aides were measured quarterly from 2003 through 2007 and came from 2839 facilities. Regression analyses was used to analysis the data. Low risk			paper in relation to information on HCAs or care assistants.
Castle and Ferguson-Rome (2015) America “Influence of Nurse Aide Absenteeism on Nursing Home Quality”	Nursing Aides in nursing home settings	“In this analysis, the association of nurse aide absenteeism with quality is examined. Absenteeism is the failure of nurse aides to report for work when	US nursing homes. Mixed Methods Review	Primary data came from a survey of nursing home administrators (NHAs) and was used to identify staffing information. Secondary data came	2.c	An average rate of 9.2% for nurse aide absenteeism was reported in the prior week. This study demonstrated that high levels of absenteeism are associated with poor performance on all four quality indicators examined.	Implications for future research show that this is one of the first studies to investigate absenteeism in nursing homes. This can incur huge costs to the nursing homes and shows the impact

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		they are scheduled to work.”		from the Online Survey Certification and Reporting (OSCAR) data and were used to identify characteristics of the nursing homes. Nursing Home Compare was used to identify quality indicators. The Area Resource File (ARF) was used to identify characteristics of the market. Low risk			absenteeism can have on quality of care. Limitations: Very little on HCAs
Cavendish (2013) England “An Independent Review into Healthcare Assistants and	Health care assistants and support workers working in the NHS.	“The Cavendish Review was established to investigate what can be done to ensure that all	Hospitals and Nursing homes in England A series of focus groups, seminars, online surveys and consultations	Qualitative Review that in 14 weeks, focused as much as possible on the frontline of care,	4.d	The most common themes identified testify to the fact that HCAs are now at bedsides more than RNs and therefore the NHS needs to begin seeing them as a valuable resource.	Recommendations from this review are as follows; 1. HEE should develop a “Certificate of Fundamental Care”, in conjunction with

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Support Workers in the NHS and social care settings”		people using services are treated with care and compassion by healthcare assistants and support workers in the NHS and social care settings.”	were set up across England.	talking to staff in hospitals and care homes, meeting with domiciliary care workers, healthcare assistants, personal assistants, nurses and registered managers and through the methods of focus groups, surveys and interviews, demonstrate common themes of the support worker role and the quality of care they provide.			the Nursing and Midwifery Council (NMC), employers, and sector skills bodies. 2. A “Higher Certificate of Fundamental Care” should also be developed, linked to more advanced competences to be developed and agreed by employers. 3. The Care Quality Commission should require healthcare assistants to have the above certificate. 4. The NMC should recommend how best to draw elements of the practical nursing degree curriculum into the Certificate. 5. The HEE should ensure more

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							adequate funding for these courses. 6. Their needs to be more support for employees. No limitations identified
Choi and Johantgen (2012) America "The Importance of Supervision in Retention of CNAs"	Certified nursing assistants (CNAs) in nursing homes.	This study examined the relationships of work-related and personal factors to CNA job satisfaction and intent to leave.	Cross sectional Review	Linked data from the 2004 National Nursing Home Survey and the 2004 National Nursing Assistant Survey were analyzed using multilevel logistic regression. Personal factors such as age, education, and job history, were related to intent to leave but not to job satisfaction.	4.b	Results show that CNA job satisfaction and intent to leave significantly varied across nursing homes however it was shown that CNAs who had high job satisfaction were 72% less likely than dissatisfied CNAs to intend to leave. Supportive supervision, and other work related factors such as feeling valued by employer, employee benefits and low rates of work related injuries led to higher levels of job satisfaction among CNAs.	There is no simple solution to increase CNA job satisfaction and retention, however supportive supervision may be one of the main factors to help with both job satisfaction and intent to leave among CNAs. Limitations identified in this study were The 2004 NNAS was a cross-sectional survey so that this study does not imply causal relationships of the relevant factors to job satisfaction and intent to leave among CNAs.

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Commodore et al. (2009) Canada "Quality of care in for-profit and not-for-profit nursing homes: systematic review and meta-analysis"	Observational studies and randomised controlled trials investigating quality of care in for-profit versus not-for-profit nursing homes.	"To compare quality of care in for-profit and not for-profit nursing homes"	Canada Systematic Review	Systematic review and meta-analysis of observational studies and randomised controlled trials investigating quality of care in for-profit versus not-for profit nursing homes using 18 bibliographical databases, personal files, consultation with experts, reviews of references of eligible articles, and searches of PubMed (for related articles) and SciSearch (for articles citing	1.b	1. 8827 citations, of which 956 were judged appropriate for full text review. 2. 82 articles that met inclusion criteria were summarised, and results for the four most frequently reported quality measures were pooled. 3. Meta-analyses suggested that not-for-profit facilities delivered higher quality care than did for-profit facilities for two of the four most frequently reported quality measures: more or higher quality staffing (ratio of effect 1.11, 95% confidence interval 1.07 to 1.14, P 0.001) and lower pressure ulcer prevalence (odds ratio 0.91, 95% confidence interval 0.83 to 0.98, P=0.02)	This systematic review and meta-analysis of the evidence suggests that, on average, not-for-profit nursing homes deliver higher quality care than do for-profit nursing homes. No limitations identified

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				key publications. Low risk			
Cookson and McGovern (2014). The Cost-Effectiveness of Nurse Staffing and Skill Mix on Nurse Sensitive Outcomes	Skill-mix in acute adult inpatient wards	To estimate the cost effectiveness of altering nurse staffing and skill mix on outcomes (namely falls and drug errors) of care in acute, adult inpatient wards	Acute inpatient wards	Cost effective analysis Low risk	Level 4	The incremental cost effectiveness ratio was calculated at £1,412 per fall avoided and £127,823 per drug error avoided A 60% RN skill-mix or higher , was associated with fewer falls; a 50% skill-mix or was associated with a greater number of falls. There was less consistency between skill-mix and the association with drug errors. Changing skill-mix to reduce fall may be cost effective if the cost exceeds £1,412 per fall. Altering skill-mix is unlikely to result in cost-effectiveness for drug error.	The evidence on cost analysis available was limited Much of the literature points towards a relationship between registered nurse numbers and improved outcomes which may not be possible to cost at this point. National representative datasets need to combine ward level staffing with patient level characteristics and outcomes in order to accurately analyze costs.

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Dahlke and Baumbusch (2015) Canada “Nursing teams caring for hospitalised older adults”	Registered Nurses in a hospital setting.	“To offer an explanation of how registered nurses’ are providing care to hospitalised older adults in nursing teams comprised of a variety of roles and educational levels”	Two hospital units in two different health authorities in Canada. Qualitative Review	Thematic analysis of data that were collected in a previous grounded theory study. Low Risk	4.b	The themes of scrutinised skill mix and working together highlighted how the established nursing value of reciprocity is challenging to enact in teams with a variety of scopes of practice. The value of reciprocity both aided and hindered the nursing team in engaging in team behaviors to effectively manage patient care.	Educators and leaders could assist the nursing care team in re-thinking how they engage in teamwork by providing education about roles and communication techniques to support teams and ultimately improve nursing care. Limitations: This study was limited by size and occurring in one geographical region of one country
Decker et al (2009) America “Intrinsic Job Satisfaction, Overall Satisfaction, and Intention to Leave the Job Among Nursing	Nursing assistants in nursing homes	This paper investigated the predictors for job satisfaction, overall satisfaction and intention to leave among	America Telephone Interview Survey (Mixed Methods)	Cross sectional telephone interview survey study – The study took data from a 2004 nationwide study of NAs	4.b	This study showed that if the NA experienced positive assessment or feedback from their supervisor, they were more likely to have overall intrinsic satisfaction. Another predictor for intrinsic satisfaction was level of pay. It was shown that an overall level of	Intrinsic satisfaction and extrinsic job factors amenable to change appear central to NAs’ overall satisfaction and intention to leave. A facility may be able to improve extrinsic job factors

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Assistants in Nursing Homes”		nursing assistants (NAs) in Nursing Homes.		in which NAs gave their views about their work and nursing homes where they worked. 2,897 employees were interviewed from 120 facilities. Risk not specified		intrinsic satisfaction led to overall job satisfaction in NAs and they had less of an intention to leave.	that improve NAs 'job-related affects, including intrinsic satisfaction. Limitation: Did not look at the NAs coworker environment
Dellefield et al (2015) England “The Relationship Between Registered Nurses and Nursing Home Quality: An Integrative Review”	Registered Nurses in nursing homes (NH)	This review made an effort to advance the evidence supporting the proposition that RNs add value to NH residents' experiences both directly and through the level of RN staffing and indirectly through the	Nursing Homes in the United Kingdom, Germany, Norway, and Sweden. Scopic Review	Combinations of key terms were used including: registered nurse, nursing home, quality, nursing skill mix, RN scope of practice, quality of life, quality of care, deficiency citations, nurse staffing, work	4.b	67 studies reviewed used various types of designs: cross-sectional (n=33); mixed methods (n=3); longitudinal (n=13), qualitative (n=10); descriptive (n=6); and cohort (n=2) designs. NHs or aged-care facilities representing six nations were included: US (n=60); Canada (n=4); United Kingdom (n=2); Germany (n=1); Norway (n=1); and Sweden (n=1). Most of the studies included in this review consistently reported	Conducting research on the relationship of RNs and NH quality must continue, in spite of the persistent methodological challenges presented to researchers. For both the advancement of nursing as an applied science and the benefit of society at large, nursing researchers

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		level of RN staffing and indirectly through the clinical leadership that they provide to members of the nursing skill mix		environment, and Minimum Data Set (MDS). Research studies and literature published in English between 2008 and 2014 were searched.		that higher RN staffing and higher ratios of RNs in the nursing skill mix are related to better NH quality. The strongest evidence supporting a causal relationship between higher RN staffing levels, higher RN ratios within the nursing skill mix, and quality indicators is found in several longitudinal studies	are challenged to better demonstrate how the increased presence of a RN on each shift has the potential to enhance the cost effectiveness, efficiency, and quality of NHs. Limitation: Lack of standardization of measurements.
Donoghue and Castle (2009) America "Leadership Styles of Nursing Home Administrators and Their Association With Staff Turnover"	2, 900 Nursing Home Administrators (NHA) took part	"The purpose of this study was to examine the associations between nursing home administrator (NHA) leadership style and staff turnover"	Mixed methods survey	Data from the National Nursing Home Turnover Study (NNHTS) were utilized to measure the leadership styles of NHAs and the turnover levels in their facilities for caregiver staff. Low risk	4.b	The complete model estimates indicate that NHAs who are consensus managers (leaders who solicit, and act upon, the most input from their staff) are associated with the lowest turnover levels, 7% for RNs, 3% for LPNs, and 44% for NAs. Shareholder managers (leaders who neither solicit input when making a decision nor provide their staffs with relevant information for making decisions on their own) are associated with the highest turnover levels,	The findings indicate that NHA leadership style is associated with staff turnover, even when the effects of organizational and local economic conditions are held constant. Because leadership strategies are amenable to change, the findings of this study may be used to develop policies for lowering staff turnover.

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						32% for RNs, 56% for LPNs, and 168% for NAs.	Limitations: The data is not longitudinal, so one cannot determine if NHA leadership style causes lower turnover or if lower turnover leads NHAs to adopt different leadership styles.
Drennan et al. (2018). Ireland Evaluation of the 'Pilot Implementation of the Framework for Safe Nurse Staffing and Skill-Mix', Report 3; Pilot Wards	RNs and HCAs in acute adult medical and surgical wards (n=6)	measure the impact of implementing the "Framework" recommendations on nurse sensitive patient outcomes, staffing outcomes and organisational factors	Six pilot wards in three acute adult hospitals (level 4, 3 and 2) in Ireland	Mixed methods, pre-test post test experimental design: longitudinal data; cross-sectional data from RNs and HCAs and patients; semi-structured interviews with staff Two wards acted as control group.	Level 2.d	In wards that received a staff uplift and the implementation of the 80/20 skill-mix there was: a substantial reduction in agency hours; a reduction in adverse events; improvements in respondents' perceptions that wards were adequately staffed and resourced. Staff (RNs and HCAs) perceived that the working environment became less complex with an increase in time available to deliver care and quality of care delivered as good or	Framework recommendations should be rolled out at a National level, backed up by a workload management system The nursing workforce stabilized impacting positively on a number of outcomes with positive implications for future recruitment and retention of staff; provision of high quality care;

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				Low risk of bias		excellent increased, and levels of job satisfaction increased. The proportion of care left undone and delayed events reduced.	improvements in the economic cost of patient care and reduction of agency use
Estabrooks et al. (2015a) Canada "Who is looking after Mom and Dad? Unregulated workers in Canadian Long-Term Care Homes"	1,381 care aides from 30 urban nursing homes.	This article investigated the workforce providing the majority of direct care to the elderly population in nursing homes.	30 urban nursing homes in three Canadian Prairie Provinces.	All data were collected within the Translating Research in Elder Care (TREC) study, a five-year research program seeking to identify modifiable features of organisational context that are associated with better resident and staff outcomes in LTC home settings. The study	4.b	A total of 1,381 health care aides took part in this study. They reported moderately high levels of burnout and a strong sense of their work's worth. Few respondents reported attending educational sessions. This direct caregiver workforce is poorly understood, has limited training or standards for minimum education, and training varies widely across provinces. Workplace characteristics affecting care aides reflect factors that precipitate burnout in allied health professions, with implications for quality of care, staff health, and staff retention.	At present in Canada, we can offer only a partial and unsatisfying response to the question, "Who is looking after Mom and Dad?" Further research will provide partial information; full information and the necessary initiatives to optimize this workforce will require action on the part of policy makers. Limitations: The findings only reflect the care aides in urban areas of Canada not rural areas.

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				investigated particular variables in relation to care aides: demographics, work-related variables, health status and burnout, and continuing education.			
Estabrooks et al (2015b) Canada “The Influence of Organizational Context on Best Practice Use by Care Aides in Residential Long-Term Care Settings”	1262 care aides in 25 nursing homes were recruited, in 3 Canadian prairie provinces.	“This study assessed individual and organizational context (work environment) factors that influence use of best practices by care aides (nursing assistants) in nursing homes.”	Canada Cross sectional Study	This study used hierarchical linear modeling to one assess the amount of variance in use of best practices, as reported by care aides, that could be attributed to individual or organizational factors, and two, identified	4.b	At the individual level, statistically significant predictors of instrumental use of best practices included sex, age, shift worked, job efficacy, and belief suspension. At the unit level, significant predictors were social capital, organizational slack (staffing and time), number of informal interactions, and unit type. A	This study suggests that context plays an important role in care aides’ use of best practices in nursing homes. Individual characteristics played a more prominent role than contextual factors in predicting conceptual use of best practices. No limitations identified

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				the predictors of best practices use by care aides Low risk			
Glackin et al (2016) England “The Evolving Role of the Healthcare Assistant and its Implications for Regulation in the Republic of Ireland – A Case Study Approach”	Healthcare assistants, senior managers and other key stakeholders in a hospital settings	This thesis investigates the pattern and motivation of professional regulation in healthcare, public interest theory and public theory in relation the HCAs.	Ireland Case Study	An explorative in-depth case study approach combining a number of different data-gathering methods, including focus groups with HCAs, semi-structured interviews with senior managers and other key stakeholders and document analysis, was adopted. Not stated	4.d	The findings reveal the existence of a three tiered HCA workforce – qualified, part qualified and unqualified that is a source of confusion at the interface between HCAs and registered nurses for delegated tasks and subsequently viewed as a risk to patient safety.	This study makes a valuable contribution to a neglected area of knowledge by presenting for the first time the views of HCAs and senior managers regarding professional regulation for the evolving HCA workforce in Ireland. The study also makes a valuable contribution to practice by developing a series of recommendations regarding regulation and governance of the HCA workforce. No limitations identified

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Griffiths and Robinson (2010) England "Moving forward with healthcare support workforce regulation"	Healthcare assistants	"The review had three objectives: 1. Assess the evidence of risks presented to public protection from an unregulated healthcare support workforce and the evidence of benefits of regulation. 2. Identify and consider key questions to be addressed in developing models of regulation. 3. Make recommendations for further work required in taking healthcare support"	England Scoping Review	The review appraised published sources in relation to evidence that unregulated healthcare workforce might present a risk to public safety and for evidence of benefits or regulation to assist with going forward developing new regulations.	4.b	Little evidence was found that demonstrates that regulation would reduce the risk to the public that is associated with HCSWs.	One of the main recommendations from this review is the government needs to adopt a more holistic rather than a piecemeal approach to HSCW regulation. No limitations were identified.

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		worker regulation forwards"					
Griffiths et al (2014) Europe "Nurses' Shift Length and Overtime Working in 12 European Countries The Association With Perceived Quality of Care and Patient Safety"	31, 627 Registered Nurses in general medical/surgical units within 488 hospitals across 12 European countries.	The aim of this paper was to describe the shift patterns of European nurses and investigate whether shift length and working beyond contracted hours (overtime) is associated with nurse-reported care quality, safety, and care left undone.	488 hospitals in 12 European countries. Cross-sectional survey	Data were collected in 12 European countries: Belgium, England, Germany, Finland, Greece, Ireland, The Netherlands, Norway, Poland, Spain, Sweden, and Switzerland. The survey was mailed or directly distributed to RNs in acute general hospitals between June 2009 and June 2010.	4.b	A total of 50% of nurses worked shifts of ≤ 8 hours, but 15% worked ≥ 12 hours. Typical shift length varied between countries and within some countries. Nurses working for ≥ 12 hours were more likely to report poor or failing patient safety [odds ratio (OR)=1.41; 95% confidence interval (CI), 1.13–1.76], poor/fair quality of care (OR=1.30; 95% CI, 1.10–1.53), and more care activities left undone (RR=1.13; 95% CI, 1.09–1.16). Working overtime was also associated with reports of poor or failing patient safety (OR=1.67; 95% CI, 1.51–1.86), poor/fair quality of care (OR=1.32; 95% CI, 1.23–1.42), and more care left undone (RR=1.29; 95% CI, 1.27–1.31).	European registered nurses working shifts of ≥ 12 hours and those working overtime report lower quality and safety and more care left undone. Policies to adopt a 12-hour nursing shift pattern should proceed with caution. Use of overtime working to mitigate staffing shortages or increase flexibility may also incur additional risk to quality. Limitation: It is not possible to infer causality from these results.

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Griffiths et al. (2018) UK The association between nurse staffing and omissions in nursing care: A systematic review	Quantitative studies in acute hospitals	To identify nursing care most frequently missed; to determine the association of missed care with staffing	Studies measuring the association between staffing and missed care	Systematic review of quantitative studies from Cochrane Library, CINAHL, Embase and Medline Low risk of bias	Level 2.b	Lower levels of staffing were consistently associated with higher levels of missed care The addition of support workers does not generally reduce the level of missed care and may even increase it if the skill mix is diluted	Missed care may be a good indicator of poor staff adequacy and/or diluted skill-mix
Han et al. (2014) United States of America "Associations between state regulations, training length, perceived quality and job satisfaction among certified nursing assistants: Cross-sectional	2897 Certified nursing assistants in 580 nursing homes in the USA.	"This study investigated the associations among state level regulations, initial training quality and focus, and job satisfaction in certified nursing assistants."	United States of America Cross-Sectional secondary data analysis	Analyses were conducted using SAS-callable SUDAAN to correct for complex sampling design effects in the National Nursing Home Survey and National Nursing	4.b	The certified nurses who responded reported higher levels of job satisfaction for those who worked in states that required extra hours of training for certification. Variables such as a higher level of problem solving skills taught and knowledge given, all assistants for them to feel more competent and prepared in their roles.	Certified nursing assistants with additional initial training were more likely to report that their training was of high quality, and this was related to job satisfaction. Job satisfaction was also associated with receiving more training that focused on work life skills.

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secondary data analysis"				Assistant Survey. Models were adjusted for personal and facility characteristic. Low risk			No limitations identified.
Hasson and McKenna (2011) Ireland "Greater clarity in roles needed"	Healthcare assistants	To discuss and review the role of healthcare care assistants	Not specified Narrative review	The authors of the paper discuss the role of healthcare assistants from training to employment. Low risk	4.b	The role of healthcare assistant is as of yet still undefined. It seems that duties are assigned to HCAs based on years of experience rather than skills and competencies. The HCA role was introduced to assist RNs with workload and they have taken up the mantle of spending the most time at patient bedside in the past number of years.	There needs to be a resolution in defining the HCA role. No limitations identified.
Hasson et al. (2012) Northern Ireland "Perceptions of the unregistered healthcare worker's role in pre-registration	59 unregistered healthcare workers in four different hospitals in Northern Ireland.	"To explore the unregistered healthcare worker's role and influence on student nurses' clinical learning experience."	A sequential exploratory mixed method research design	Reporting on the final qualitative phase of a mixed method sequential research study, semi-structured interviews	4.b	Findings show the diversity of the unregistered healthcare workers' roles and confirm that they play a major part in the education of student nurses with regards to basic, clinical, and non-clinical tasks, with and without the approval of registered staff. However,	Mechanisms of workforce planning need to pay particular attention to the expanding role of unregistered healthcare workers as 'role drift' has the potential to alter patterns of

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student nurses' clinical training"				were undertaken with 59 unregistered healthcare workers across four hospitals in Northern Ireland. Transcriptions were analysed using a content analysis approach; all data were collected in 2010. Low risk		their involvement did not reflect their levels of expertise as evidenced by certified training. Their participation was justified based on mentor unavailability, their closeness to the student and the patient. While some did raise concerns, they recommended that these workers be formally involved in nurse education.	work and affect current educational approaches impacting on the acquisition of clinical skills. Further research is recommended in this domain. Limitations: None identified
Hewko et al. 2015 Invisible no more: a scoping review of the health care aide workforce literature	82 studies met inclusion criteria	To evaluate the HCA workforce literature	Inclusion criteria: 1. HCA or equivalent role 2. Peer-reviewed journals 3. Abstracts in English 4. 1995 or later	Scoping review Low risk of bias	Level 4.a	Average HCA is female, 36-45 years old, up to high school education HCA role is varied and unclear High HCA turnovers at both facility and profession level	Governments and healthcare organisations are limited in their ability to deploy viable, effective HCA workforce plans Undervaluation of HCAs negatively

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						Unregulated HCAs are at higher risk of injury than RNs and LPNs	impacts other staff, clients and the institutions they work for Future workforce and research calls for a national HCA registry or directory
Kaasalainen et al., 2014 Ontario, Canada Building capacity in palliative care for personal support	PSWs (n=11)	To evaluate hospice visits as a learning strategy to increase the capacity of PSWs in palliative care	PSWs from four Ontario LTC home sent to local hospices PSWs shadowed staff for two days	Qualitative descriptive design PSWs completed questionnaire after shadowing staff Thematic analysis	Level 4.d	PSWs were exposed to tailored resident-focused care and how the PSW role is well integrated in the community hospice team, free from hierarchical relationships PSWs viewed this strategy of shadowing as beneficial to meeting their learning needs and building capacity	PSWs should be valued more within interdisciplinary teams
Kessler et al. 2010 United Kingdom The Nature and Consequences of	Senior staff, nurses, HCAs	To explore the role and consequences of HCAs for the assumptions of public policy goals	Nine Trusts (South, Midland, West) Medical and general surgical divisions	Mixed methods 1. Interview, 2. Interviews, observations, focus groups, action research, 3. Surveys	Level 4.b	Typically, HCAs tend to deliver more direct care compared to nurses and complete routine tasks	Utilise HCAs' distinct backgrounds/experiences which are more rooted in local communities compared to nurses

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Support Workers in a Hospital Setting							Find a balance maintaining HCAs enthusiasm for further education by reducing barriers and shaping expectations
Knopp-Sihota et al. 2015 Western Canada Factors associated with rushed and missed resident care in western Canadian nursing homes: a cross-sectional survey of health care aides	HCAs (n=583) in Canadian nursing homes (30 urban, six rural)	To examine the nature of missed care by HCAs and the factors associated with it	Elderly care	Cross sectional survey design Low risk of bias	Level 4.b	HCAs reported being rushed (86%) and having lack of time (75%) as the main reason for missed care The most frequently missed tasks include talking to residents (52%) and assisting mobility (51%)	Organisational contexts are important quality of care indicators Self-reported data on missed care introduces potential biases
Lee et al. 2015 Victoria, Australia Evaluation of a support worker role, within a nurse	CCAs (community care assistants; n=7), nurses (n=27) and consumers (n=28)	To evaluate whether the new WISE Medicines Care model increased the number of medicines	Large non-profit community nursing service Two metropolitan sites in Victoria, Australia	Before-after mixed methods Focus groups and interviews	Level 4.d	Medicine support visits by CCAs increased (from 0.25% to 3.3%) Nurses reported a high level of confidence and trust in CCAs and enabled them to	Barriers included limited number of CCAs within the organization to delegate these tasks to

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		support home visits carried out by CCAs, explore CCAs', nurses' and consumers' experiences with the CCAs' expanded role, and pinpoint the facilitators and barriers to delegating these tasks				focus on more complex cases	Enablers included training and support and existing positive workplace relationships
Lin (2014) US Revisiting the relationship between nurse staffing and quality of care in nursing homes: an instrumental variables approach	Nursing homes in 8 states in the US	To examine the relationship between nurse staffing and quality of care in nursing homes	Used minimum staffing requirement legislation over 200-2001 to examine changes in quality of care in nursing homes	Observational study from 2000-2001 Low risk of bias	Level 3.e	There was no significant association between nurse aide staffing and quality of care in the nursing home sector in the US	RN staffing has a significant impact on quality of care

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Lindquist et al. 2012 United States Hiring and screening practices of agencies supplying paid caregivers to older adults	Home care agencies (n=180)	To evaluate the screening process used when hiring caregivers and how caregiver competency is assessed prior to assigning older adult care	Older adult care in Illinois, California, Arizona, Florida, and Wisconsin	Cross sectional cohort of agencies One-to-one phone interviews	Level 4.b	Caregivers were commonly recruited via the internet (39.2%) and word-of-mouth (27.8%) Candidates often required previous "life experience" (68.8%) Screening included criminal background vetting (55.8%) and drug testing (31.8%) Competencies were assessed by self-report (58.5%), testing (35.2%), and client feedback (35.2%)	Hiring processes may not be robust enough to accurately reassure older adult client regarding caregiver's background and skill set
Moran et al. 2010 United Kingdom Defining and identifying common elements of and contextual influences on the roles of support workers in health and social care: a	134 papers included	To assess the main contribution of support workers within different contexts of health and social care		Thematic review of literature	Level 4.a	Four categories of activities identified included direct care, indirect care, administration and facilitation Four core attributes of support worker identified included being a helper/enabler, a companion, a facilitator and a monitor	Contextual factors tend to most influence the specific technical aspects of the role

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thematic analysis of the literature							
Sarre et al. 2018 United Kingdom, England The challenges of training, support and assessment of healthcare support-workers: A qualitative study of experiences in three English acute hospitals	HCAs (n=30), staff managing or working alongside them (n=24), and HCA training leads (n=4)	To examine HCAs access to training, support and assessment; perceived gaps in training; and barriers and facilitators to deployment of relevant policies in acute care	Three acute NHS hospitals in England Working with older patients	Qualitative design One-to-one semi-structured interviews Thematic analysis	Level 4.d	Supervision varied between ward and was dependent on availability of staff Induction training was valued, but not seen as able to fully prepare HCAs for the wards	Gaps identified in training included caring for patients with cognitive impairment, management of emotions (patients, families and themselves), and having tough conversations Training, support and assessment could be improved by introducing policy that promotes and protects HCA training, formalizing on-ward support, and training/IT support on a drop-in basis
Seblega et al. 2010 United States	Nursing staff (RNs, LPNs, NAs)	To investigate the changing nurse staff and skill-mix		Descriptive research design	Level 4.d	LPN and NA hours have increased and skill mix generally fell	Data was gathered for a single day and used to represent entire year

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Changes in nursing home staffing levels, 1997 to 2007	US nursing homes	in US nursing homes from 1997-2007		Data from Online Survey Certification and Reporting System database Low risk of bias			Data was self-reported
Sengupta et al. (2010) U.S. A National Overview of the Training Received by Certified Nursing Assistants Working in U.S. Nursing Homes	Certified Nursing Assistants in US Nursing Homes	To provide an overview of the training and continuing education received by CNAs; to report CNAs' assessments of the adequacy of their training; to identify perceived training needs from the perspective of CNAs.	Data from the 2004 National Nursing Assistant Survey (NNAS)	Cross-sectional quantitative study Low risk of bias	Level 4.b	CNAs are required by Federal Government to have 75 hours of training with at least 16 hours of practical training in order to be certified in the US. CNAs are required to complete at least 12 hours of continuing education annually which includes: care of a person with dementia; communication skills; working with supervisors CNAs feel more satisfied in their job due to: feeling prepared in their initial training; the quality of training; the relevance of	To meet the demand of the ageing population it is recommended to increase the current 75 hours of training stipulated in regulations

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						continuing education to their work	
Sloane et al. 2010 United States Immigrant status and intention to leave of nursing assistants in US nursing homes	NAs (n=2,881)	To explore the features and perceptions of immigrants working as NAs in US nursing homes and to determine whether turnover is connected to immigrant status	NAs in US nursing homes	Analysed data from 2004 National Nursing Assistant Survey Low risk of bias	Level 4.d	Immigrant workers reported feeling less respected by residents and families, but not by supervisors Immigrants working as NAs were more likely to report an intention to leave the job within the first year Intentions to leave were independently associated with demographic factors, length of time on the job, and noncitizen status	Focusing on unique factors associated with immigrant workers, such as the need to improve communication and garner respect in work, can assist policy-makers and organisations in more successfully attracting, training, and supporting these minority NAs
Spilsbury et al. 2011 The relationship between nurse staffing and quality of care in nursing homes: A systematic review	Nursing staff in care homes 50 papers using cross-sectional and cohort designs	To review the evidence-base for the relationship between skill-mix and quality of care and provide recommendations for future research	International nursing facilities (94% in US)	Systematic review Low risk of bias	Level 4.a	Produced inconsistent findings in relation to impact of skill-mix on patient outcomes	Future research should consider other factors such as turnover, agency use and training/experience

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Spilsbury et al. 2013 United Kingdom, England Support matters: a mixed methods scoping study on the use of assistant staff in the delivery of community nursing services in England	Senior managers at three stages (n=76, 37, 30, respectively)	To examine the role, contribution and impact of community nursing assistants in service delivery and delivery of care	Community nursing provider organisations	Mixed methods Scoping study using telephone interviews and administrative records Low risk of bias	Level 4.d	Nursing assistants promote flexibility in nursing workforce The undefined role of community nursing assistants creates inconsistency in the deployment and development of these roles	Develop national guidelines on the utilization of community nursing assistant and provide standardized training for this role Study was conducted during implementation of NHS Transforming Community Services Programme
Stearns and D'Arcy 2008 United States Staying the Course: Facility and Profession Retention Among Nursing Assistants in Nursing Homes	NAs (n=2,328) in nursing homes	To assess the extent to which high turnover and low retention among NAs are associated with NAs' intent to leave a particular job versus the NA profession.		Cross-sectional study Used data from 2004 National Nursing Assistant Survey Low risk of bias	Level 4.b	Facility retention (i.e. retention of NA within the facility) was dependent on supervisor qualities, training/safety, and benefits NA profession retention (i.e. NAs' intention to continue working as a NA) was found dependent on income and education	Facilities should target facility characteristics to improve NA retention Broader enhancements of NA careers may also be necessary

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Suter et al. 2014 Alberta, Canada Workforce utilization in three continuing care facilities	Healthcare staff (incl. regulated LPNs and unregulated HCAs), service users and their families	To examine the impact of effective workforce utilization in service delivery	Three continuing care facilities; one supportive living facility and two long-term care facilities	Case study design Interviews, group discussions and observations Ecological framework Moderate risk of bias	Level 4.d	Issues with skill-mix, responsibilities and role clarity were identified which negatively impact staff and residents HCAs and LPNs are often used as 'casual staff' covering staff shortages and sick leave/vacation. Inconsistency negatively impact staff/patient experiences Variability identified between HCA roles	Use socio-ecological framework to target barriers at various levels of the healthcare system. Staff in supportive living facility changed over course of study
Twigg et al. 2016 Western Australia The impact of adding assistants in nursing to acute care hospital ward nurse staffing on adverse patient	Acute hospital patients who spent time on a medical, surgical or rehabilitation ward Pre-test n=125,762 Pot-test n=130,540	To evaluate the impact of adding NAs to acute care hospitals on patient outcomes	Eleven acute care metropolitan hospitals, Medical, surgical, rehabilitation wards	Pre-test post-test Logistic regression modelling Used administrative health data Low risk of conflict	Level 2.d	In wards with NAs, increases in three adverse outcomes were observed; failure to rescue, urinary tract infection, falls with injury There was a decrease in mortality on these wards also On non-NA wards, an increase in falls with injury was observed and a decrease in pneumonia was also observed	NAs should be introduced into wards under protocol which clearly defines their role, scope of practice and relationship to RNs, all while monitoring patient care

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outcomes: An analysis of administrative health data							
UNISON (2016) UK Care on the Cheap: A UNISON survey of clinical support workers.	Healthcare support workers in various health care settings (n=2300)	To determine the role and responsibilities of the HCSWs	Primary care to emergency care, and community care to hospitals	Cross-sectional qualitative survey Low risk of bias	Level 3	Role are not defined and HCSWs do not feel competent to perform duties asked of them HCSWs do not feel they have support to progress past their current role and feel undervalued Large proportions of HCSWs struggle following sector pay restrictions HCSWs feel they should be regulated	Defined scope and practice of roles Standardised education, training and competency Review of pay bands More support for mobility to RN or other healthcare role
Vail et al., 2011 West Midlands, United Kingdom Healthcare assistants in general practice: a qualitative study of their experiences	HCAs (n=14) working in general practice	Explore HCAs' experience within general practice	General practice in two Primary Care Trusts	Qualitative study Semi-structures interviews Framework analysis approach Low risk of bias	Level 4.d	HCAs are overall satisfied with their work HCAs are most dissatisfied with their status, pay and career progression opportunities	To support HCA retention, GPs should provide protected time and resources for mentorship Small sample size and short (20 min) interviews

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Waldie et al. (2010) UK Healthcare assistant role development: a literature review.	HCAs in various healthcare settings	To examine the role of the healthcare assistant	Define the key topics concerning healthcare assistant development	Review Low risk of bias	Level 3.b	The HCA role can be effectively developed to meet the changing needs of the patient with consideration of specific HCA roles in practice to ensure competence alongside the limitations and professional integrity	Appropriate training programmes such as National Vocational Qualifications can allow for the HCA role to be developed Further benefits may include enhancing formalised training and recruitment
Wiener et al. (2009) United States “Why Do They Stay? Job Tenure Among Certified Nursing Assistants In Nursing Homes”	Certified Nursing Assistants working in nursing homes.	“This study identifies factors related to job tenure among certified nursing assistants (CNAs) working in nursing homes.”	United State Nursing homes Cross-sectional review.	The study uses 2004 data from the National Nursing Home Survey, the National Nursing Assistant Survey, and the Area Resource File. OLS regression analyses were conducted with length of job tenure as	4.b	Among policy-relevant domains, extrinsic rewards had the largest number of significant variables (four). Only one training and one organizational culture variable significantly affected CNA job tenure. Significant variables in domains not readily influenced by policy (e.g., personal characteristics and characteristics of the facility and surrounding market area) were often significant in both regressions.	This study underscores the importance of the basic economics of job choice by low-income workers. Wages, fringe benefits, job security, and alternative choices of employment are important determinants of job tenure that should be addressed, in addition to training

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				the dependent variable. Tenure of CNAs was hypothesized to be motivated by the extrinsic rewards of their job; initial training and mentoring; reasons for being a CNA; organizational culture; and personal, facility, and market characteristic. Low risk			and organizational culture. No limitations identified