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A scoping review of the literature
prepared for the Home &
Community Health Association

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By Dianne E. Roy and Roslyne C. McKechnie



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NON-REGULATED HOME SUPPORT WORKER ROLE IN MEDICATION SUPPORT AND ADMINISTRATION: A scoping review of the literature prepared for the Home & Community Health Association

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ABSTRACT

The aim of this literature review is to identify and critique literature relating to current policy, guidelines and practice of non-regulated caregivers in relation to medication while they are working with clients in their own homes. The scope of this review comprises medication administration and medication support, which includes medication prompting and assisting the client to take their medication. Out of scope in this review is medication management.

The review draws on relevant Aotearoa New Zealand statutes, standards and practice guidelines related to medication support and administration, District Health Board (DHB) policies, and education and training recommended and/or available to Home Support Workers (HSWs). Relevant published research and international guidelines are also included.

The findings of the literature review are presented under five key themes:

1. Regulatory control over medicines, medication administration and the practice of HSWs in the home environment
2. Current sector guidelines, policies and standards informing the practice of HSWs
3. Education and training in medication support and medication administration for HSWs
4. Elements of the home environment that pose specific issues (and also positives) in relation to medication support and medication administration for clients and HSWs
5. Initiatives to improve medication support and medication administration

DEFINITIONS

For the purposes of this review the following definitions apply:

Guideline: Recommendations based on consensus agreement, expert opinion or experience. Some forms of evidence may also be included. The guideline provides the recommended approach but not the practical 'how to' details specified in the protocol or pathway (Ministry of Health, 2013, p. 20).

Home Support Worker: A person employed within the community context "who undertakes a component of direct care and is not regulated in law by a regulated authority" (Nursing Council of New Zealand, 2012, p. 14). Other titles used in New Zealand include health-care assistants, kaiāwhina

and care workers. For the purposes of this literature review, and to maintain consistency with the term used by the Home & Community Health Association, the term Home Support Workers (HSWs) will be used.

Medication support: Reminding clients to take prescribed medicines, assisting them in opening packages, but the clients themselves are responsible for taking their own medicines (Ministry of Health, 2011b).

Medication administration: The giving/administration of prescribed medicines, and may include opening the medication container, removing the prescribed dosage and giving the medication as per instructions.

Medication management: Includes the safe prescribing, dispensing, storage, disposal and reconciliation of medicines.

Policy: A plan or course of action adopted by a person, group or government or the set of principles on which they are based, intended to influence and determine decisions and actions.

Prescribed medication: “[M]edication that is prescribed by registered health professionals in accordance with the requirements of the Medicines Act 1981 and Medicines Regulations 1984” (New Zealand Qualifications Authority, 2015b, p. 1).

Procedure: Written instructions on the approved and recommended steps for a particular act or sequence of acts. They may be referred to as guidelines and/or work instructions (Ministry of Health, 2013, p. 22).

Standard: A level of quality of excellence that is accepted as the norm or by which actual attainments are judged (Encarta Dictionary, 2009).

BACKGROUND

The Home & Community Health Association (HCHA) represents providers of home-care services for people in their own homes. Medication support and administration in the home by HSWs is an area of concern for the HCHA. There are guidelines available for institutional settings such as residential aged-care facilities (Ministry of Health, 2011b), supported living in group homes and private and public hospitals (Ministry of Health, 2013; New Zealand Nurses Organisation, 2012), however, these guidelines are almost silent on medication support and administration in the home environment. There are currently no specific New Zealand guidelines for medication support and administration by HSWs providing in-home care.

Home and community support includes a range of services available for people who need assistance to live at home. Services include personal care, household management, nursing treatment, and complex care for people with serious needs (Home & Community Health Association, n.d., para. 1). Services are provided to people who may be convalescing at home after surgery or medical treatment, those living with long-term conditions and/or disabilities, and older people who want to “remain in the home of their choice for as long as possible” (Home & Community Health Association, 2014a, p. 1). HCHA providers aim to deliver client-centred, co-ordinated plans of care that meet clients’ needs and enable clients and their families to have more choice and control over services they receive (Home & Community Health Association, 2014a).

In order to participate fully in decision making about their healthcare, people need access to a coordinated, responsive health and disability support programme that includes a highly skilled workforce and ensures access to appropriate health services in the community (Ministry of Health, 2001; 2002). Progress in achieving this has been slow, and while District Health Boards (DHBs) and other stakeholder groups have been enthusiastic and supportive, implementation of aligned home-based services has been minimal (Controller and Auditor General, 2011).

The provision of quality home-based support services is essential to the successful implementation of current health policy. Providing assistance in the home may include the need for medication support and administration. Within this context, it is often HSWs who provide medication support and/or administer medications.

SEARCH STRATEGY AND PROCEDURES

1. Search question

What are the current policies, guidelines and practices of non-regulated caregivers in relation to medication support and administration to clients in their own homes?

2. Data sources

Policies, standards and guidelines: The Sector Advisory Group for this project (convened by HCHA) provided 22 documents, including links to web sites, from a range of New Zealand and international sources. These were reviewed for relevancy and 20 were included in this review (see Table 1). These include: guidelines x 6, policies x 5, standards x 3, reports x 2, research reports x 2, education and training

course descriptor x 1, and briefing document x 1.

In addition, two web searches were undertaken. The first was to search for New Zealand District Health Boards publications with regards to medication administration in home-care services. Two publically available documents were identified and included in the review. Access to other DHB publications was restricted to DHB staff. The second web search was to identify any other New Zealand and international policies, guidelines or standards. New Zealand government statutes and sector standards were also included. The web searches resulted in an additional 21 items. These related to: statutes x 5, education and training x 4, guidelines x 3, government strategies x 3, standards x 2, policy x 2, code of conduct x 1, and audit x 1 (see Table 2).

Online databases: The health-related EBSCO databases, including CINAHL (Cumulative Index to Nursing and Allied Health Literature) and MEDLINE were used. Search terms included *health care assistants, non-regulated care givers, medication, medication administration and medication support*. Date parameters included the ten-year period from 2006-2016. Other parameters used were 'peer reviewed journals', 'English language', and 'full-text'. The title and abstract of articles were used to determine inclusion in this review.

The initial search recovered 116 articles. Abstracts were read and those not relevant to this review were discarded (n=92). The remaining 24 articles were included in this review. These were read in-depth and from the reference lists of these articles a further four articles were identified; 28 articles in total (see Table 3). These included: research articles x 16, scholarly opinion articles x 3, practice briefs x 2, literature reviews x 2, information items x 2, audit report x 1, report x 1 and thesis x 1.

3. Review methods

All articles, policy and guideline documents, and position statements were read in-depth to ascertain relevance to understanding practice-related issues for non-regulated caregivers in relation to medication support and administration to clients in their own homes. Appraisal of the research articles was guided by the three-step approach outlined in the Critical Appraisal Skills Programme (CASP): Is the study valid? What are the results? Are the results useful? (Critical Appraisal Skills Programme, 2013). A similar appraisal approach was applied to the other documents: What is the source and is it reliable? What does it say about medication support and/or medication administration? Is this useful?

FINDINGS

There is a dearth of literature focused specifically on medication support and administration by HSWs providing home-based services. Much of the literature identified, including policies, practice guidelines and research, related to medication administration by healthcare assistants in the hospital or residential care context under registered nurse (RN) supervision. We included these in the review and have drawn on relevant aspects that help elucidate practice-related issues for non-regulated caregivers in relation to medication support and administration to clients in their own homes.

Five broad themes were identified from the 69 documents included in this literature review (see Tables 1-3). The findings are presented under these themes:

1. Regulatory control over medicines, medication administration and the practice of HSWs in the home environment
2. Current sector guidelines, policies and standards informing the practice of HSWs
3. Education and training in medication support and medication administration for HSWs
4. Elements of the home environment that pose specific issues (and also positives) in relation to medication support and medication administration for clients and HSWs
5. Initiatives to improve medication support and medication administration
6. Regulatory control over medicines, medication administration and the practice of HSWs in the home environment

Five items of New Zealand legislation are particularly relevant to this review: the Medicines Act 1981, the Medicines Amendment Act 2013, the Misuse of Drugs Act 1975, the Health Practitioners Competence Assurance Act 2003, and the Health and Disability Commissioner Act 1994.

The Medicines Act, Medicines Amendment Act, and Misuse of Drugs Act

In New Zealand, the Medicines Act (Medicines Act, 1981), the Medicines Amendment Act (Medicines Amendment Act, 2013) and the Misuse of Drugs Act (Misuse of Drugs Act, 1975) provide the overarching legislation with regard to medicines management and administration. According to the Medicines Act:

- “A prescription medicine (including controlled drugs) may be administered to any person only in accordance with, (a) the directions of the authorised prescriber or delegated prescriber who prescribed the medicine; or (b) a standing order” (s19.1)
- An authorised prescriber is a nurse practitioner; or an optometrist; or a practitioner; or a registered midwife; or a designated prescriber (s2.1)
- A delegated prescriber is a health practitioner to whom a delegated prescribing order has been issued (s2.1)
- [A] standing order means:
 - a written instruction issued by a practitioner, registered midwife, nurse practitioner, or optometrist, in accordance with any applicable regulations, authorising any specified class of persons engaged in the delivery of health services to supply and administer any specified class or description of prescription medicines or controlled drugs to any specified class of persons, in circumstances specified in the instruction, without a prescription (s2.1(a), emphasis added)
 - a written instruction issued by a practitioner, registered midwife, nurse practitioner, or optometrist, in accordance with any applicable regulations, authorising any specified class of persons engaged in the delivery of health services to supply and administer any specified class or description of *pharmacy-only medicines* or *restricted medicines* to any specified class of persons, in circumstances specified in the instruction (s2.1(c), emphasis added).

This means that HSWs working in the community can legally administer prescribed medicines (including controlled drugs) provided this is done in accordance with the directions of the prescriber or in accordance with a standing order. Additionally, as employees, HSWs “who administer medicines must be familiar with their employer’s policies and guidelines regarding medicine administration” (New Zealand Nurses Organisation, 2012, p.18). They also need to understand their responsibilities and accountabilities.

The Misuse of Drugs Act has less direct impact on the practice of HSWs, however, they may be confronted by such issues as the misuse of a client’s drugs by other family members.

The Health Practitioners Competence Assurance Act

The principal purpose of the Health Practitioners Competence Assurance Act (Health Practitioners Competence Assurance Act, 2003) is to protect the health and safety of members of the public by providing mechanisms to ensure that health practitioners are competent and fit to practise their professions (Health Practitioners Competence Assurance Act, 2003, s3.1).

HSWs are not regulated under the Health Practitioners Competence Assurance Act (Health Practitioners Competence Assurance Act, 2003) and cannot be investigated by any of the associated professional councils (e.g. Nursing Council of New Zealand or Midwifery Council of New Zealand). In many instances, however, HSWs will be working with and under the direction and delegation of health professionals (particularly nurses) who are regulated under the Act.

The Health and Disability Commissioner Act

Although HSWs are not regulated under the Health Practitioners Competence Assurance Act, they are expected to work under the Health and Disability Commissioner Act (Health and Disability Commissioner Act, 1994) and its associated Code of Health and Disability Services Consumers’ Rights (Health & Disability Commissioner, 2014), and the Health and Disability Services Standards (Ministry of Health & Standards New Zealand, 2008). If in breach of the Code or Standards, HSWs can be investigated by the Health and Disability Commissioner or the Human Rights Review Tribunal (New Zealand Nurses Organisation, 2012).

Although all ten ‘rights’ of the Code of Health and Disability Services Consumers’ Rights (Health & Disability Commissioner, 2014) apply to the practice of HSWs, two are particularly relevant in relation to medication support and administration: the right to be fully informed (#6), and the right to make an informed choice and give informed consent (#7). HSWs need to be familiar with these rights and follow employers’ guidelines in enacting them. For example, a client or their guardian may refuse consent for medication administration. The reason for this refusal should be reported to the prescriber or appropriate senior health professional and an accurate documented record made (New Zealand Nurses Organisation, 2012).

Current sector guidelines, policies and standards informing the practice of HSWs

The literature review identified only one New Zealand

guideline that focused specifically on medication support and administration by HSWs in a care recipient's own home (Waikato District Health Board, 2010). We did, however, find a number of other guidelines and policies that, while silent on in-home services, do offer some direction, and have been included. Guidelines and policies related specifically to the education and training of HSWs are discussed under theme three.

Four documents were identified by the sector advisory group for this project as being key to informing current practices of many organisations that employ HSWs who provide medication support and administration: the *Home-based Medication Oversight Services for Older People* (Waikato District Health Board, 2010), the *Guidelines for Nurses on the Administration of Medicine* (New Zealand Nurses Organisation, 2012), the *Home and Community Support Sector Standard NZS 8158:2012* (Standards New Zealand, 2012) and the *Medicines Management Guide for Community Residential and Facility-based Respite Services: Disability, Mental Health and Addiction* (Ministry of Health, 2013). All are underpinned by the statutes outlined in the previous section and have been developed collaboratively, with robust consultation and peer review. With the exception of the Waikato DHB document, all provide nationally-agreed guidelines. The documents are presented chronologically.

Home-based Medication Oversight Services for Older People

The Waikato District Health Board (2010) has developed a home-based medication oversight service for older people, the purpose of which is “to ensure that the older person is safe and compliant with taking prescribed medications, minimising the risk of entry to long-term residential care because of difficulties complying with a prescribed medication regime” (p. 3). The home-based medication oversight service may be a standalone provision, or an additional component of a service provided by a home-based support organisation (p. 7).

Within these guidelines a medication oversight service provides “monitoring, and/or assistance to an older person whereby staff/support workers directly observe, or prompt, the taking of medications. Where required the staff member will assist the client to access the medication e.g. open the blister packaging or bottle” (p. 3). The guidelines clearly define what medication falls within scope (regular/long-term prescribed oral and topical pharmaceuticals) and outside of scope (devices or garments to be applied such as TED

stockings, and oxygen).

Access to the Medications Oversight Service is via a NASC (Needs Assessment and Service Co-ordination) assessment and referral. Service providers are required to develop a care-plan within 72 hours of a client's admission to the service. Care-planning is in conjunction with the client and/or their representative and is based on need, received referral, and assessment information provided by NASC. Medication oversight is provided in a manner that promotes continuity of service, is consistent with the care-plan, and regularly reviewed.

The service specifications stipulate that Medication Oversight requires care planning, and direction and delegation by registered nurse or registered pharmacist (holding a current Annual Practising Certificate). Enrolled nurses and nurse assistants cannot direct and delegate medication oversight activities. HSWs “with demonstrated competency and compliance with NZQA [New Zealand Qualifications Authority] Unit Standard 23685 (Version 1) or equivalent” (Waikato District Health Board, 2010, p. 7) can provide medication support. (NZQA Unit Standard 23685 is outlined below in Theme 3.) This includes assistance (e.g. removing a bottle cap), prompting (reminder to take medication), and monitoring (checking up on or observing) the client taking medication, but excludes medication administration. It is the responsibility of the service provider to “ensure that staff competency in delivering medication oversight services is regularly monitored and reviewed” and that “staff employed to provide Medication Oversight are orientated to and are familiar with the goals of this specification and quality standards” (p. 7).

Although the Waikato DHB service is designed to support older people, the guidelines provided in this document have the potential to be applied to other client groups receiving home-based medication oversight and across other DHBs. Anecdotal evidence suggests other DHBs, including the Waitemata DHB, are working with contracted providers to develop similar medication oversight services and associated administration guidelines.

Guidelines for Nurses on the Administration of Medicine

The NZNO Guidelines for Nurses on the Administration of Medicines is viewed by the sector advisory team for this project as a key document. These guidelines were developed following “numerous inquiries from nurses/midwives, other health professionals, managers and employers seeking clarity and definition of parameters surrounding the administration

of medicines” (New Zealand Nurses Organisation, 2012, p. 5).

The NZNO guidelines pertain specifically to medicine administration which is defined as “to administer to a human being, either orally; or by injection, or by introduction into the body in any other way; or by external application, whether by direct contact with the body or not” (p. 7). The guidelines cover a wide range of care contexts in which unregulated healthcare workers provide care, including a client’s own home. Underpinning these guidelines is the assumption that medication administration by an unregulated healthcare worker is under the direction and delegation of a registered nurse/midwife; which may not be the case for many HSWs. Nonetheless the document provides useful guidelines that are consistent with New Zealand legislation and the regulatory environment, and could be contextualised for the home-care environment where HSWs may not be supervised by regulated health professionals.

The guidelines outline the following responsibilities for HSWs administering medicines:

- Understands their role and responsibilities as per their job description
- Understands that the regulated nurse/midwife has responsibilities and accountabilities under their scope of practice to the relevant regulatory authority
- Is familiar with their employer’s policies and guidelines related to medicine administration, including their individual responsibilities related to achieving the standards
- When accepting delegated activities, the HSW understands that he/she retains responsibility for their actions and remains accountable to the RN/Midwife
- Understands that the enrolled nurse (EN) may co-ordinate and prioritise the workload for a team of HSWs and act as a resource for them
- Has a responsibility to inform the RN/Midwife/EN if they do not believe they have the necessary skills and knowledge to carry out the delegated task
- Reports concerns to the RN/Management Team regarding risks in the medication process
- Understands that they must undergo and pass competency training prior to administering medicines (New Zealand Nurses Organisation, 2012, p. 48)

The guidelines provide specific standards for administration of medicines prior to, during, and after administration. They are based on client safety, consent, and documentation as

priorities. The guidelines also address the use of monitored dosage systems, crushing or disguising medicines, reporting adverse event/errors, controlled drugs, over-the-counter medicines, injectable medicines, complementary medicines, and the use of traditional Māori medicine (rongoā Māori), although these are primarily considered in relation to RN/Midwife practice, not the role of HSWs.

In summary, the NZNO guidelines suggest that HSWs who administer medicines need to understand their responsibilities and accountabilities. It is the responsibility of the employer to ensure that appropriate orientation and education has taken place. This includes competence assessment for all those involved in the administration of medicines, and the provision of job descriptions, policies and guidelines that outline the responsibilities of all staff (including HSWs) in all steps of the medication process. Any regulated staff must understand the legislative and professional issues, delegate the administration of medicines appropriately, and continue to be accountable for client safety.

The Home and Community Support Sector Standard NZS 8158:2012

The Home and Community Support Sector Standard NZS 8158:2012 (Standards New Zealand, 2012) sets the regulatory requirements for the employers of HSWs. The standard outlines what people receiving support at home can expect and sets minimum requirements for service provider organisations. While this standard uses the term medicine management, which is outside the scope of this literature review, it has been included because it incorporates medication support and administration as part of the standard. Of particular relevance to this review is Standard 4.6 which states:

4.6 Medicine Management

Consumers receive medicines in a safe and timely manner that complies with current legislative requirements and safe practice guidelines

The criteria required to achieve this outcome shall include ensuring:

4.6.1 – *A medicines management system is implemented that complies with legislation, protocols, and safe practice guidelines. The system shall include the detection and management of all medication errors*

4.6.2 – *Policies and procedures clearly document the service provider’s responsibilities at each stage of medication management (the service provider in*

this context is the person providing support, not the organisation)

4.6.3 – *Service providers responsible for medicine management are competent to perform the function for each stage they manage*

4.6.4 – *The facilitation of safe self-administration of medicines by consumers where appropriate (...)*

G.4.6.1 – *The medicine management system should be relevant to the consumer groups receiving service. This may include, but is not limited to, appropriate administration, review, storage and disposal*

G.4.6.2 – *This may include, but is not limited to:*

(a) Service providers operating only within their scope of practice and competency

(b) Informed consent for the administration of medicines

(c) Documentation of all current medicines prescribed, taken, refused, disposed of, and medication errors

(d) Processes for managing and reporting adverse events

G.4.6.4 – *This may include, but is not limited to:*

(a) Adequate information in a form that meets the needs of the consumer:

(b) Education on the purpose, actions, possible side effects, and consequences of refusal/misuse;

(c) Adequate and appropriate supervision is provided

(d) Safe/appropriate storage is available.

It is important to note that this standard uses the term ‘service provider’ and notes “the service provider in this context is the person providing support, not the organisation” (see 4.6.2), in other words the HSW. This means that to meet this standard, HSWs need to be provided with clear documentation of their responsibilities in regard to medication support and administration. They must also be able to demonstrate competency to perform the aspects of medication support and administration required of them within their scope of practice.

Medicines Management Guide for Community Residential and Facility-based Respite Services: Disability, Mental Health and Addiction

This Medicines Management Guide was developed as a collaborative initiative involving networks of people with disabilities; disability and mental health and addiction services that provide community residential and facility-based respite; the Pharmacy Guild; and the Ministry of Health (Ministry of Health, 2013, p. 1). It is intended as a reference tool for managers of community residential and facility-based respite services in the disability, mental

health and addiction sectors. These organisations rely on a mostly non-regulated workforce to support people living in the community in ‘home-like’ residential services. In all instances, services need to work in partnership with the registered health professionals who prescribe and dispense/supply medication, and have robust organisational policies and procedures in regard to medication management and administration.

Self-management of medications by clients is a fundamental tenet of these guidelines. Provider organisations have a duty of care to support people to self-manage the taking of their medication. Clients should be considered competent to self-manage their medication unless a clinical opinion states otherwise. To determine how much support is required/offered, organisations need to work in partnership with the client and the prescriber. Consideration should be given to:

- What the person knows about their medication and conditions
- Which medication is being taken
- How the medication is taken
- The extent to which the person finds the medication to be beneficial
- Any unwanted effects the person is experiencing

The guidelines acknowledge that people differ in the level of support they may need or want, which may range from having no active support, to being prompted or assisted to take the medicine themselves (Ministry of Health, 2013, p. 15).

Guidelines are provided for the administration of a wide range of medicines, including PRN (pro re nata), over-the-counter, complementary and alternative medicine (CAM), and controlled drugs. Administration of topical and enteral medicines is addressed in the guidelines, which may be subject to special instructions and demonstration of additional competencies. Although in-home support is not a focus of these guidelines, there are elements that can inform the development of guidelines for medication support and administration by HSWs in home care.

The guidelines indicate that medication support and administration are within the scope of suitably trained staff who are able to demonstrate competency. Before providing medication support or administering medicines, staff need to demonstrate that they have the knowledge, understanding and practical abilities to do so safely. According to this guide, safe practice includes:

- Following organisational policy

- Accurate documentation
- Correct checking procedures
- Accurate measurement if required
- Cultural respect
- Working within roles and responsibilities and relevant legislation (Ministry of Health, 2013, p. 4)

While these guidelines are specific to community residential and facility-based respite services, standards are provided for the safe administration of medicines, which is seen as a responsibility of a service organisation and its employees, whether regulated or non-regulated. Interestingly, specific education or training standards are not addressed. The guidelines are consistent with the Home and Community Support Sector Standard NZS 8158:2012.

Other sector guidelines and policies

In addition to the four key documents identified by HCHA, ten other guidelines and policies were found to be relevant to medication support and administration by HSWs in the home and included in this review theme; two New Zealand and eight international. The international guidelines have been included where they add depth and/or breadth to the available New Zealand guidelines and policies.

Medicines Care Guides for Residential Aged Care

The Medicines Care Guides for Residential Aged Care (Ministry of Health, 2011b) provide guidelines for medication support and administration in aged residential care, but not in-home care. The guidelines aim to provide a quick medicine management reference tool for all care staff working in residential aged care in New Zealand: rest homes, dementia units, private hospitals and psychogeriatric hospitals. Although similar to the Medicines Management Guide for Community Residential and Facility-based Respite Services: Disability, Mental Health and Addiction (Ministry of Health, 2013), these guidelines are more comprehensive and include a number of excellent flow-charts. The guidelines outline responsibilities and roles for members of the multidisciplinary team, including the client/resident, prescribers, managers, registered and enrolled nurses, and healthcare assistants.

While this document relates specifically to residential aged-care facilities and covers scopes of practice of a wide range of health professionals, there are key elements that are applicable to medication support and administration by HSWs in a person's own home. These include the need to demonstrate competence in medicines administration to

ensure safe practice. Similar to the Medicines Management Guide for Community Residential and Facility-based Respite Services: Disability, Mental Health and Addiction, safe practice includes:

- Following organisation policy
- Accurate documentation
- Correct checking procedures
- Accurate calculation if required
- Resident education and consent
- Cultural competency
- Working within defined scopes of practice and relevant legislation (Ministry of Health, 2011b, p. 4)

These guidelines clearly indicate that skill and knowledge (competency) must be assessed by a registered nurse and reviewed annually. Once competent, healthcare assistants can check and administer oral, topical and rectal medicines under the direction and delegation of a registered nurse, e.g. oral from a unit dose pack (blister pack), topical medicines and suppositories. Insulin-administration-specific competence is required for administering subcutaneous insulin (p. 4). The requirements for RN assessment of competency and direction and delegation of medicine administration may be difficult for some providers of in-home services to meet.

Medication Management

In 2014 the Northern Regional Alliance Working Group released a template for service providers to use in the development of a medication management policy (Northern Regional Alliance Working Group, 2014). The template requires only the name of the service provider to be inserted at various points to be complete. The stated purpose of the policy is to ensure that:

- Support service user's informed choices to take medication (sic)
- Persons being responsible for medication processes complete their tasks in a manner that is consistent with legislation, relevant standards and guidelines (p. 1)

Maintenance of service user's independence in managing their medication is an aim of the policy, which is primarily targeted at organisational management system level, rather than the specific practice of HSWs. The document contains a flow chart that provides action points for prescribers, service users, and service providers and staff at different stages of medication management processes. The flow chart includes embedded links to websites for additional information/resources, such as legislation and hand-washing techniques

(some links have expired/moved).

While the community focus of the document is clear, it is not explicit whether the management policy is designed for providers of home-based services. The document is silent on the specific role of HSWs in medication support and administration. 'Staff' are referred to generically and could refer to regulated and/or unregulated workers at different stages in the medication process. A strength of the document is that it incorporates processes for managing controlled drugs, PRN and emergency medications, over-the-counter and CAM medications, and medication errors.

Australian guidelines

Four Australian guidelines/policies were included. These ranged from the 2006 Australian Pharmaceutical Advisory Council's *Guiding principles for medication management in the community* to the 2013 *Nursing guidelines: Management of medicines in aged care* (Australian Nursing and Midwifery Federation, 2013). As in New Zealand, Australian agencies have also recognised the need to develop guidelines for medication management, support and administration. Australia's legislative system (state-by-state and national) adds complexity to this process, but national guidelines have been agreed to.

Following the successful development of national guidelines for medication management in aged-care facilities, national guiding principles for medication management in the community were published (Australian Pharmaceutical Advisory Council, 2006). The twelve principles relate to information resources, self-administration by consumers, dose administration aids, administration of medicines in the community (in-home), medication lists, medication review, alteration of oral formulations, storage of medicines, disposal of medicines, nurse-initiated non-prescription medicine, standing orders, and risk management in the administration and use of medicines in the community. These broad-based guidelines were developed following consultation with a wide range of health professional and community organisations. They aim to provide guidance to service providers in developing or evaluating policies and procedures to support those involved in assisting consumers in managing their medicine(s) (Australian Pharmaceutical Advisory Council, 2006, pp. 3-4). The guidelines clearly differentiate the roles and responsibilities of health professionals, care workers (HSWs), service providers, consumers and their carers in various aspects of medication management (including support and administration) in the home. Primarily developed to support older people manage their medications at home, the authors note "they could also

be used by other community-based services, such as those supporting people with disabilities or chronic disease" (p. 4). The Australian Pharmaceutical Advisory Council guidelines appear to inform other Australian guidelines included in this review (Australian Nursing and Midwifery Federation, 2013; Department of Health and Home and Community Care, 2010; Roberts, 2010).

In 2010 the Western Australia Department of Health and the Home and Community Care Program published a template for service providers (community and home-based) to use in developing a medication support and administration policy (Department of Health, Home and Community Care, 2010). The role of the service providers and support workers (HSWs) in medication support and/or administration is clearly outlined. Medication administration is identified as being within the scope of practice of HSWs who have received training in medication support and administration and demonstrate competency. Interestingly, this policy template indicates that a HSW is only required to maintain/sign a medication record for medication administration. Recording of medication support, including witnessing the client taking the medication, is not required. As with other policies and guidelines outlined, this policy reiterates that while service providers must ensure staff have access to training that provides them with the necessary skills and knowledge to confidently assist clients with medication support and/or administration, HSWs remain responsible for their own practice and must recognise the limits of this. A strength of this policy template is that it provides guidelines for managing 'medication incidents' (Department of Health, Home and Community Care, 2010).

Similarly, the Tasmanian Department of Health and Human Services has published policy guidelines for the medication administration and support for people with disability in community-based settings, including their own home (Roberts, 2010). Under this policy, support workers (HSWs) are able to administer specified medications to clients unable to safely self-manage this, provided that the service organisation, and its policies and procedures, is approved by the Department of Health. It is the responsibility of the service organisation to ensure that employees are competent and receive Tasmanian Qualifications Authority-approved training in medication administration. The organisations are required to have policies and procedures in place consistent with the guidelines, and service agreements are reviewed periodically. HSWs require annual competency assessments and refresher-training every three years. The range of medications that may be administered by HSWs under this policy is broad (but specifically stated) and includes

prescription medication, over-the-counter medications, CAM and specific narcotics. Additional policies (appended to the main policy) clearly stipulate requirements for secure storage of and access to narcotics for administration by HSWs to clients in their own homes. Underpinning these guidelines is the recognition that the procedures described are “often routinely taught to family members and guardians in the general community and responsibly delegated by general practitioners and other health professionals” (Roberts, 2010, p. 9); the implication being that HSWs can, with appropriate education and training, clinical support, and policy guidelines, safely administer a range of medications.

In contrast to both the Western Australian Department of Health’s Home and Community Care Program and Tasmanian Department of Health and Human Services, the Australian Nursing and Midwifery Federation (2013) does not consider the administration of prescribed medications to be within a HSW’s scope of practice when working in aged-care facilities or in the community. The Federation’s guidelines indicate that the role of assistants in nursing (HSWs) in medicines use should be limited to supporting people self-administer prepackaged medications. Furthermore, HSWs should not be directed by employers to practise outside of this role. The Federation argues that while unqualified or inappropriately qualified care workers (HSWs) can be made aware of correct procedure for medicines delivery, they do not have the necessary education and knowledge required for making clinical judgements on why they are administering a medicine or when not to administer (p. 5). The Federation states, “adequate resources should be made available by both [Australian state] governments and service providers of aged care to ensure medicines are able to be administered safely and within legislative requirements” (p. 5). Although not stated, it would seem “adequate resources” would include funding for an RN (or EN under delegation of an RN) to administer medication, a requirement in excess of the legislative requirements of most Australian state governments.

United Kingdom guidelines

The legislation pertaining to the administration of medication in the United Kingdom is very similar to that in New Zealand, which means UK-based guidelines and policies were particularly useful in this literature review. As highlighted by the UK Home Care Association (UKHCA) in their Medication Policy Guidance (2012), in the UK “anyone can legally administer **prescribed** medicine to another person. This **includes** prescription only medication (POM) **and** controlled drugs (CD). **The administration must only**

be in accordance with the prescriber’s directions [emphasis added]” (Commission for Social Care Inspection, 2005, cited by United Kingdom Home Care Association, 2012, p. 7).

Guided by this legislative position, the UKHCA has developed a document intended to give homecare providers nationwide guidance on formulating their own medication policy and procedures (United Kingdom Home Care Association, 2012). It is not a stand-alone policy, but sets minimum standards for member organisations with the expectation that member organisations will have other policies, such as those from local authorities, that they are required to adhere to that may include more stringent standards. The UKHCA expects all its member organisations to operate within this policy guidance, stating that, “failure to do so may be considered to be a breach of The UKHCA Code of Practice and in serious cases may result in withdrawal of membership” (United Kingdom Home Care Association, 2012, p. 4).

A strength of the UKHCA document is that it pertains specifically to in-home medication support and administration. It incorporates elements common to the other guidelines for in-home services from the UK included in the review (Durham & Tees Valley Regional Medication Policy Group, 2008; Sheffield City Council, 2010). These elements include policy guidance on support and administration by HSWs of a full range of medications: prescription (including controlled drugs), over-the-counter, as/when required (PRN), and ‘in emergency’. All three documents describe three levels/tiers of medication assistance (support) that can be provided by HSWs subject to appropriate levels of education/competency and client need. (This aspect of the UK documents is discussed in Theme 3 of this report: Education and Training.) These are:

- Tier 1: The service user is independent and needs physical assistance only with their medication. All interventions are initiated at the request of the service user. Care workers might be asked to help with opening bottles and packets; shaking bottles; removing lids from bottles; popping pills out of packages; pouring out medicine etc.
- Tier 2: The service user is not totally independent but can manage their medication needs with oral assistance to remind them about their medication. This means the care worker may need to ask the service user whether they have taken their medication or remind them to take their medication.
- Tier 3: The service user is not independent and cannot manage their medication needs without care staff administering their medication. This means that the care workers will need to administer medication to the

service user at each visit. This will include checking the medication requirements against the medication administration record, preparing the medicines by opening bottles and packets of tablets and removing them for the service user to take; pouring out and giving a dose of medicine; opening a monitored dosage system and giving the medication to the service user to take; applying creams; applying eye, ear and nose drops, and sometimes administering specialist medication (invasive procedures should only be undertaken after specific training by a healthcare practitioner has been given and has been signed off as competent). (United Kingdom Home Care Association, 2012, pp. 10-11)

Interestingly, the UKHCA guidance policy includes discussion and direction in regard to covert administration of medications. While this is not permitted in general, it is noted that in cases where a client experiences impaired capacity and it is within their best interest covert administration may be permitted. Specific guidelines for how this is decided and operationalised are given (United Kingdom Home Care Association, 2012, p. 12).

All three UK documents provide in-depth specific procedural guidelines for HSWs on medication administration, such as wearing gloves for administration of topical medications, which could inform development of procedural check-lists. A fourth UK guideline document from the Mersey Care NHS Trust (Hart, Hardiman, & Mayer, 2011) was initially included in the review (Table 1) but subsequently excluded as the target population was people with disabilities living in group homes. Such homes have structured environments and staffing levels conducive to certain approaches to medication management, support and administration not possible in individual client homes, such as double-checking by two staff.

In summary, there is a range of guidelines and policy documents available that have potential to inform the development of New Zealand-wide guidelines on medication support and administration; arguably the most useful of these being the ones developed by the Waikato DHB (2010) and the UK Home Care Association (United Kingdom Home Care Association, 2012). Common to all the guidelines/policies is the need for HSWs to be familiar with their employers' policies and guidelines relating to medicine administration, and be aware of their own role and responsibilities within their job description/scope of practice. This must be underpinned by adequate education, training and competency assessment.

Education and training in medication support and medication administration for HSWs

Appropriate education and training of HSWs in medication support and administration are key elements of the legislation and sector guidelines, policies and standards discussed under the previous two themes. Included in the review were six documents pertaining specifically to education and training (four from New Zealand, two from Australia). Many of the guidelines referred to in the previous section include some recommendations for education and training, which are discussed as appropriate.

Most employers of HSWs in New Zealand provide industry-based training, with their employees completing NZQA unit standards/national qualifications while on the job rather than studying separately at a polytechnic or other tertiary provider. Service-provider contracts may also stipulate the work-based training requirements for employees.

As part of the development of a skills strategy for the home and community sector, the New Zealand Home Health Association (now known as the HCHA) commissioned a skills survey of the community support workforce (Quigley & Marsh, 2011). The survey questions were developed in consultation with NZHHA and Careerforce and were sent to 41 of 48 NZHHA members (service providers); members from Canterbury were removed from the denominator as the survey was in the field when the 2011 Canterbury earthquake occurred. Findings were based on responses from 20 member organisations (49% response rate).

Quigley and Marsh (2011) found that 61% of HSWs had no formal qualifications. While 31% of HSWs had Level 2 NZQA qualifications, the survey does not state whether or not these include NZQA Level 2 unit standard 23685 (supporting a person to use pre-packaged medication). Most (n=17) organisations undertook internal training, while 12 supported training by external education providers through contributing payment towards fees and/or study allowance, allowed paid study leave and encouraged staff to gain qualifications.

Increased knowledge and skills in medication supervision (support) and administration for HSWs were identified by survey respondents as both a current and future need. Closely associated with this was the need for improved literacy and numeracy skills for HSWs. One respondent suggested professional boundaries require standardisation, for example, in relation to medication supervision versus administration (Quigley & Marsh, 2011).

Subsequently, the HCHA has been working with Health

Workforce New Zealand and Careerforce to develop a qualifications strategy for the ongoing training and education of the carer workforce (Home & Community Health Association, 2014b). Careerforce works with employers nationwide to create and implement customised NZQA-recognised “work-based education across the health sector, including the aged care, mental health, disability, [and] social services... It has a pivotal role in the design of the non-regulated workforce, having initiated a five year and 20 year workforce development plan with Health Workforce NZ” (Careerforce, 2014, p. 2).

New Zealand Qualifications Authority: Unit standards

The NZQA is responsible for qualifications recognition and standard-setting for some specified unit standards within the New Zealand Qualifications Framework. Unit standards are developed by industry training organisations and by two NZQA units (New Zealand Qualifications Authority, n.d.). Three unit standards currently available are particularly relevant to this review; Unit Standards 23685, 20827 and 26985.

Unit standard 23685: Describe pre-packaged medication and the process for its use in a health or wellbeing setting

Unit standard 23685 is an entry-level standard for people providing services in a health or well-being setting and is at Level 2 on the NZQA framework. People credited with this unit standard are able to describe pre-packaged medication, and the process for supporting a person to use pre-packaged medication, in a health or wellbeing setting (New Zealand Qualifications Authority, 2015b). ‘Health or wellbeing setting’ includes but is not limited to aged care, acute care, community support, disability, mental health and social services sectors. Given this, the home-care setting can be implied. Pre-packaged medications are defined as “blister packs and/or other pre-packaged medicines prepared for individuals by a registered pharmacist, and containing detailed instructions for the person for whom the medication is prescribed and their support workers” (p. 2). HSWs who have achieved this standard may support a person to use pre-packaged medication only, and in doing so must comply with organisational policies and procedures. They must also be able to articulate the benefits and potential risks to the consumer of using the pre-packaged medication as well as processes for recording and reporting medication adherence. This standard does not specifically define ‘support’.

Unit standard 23685 can be credited towards a New Zealand

Certificate in Health and Wellbeing (Level 2), in either the social services sector (Careerforce, 2015c) or the health, home and community, aged and disability sectors (Careerforce, 2015b).

Unit standard 20827: Support a person to use prescribed medication in a health or wellbeing setting

Unit standard 20827 is at Level 3 on the NZQA framework and builds on unit standard 23685, and includes supporting a person to take not only pre-packaged medication but also other forms of prescribed medications including creams, inhalers, ointments, oral and topical preparations (e.g., eye/ear/nose drops/sprays and transdermal patches) (New Zealand Qualifications Authority, 2015a). People credited with this unit standard are able to identify the person who is to receive prescribed medication; read and interpret written instructions for medication usage; support a person to use prescribed medication; and record and report medication usage, in a health or wellbeing setting (p. 1). As with the previous standard (23685), the home-care setting can be implied. Achievement of this standard requires knowledge and practice competency in identifying the recipient of the medication, interpreting written instructions for medication usage, supporting the person to use the required medication, and recording and reporting medication usage. This standard stipulates that ‘support’ “should aim to maintain, improve, or restore a person’s independence and/or interdependence by utilising the person’s existing strengths and appropriate resources; but may include *providing assistance* to enable a person’s health and wellbeing needs to be met” (p. 2 [emphasis added]). What is not clear is whether this ‘assistance’ moves beyond medication support (defined for this review as reminding clients to take prescribed medicines or assisting them in opening packages) to medication administration (the giving/administration of prescribed medicines). Given the types of prescribed medication covered by this standard (including ointments and creams) some degree of administration can be assumed. HSWs achieving this standard must demonstrate compliance with the care-recipient’s personal plan and organisational policies and procedures.

Unit standard 20827 can be credited towards a New Zealand Certificate in Health and Wellbeing (Level 3) in either the support work strand (Careerforce, 2015a) or the health assistance strand (Careerforce, 2015d).

Unit standard 26985: Support a mental health and addiction service user to manage prescribed medication

Unit standard 26985 is at Level 4 on the NZQA framework and is designed for support workers in a particular care context: mental health and addiction services (New Zealand Qualifications Authority, 2012). While not specifically stated in the standard, it is implied that these may be in-patient or community services, including home-based. HSWs achieving this unit standard are able to “to describe prescription medication for mental health and addiction service users, and support mental health and addiction service users to manage prescription medication” (p. 1). Specific knowledge in regard to prescribed medication for mental health and addiction users and competency requirements for supporting service users are outlined. As with the previous NZQA unit standards HSWs must demonstrate compliance with the care-recipient’s personal plan and organisational policies and procedures.

Unit standard 26985 can currently be credited towards a National Certificate in Mental Health and Addiction Support (Level 4), although this qualification is to be replaced in 2016 by a new qualification yet to be announced.

All three unit standards can be achieved individually and are optional rather than compulsory courses in the associated New Zealand Certificates. HSWs who have attained these unit standards are able to manage and administer medications to clients in the home, however, HSWs who cannot demonstrate competency and compliance with NZQA unit standards, or equivalent, cannot.

Unregulated Healthcare Workers Education Framework (NZNO, 2011)

The New Zealand Nurses Organisation (NZNO) is one of two professional associations for nurses in New Zealand. In 2011 the NZNO released a position statement that outlines an education framework for unregulated healthcare workers “to provide a nationally recognised, inclusive and transferable education framework for unregulated healthcare workers, which does not conflict with the regulated nurses’ framework, or put public safety at risk” (New Zealand Nurses Organisation, 2010, p. 1). The position statement, while not specifically focused on education/training related to medication support and administration, advocates a staircased approach to education for unregulated healthcare workers (HSWs) which offers opportunities for advancement and recognition of prior learning (the recent updating of the New Zealand Certificates in Health and Wellbeing reflects such a staircased

approach). This 2011 NZNO statement called for a consistent nationally-recognised training programme and qualification, and process of ongoing service development for HSWs in New Zealand. NZNO argued that a national framework would make it easier for HSWs to further their education or change jobs, as well as reduce the risk for RNs who may be legally responsible for directing and supervising the work of HSWs. This position mirrors international concerns (Adrian, 2009; Australian Nursing and Midwifery Federation, 2013; Duffield et al., 2014).

Literacy, numeracy, and health literacy

The HCHA/Careerforce-commissioned skills survey (Quigley & Marsh, 2011) identified the need for improved literacy and numeracy skills for HSWs. While the need for adequate levels of literacy and numeracy are implied in most of the guidelines for education and training of HSWs in medication support and administration, few address this specifically. From January 2016, assessment of literacy and numeracy is required as part of the enrolment process for all NZQA Level 2 courses and is available as an option for Level 3 and 4 courses (Careerforce, 2016). Assessment of literacy and numeracy is aimed at identifying trainees who may need additional support rather than being used as a tool to exclude them. This is consistent with the two international guidelines for education and training that explicitly address literacy and numeracy (Community Services and Health Industry Skills Council, 2012; Durham & Tees Valley Regional Medication Policy Group, 2008).

Adequate levels of literacy and numeracy do not necessarily equate to adequate levels of health literacy. Health literacy has been defined as “the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions” (Kickbusch, Wait, & Maag, 2005, p. 8). Health literacy is usually considered in relation to consumers/patients, yet adequate health literacy is equally important for HSWs if they are to properly and safely provide medication support and administration.

Research from the United States by Lindquist, Jain, Tam, Martin and Baker (2011) found that over a third of caregivers had inadequate health literacy. Lindquist et al. (2011) used interviews, the Test for Functional Health Literacy (TOFHLA) and a medication-dispensing test to determine health literacy levels and the health-related responsibilities of 98 paid non-familial caregivers of older people living at home (HSWs). The ‘medication-dispensing test’ was designed to assess knowledge and ability to read and follow the instructions on

medication labels, which mirrors the level of skill required in the NZQA unit standards relating to the “right person, right medicine, right time, right dose, right route” (New Zealand Qualifications Authority, 2015b, p. 2).

Lindquist et al. (2011) found that medication administration and/or support was routinely provided by both adequately (64.3 %) and inadequately (35.7%) health literate caregivers (HSWs). Regardless of literacy levels, a large number of HSWs were unable to follow directions on pill bottles, with those with inadequate health literacy making significantly more errors. Lindquist et al. recommend that health literacy of HSWs be assessed prior to allocating tasks, and additional education provided as necessary.

International guidelines for education and training

International guidelines reviewed under the previous theme include recommendations and/or standards for education and training of unregulated staff (HSWs) in medication support and administration. Overall, these recommendations are consistent with the New Zealand standards as outlined in the NZQA unit standards 23685, 20827 and 26985.

The United Kingdom Home Care Association’s *Medication Policy Guidance* (2012, p. 12) document refers to a “skills for care medication knowledge set” designed to provide organisations with a template for the development of training programmes or by which to compare externally purchased training programmes. This knowledge set, now in its third edition, could not be accessed for this review, but is available for purchase as a ‘train the trainer’ pack. The Durham & Tees Valley Regional Medication Policy Group (2008) provides more detail of the knowledge set required at each of the three tiers of medication support and administration outlined in theme 2 of our 5 presented themes (‘Current sector guidelines, policies and standards informing the practice of HSWs’). The knowledge set requires achievement of national standards and has equivalence with the NZQA unit standards but additionally stipulates competence to national standards (NVQs – National Vocational Qualifications) for literacy and numeracy at each level.

In Australia, the Australian Skills Quality Authority (ASQA) is the national regulator of Vocational Education and Training (VET) under a structure similar to the NZQA and Careerforce in New Zealand. VET enables students to gain qualifications and specific skills to help them in the workplace with ASQA oversight to ensure a minimum skill standard. ASQA levels are similar to NZQA with courses on medication support and administration at levels II and III (certificate level) on the

qualifications framework. The descriptor for one such course, ‘CHCCS3058 Assist client with medication’ (Community Services and Health Industry Skills Council, 2012), was included in the documents supplied for this review by HCHA. The course has been superseded by HLTHPS006 (Community Services and Health Industry Skills Council, 2016) and describes the skills and knowledge required to prepare for and provide medication assistance, and complete medication documentation, as well as supporting a client to self-administer medication (p. 2). The performance criteria are similar to the NZQA level 3 and 4 standards (20827 and 26985) although more detail is given. Of note is that a competency assessor must be “a registered nurse or registered enrolled nurse or registered Aboriginal and/or Torres Strait Islander health practitioner” and must satisfy the Australian Standards for Registered Training Organisations mandatory competency requirements for assessors (Community Services and Health Industry Skills Council, 2016, p. 4).

In New Zealand, assessors are required to “either hold a qualification relevant to the content of the standards being assessed, at or above the level of the standards, or have held the standards being assessed for a minimum of 6 months, or are able to demonstrate equivalent knowledge and skills to those standards” (Careerforce NZ, 2016). This means assessors may be health professionals, such as an RN or EN, but this is not mandatory. Healthcare Australia (2016) also provides training modules on medication management for HSWs and those working in aged care, but these courses do not appear to be accredited with ASQA/VET.

Although there are variations in recommendations for appropriate education and training of HSWs in medication support and administration there are consistencies. What is consistent across the New Zealand and international literature is the need for:

- Competency-based training that is most probably work-based and focused on the necessary knowledge and skills required to ensure safe medication support and administration for clients
- Minimum requirements as appropriate to the level of medication support and administration required. For example, support with removing medication from a blister pack or reminding a client to take medication at a particular time requires a different level of knowledge and skills (NZQA level 2 equivalent) than administering medication (NZQA levels 3 and 4 equivalent)
- Competency assessment by accredited assessors and renewed/reviewed annually/biannually or when the HSW moves to a new position

- Literacy and numeracy levels to be considered/assessed as part of education and training. We would suggest this be extended to include health literacy
- Service providers to have clear medication management policies and procedures that are readily accessible to HSWs. These must be consistent with legislative requirements
- Clear reporting lines (supervision) in regard to record keeping and action required of the HSWs should an adverse event occur
- Medication support and administration by HSWs to be provided only when an agreed treatment plan is in place that has been developed in consultation with the client (or their advocate)
- Elements of the home environment that pose specific issues (and also positives) in relation to medication support and medication administration for clients and HSWs

Medication support and administration by HSWs in the home environment presents both challenges and opportunities. When client safety is the 'bottom line' it can be argued that there are some aspects of medication management and administration that become safer in the home environment, while other aspects become more of a threat. These aspects are considered in regard to client and family knowledge, polypharmacy and non-prescription medication, and direction and delegation.

Client and family knowledge/health literacy

Most of the policy guidelines included in this review are underpinned by the tenet that clients self-manage their medications. The work of HSWs is to support self-management and is based on a documented care-plan developed in conjunction with clients and/or their representatives. This assumes that clients and their families/representatives have adequate knowledge about their medication regimen, which may not be the case (Lang et al., 2015). In a UK study (Gordon, Smith, & Dhillon, 2007), that included in-home interviews with 98 people living with long-term conditions (mean age 67 years; range 32-89), 64 participants described medication-related problems that included modifying doses and dosing regimens, forgetting to take medication, managing poly-pharmacy, manipulating packaging, difficulty in reading and/or understanding medication labels, and lack of information about their medications. While it is clearly possible to ameliorate some of these problems with support from HSWs (e.g. forgetting to take medication and

manipulating packaging) others are out of the scope of practice for HSWs. Indeed, some of these issues could place HSWs in a difficult position (e.g. the client who wants to modify doses or lacks information about their medications), and lead to tensions between the HSW and client/family. It is important that clients and/or families are actively involved in decision-making in relation to their medications but require adequate knowledge to do so. As health literacy levels cannot be assumed, client and/or family knowledge should be assessed as part of care-plan development, and any knowledge deficits addressed and reviewed over time by qualified health professionals (e.g. pharmacist or RN) (Gordon et al., 2007). Adequate processes should be in place to enable HSWs to report issues with medication support and administration, and to seek immediate guidance from suitably qualified staff in their service organisation (Sheffield City Council, 2010; United Kingdom Home Care Association, 2012).

Medication management practices by clients and/or family are highlighted in some of the guidelines reviewed. Practices such as family members (and HSWs) filling medication compliance aids (which are unsealed, not tamper proof, and unlabelled) or removing medication from the original containers have been identified as problematic (Durham & Tees Valley Regional Medication Policy Group, 2008; Lang et al., 2015; Sheffield City Council, 2010; United Kingdom Home Care Association, 2012). While some guidelines explicitly state that HSWs must not support or administer medication stored in this way (see for example, Australian Nursing and Midwifery Federation, 2013; Durham & Tees Valley Regional Medication Policy Group, 2008; Sheffield City Council, 2010; United Kingdom Home Care Association, 2012), it is only implicit in others. For example, the Waikato DHB Home-based medication oversight services procedures state, "observe or prompt the older person to take the medication, or administer the medication *directly* from the *blister pack / original container*" [emphasis added] (Waikato District Health Board, 2010, p. 12).

A further area of potential tension between clients/families and HSWs has been identified that relates to legislation. Under New Zealand legislation (Medicines Act, 1981) anyone can legally administer prescribed medicines (including controlled drugs) provided this is done in accordance with the directions of the prescriber. This means that family members and HSWs could legally administer any prescribed medication to a client. HSWs, however, must work within their organisational guidelines and may be restricted from doing this, particularly in relation to controlled drugs. It is important that HSWs are aware of and work within their

approved scope of practice, yet most New Zealand guidelines included in this review were either silent or not explicit on the position of HSWs in supporting and administering controlled drugs. UK policies (for example, United Kingdom Home Care Association, 2012) clearly state that in terms of the policy there is no differentiation between controlled drugs and other prescription medication, and that these may be administered by HSWs with adequate training and demonstrated competency.

Polypharmacy and non-prescription medication

People living at home requiring support often have multiple medical conditions that require multiple medications (polypharmacy). They often have more than one prescriber, for example their general practitioner and a specialist, and may be more susceptible to ineffective or unsafe prescribing practices (Bao, Shao, Bishop, Schackman, & Bruce, 2012). New Zealand data shows that the average number of medicines a patient is prescribed increases as the number of prescribers involved in their care increases (Best Practice Advocacy Centre NZ, 2014, p. 6). Furthermore, D. Lee et al. (2013) found almost half (49%) of the 191 community-dwelling participants in their New Zealand study were prescribed at least one potentially inappropriate medication, with the possibility of adverse outcomes.

The Best Practice Advocacy Centre NZ (BPAC) (2014) has identified polypharmacy as a “clinical conundrum”. Polypharmacy can be appropriate and beneficial for clients, but it can also be associated with adverse health outcomes. BPAC suggest two “golden rules”: workers, to “reduce problematic prescribing are to always enquire if patients are taking their medicines as prescribed, and to never assume that all of the medicines a patient is taking are known” (p. 5).

Medication management for individuals living at home and receiving homecare services was the topic of a systematic scoping literature review of 36 studies by Godfrey et al. (2013). Polypharmacy was a common theme across studies and was recognised as a significant issue and predictor of medication errors, and/or potential inappropriate medication use (p.84). Pharmacist review of medication use, and increased coordination of information between service providers and individuals helped reduce these vulnerabilities. Godfrey et al. (2013) concluded further research is needed to develop practical and relevant interventions grounded in specific home-care environments and individual/family abilities.

Polypharmacy and adverse medication events in older people was the subject of a pilot study which reviewed the medical charts of older people (65+) presenting to an emergency

department in the United States (Nixdorff et al., 2008). The chart review, combined with patient interviews, found a high prevalence of potentially inappropriate medications, which may be complicated by inaccurate medication lists obtained by health professionals, and unwillingness of patients to disclose use of complementary and/or alternative medicines (CAMS) (Nixdorff et al., 2008). This study is relevant to this review in that it highlights the importance of establishing correct medications used by older people, including CAMS and over-the-counter medications. There is the potential for these to be administered by HSWs without the recognition of possible adverse interactions between medications. It is important therefore that education, guidelines and policies consider CAMS and over-the-counter medication, as did, for example, the Australian Nursing and Midwifery federation guidelines (2013, pp. 19-20).

HSWs need to be aware of the potential risks associated with polypharmacy (including prescription, non-prescription and CAMS medications), however, the potential solutions to ameliorate these risks are for the most part outside their scope of practice. Organisational protocols should include provision of a regular medication review by a pharmacist, and assessment of client medication practices by suitably qualified staff.

Direction, delegation and safe practice

Successful implementation of current health policy in New Zealand relies on the provision of quality home-based support services. Support and/or administration of medications by HSWs is an important component of this. The comparative isolation of a client’s home (compared with institutional settings) reduces some risks associated with medication support and administration by HSWs. In the home it is less likely, for example, that the wrong medication is given to the wrong client. The fact that HSWs usually work in isolation and/or at a distance from any supervision means that procedures used in institutional settings, such as cross checking by two people, cannot be maintained in the home. Instead, safe practice is dependent on such things as robust organisational policies, good care-planning and reporting, and the knowledge base of the HSW (including understanding of scope of practice). The level of supervision provided to HSWs, and whether or not this was under the direction and delegation of registered health professionals (usually RNs), was identified in this review as a point of contention.

As previously outlined, legally, HSWs can provide medication support and administration without any supervision, however, many of the guidelines, policies, and research articles

included in this review argue that appropriate supervision and delegation is essential in maintaining client safety and public protection (see for example, Bryant, 2015; New Zealand Nurses Organisation, 2012). In its guideline on the delegation of care by an RN to a healthcare assistant, the Nursing Council of New Zealand (2012) provides the following definitions. Delegation is “the transfer of responsibility for the performance of an activity from one person to another with the former retaining accountability for the outcome, [while] ‘direction’ is the active process of guiding, monitoring and evaluating the...activities performed by another” (p. 5).

Across the documents included in this review there is wide agreement that HSWs have to be accountable for their actions. Such accountability needs to be based in good education and training, with documented written evidence of ongoing competency, and clear understanding of practice boundaries. In addition, HSW practice must be supported by organisational protocols for medication support and administration, including supervision and mentorship. A number of documents highlight the professional responsibilities of registered health professionals (particularly nurses) in the direction and delegation of care to unregulated healthcare workers (Australian Nursing and Midwifery Federation, 2013; New Zealand Nurses Organisation, 2012; Nursing Council of New Zealand, 2012). In relation to medication support and administration by HSWs, direction and delegation become particularly relevant if/when an RN or other registered health professional is employed by a service organisation. In such situations, RNs in New Zealand are accountable under legislation (HPCA Act, 2003) for decisions made in regard to delegation and direction. The Nursing Council of New Zealand (2012) policy states that RNs must ensure a healthcare assistant (HSW) who has been delegated an activity:

1. understands the delegated activity
2. has received clear direction
3. knows who and under what circumstances they should ask for assistance
4. knows when and to whom they should report (p. 6)

Under the policy ‘direction’ may be direct (when the accountable person, e.g. RN, is actually present and observes, works with and directs the person) or indirect (when the accountable person works in the same facility or organisation as the supervised person but does not constantly observe his/her activities). The accountable person must be available for reasonable access, i.e. must be available at all times on the premises or be contactable by telephone (in community settings) (Nursing Council of New Zealand, 2012). The

Nursing Council policy, although specific to RN delegation and direction to healthcare assistants, provides excellent guidelines that can inform service organisations who employ HSWs providing in-home care.

Two research studies included in this review (Craftman, Hammar, von Strauss, Hillerås, & Westerbotn, 2015; De Vliegheer, Aertgeerts, Declercq, & Moons, 2015) provide further insight into issues related to direction, delegation and safe practice.

Craftman et al. (2015) used focus groups with 19 home-care assistants (HSWs) in Sweden to explore their perception of medication administration (but not support) to “older people living at home, as delegated to them in the context of social care” (p. 201). They found that medication administration was accepted by HSWs as an inevitable and routine part of their job. Although HSWs were discouraged from accepting responsibility for medication administration until they felt competent, refusing to administer was not seen as a realistic alternative. HSWs considered ‘common sense’ to be the fundamental knowledge requisite for medication administration, and most did not know the purpose of the medication they were administering. Assessment of HSWs’ competency in medication administration was identified as problematic by the participants themselves, and often came down to being trusted by the person delegating authority to them rather than any formal appraisal of knowledge and practice. As Craftman et al. (2015) identified, this raises concerns about client safety. Additionally, participants reported that they sometimes had difficulty receiving the supervision and support they required and expected.

Recognising the increasing demand for home healthcare in Belgium, De Vliegheer et al. (2015) carried out a cross-sectional study to explore the care activities of 2478 home nurses (RNs) and 277 healthcare assistants (HSWs) in 17 service organisations in Flanders. Activities identified by HSWs included medication support and administration. Of particular concern was the reported finding that HSWs took on tasks that could not legally be delegated to them (p. 610). Although legally able to administer medications, HSWs in Belgium can only do so using medications prepared and personalised by a pharmacist or home nurse, but the researchers found that HSWs did, at times, prepare oral medications and insulin. While the results are limited, this study is important in that it begins to describe the blurring of professional boundaries, providing evidence of HSWs taking on tasks outside of their scope of practice.

In summary, appropriate processes for direction and delegation are fundamental to the safe practice of HSWs in

medication support and administration, and must be in the best interests of clients. The HSW role needs to be supported by a clear job description, education and training, and protocols that support practice; provide supervision and mentorship; and include risk assessment and management (Bryant, 2015). It is important the HSWs understand their scope of practice, are not put in a position where they have to exercise clinical judgement outside of their scope of practice, and are able to call on an RN or other suitably qualified superior whenever necessary.

Initiatives to improve medication support and medication administration

The review identified a number of initiatives that are being developed to improve medication support and administration. Most of these focus on system- or organisation-level changes and do not directly involve medication support and administration by HSWs. For example, an innovative project in the Wairarapa has been developed to help people (particularly those with multiple long-term conditions who have complex medication needs) remember which medicines to take and when, and also aims to ensure prescribing clinicians consider the effects of combining medicines (Ministry of Health, 2011a). Similarly, Kitson and her Canadian colleagues have developed and are testing a 'circle of care modelling' approach to understand (and improve) the complexities of medication communication across the care continuum (Kitson, Price, Lau, & Showler, 2013).

Only one initiative was identified in the review documents that directly related to medication support and administration by HSWs: the Workforce Innovation for Safe and Effective (WISE) Medicines Care Model (C. Y. Lee et al., 2015). This Australian model was developed in consultation with a range of stakeholder groups, including community nursing and aged-care providers, consumers, government departments, and health professional organisations. It was designed to enable nurses to delegate medicine support to HSWs in response to changing community-care demands in the face of ageing populations, increasing incidence of long-term conditions, earlier discharge from hospital, and a shift towards home-based rather than residential care. Under these conditions, reliance on nurses to provide support needs is probably unsustainable due to workforce shortages and budgetary limitations; extending HSWs' scope of practice was considered appropriate.

The WISE Medicines Care Model (C. Y. Lee et al., 2015) incorporates the following components:

- Person-centred medicines management assessment

tools used by nurses to assess client risk of adverse medication events or errors and determine level of support required

- HSWs delegated (under indirect supervision) to provide medication support to clients identified as 'low-risk'. Support includes "prompting clients to self-administer medicines, removing medicines from packaging, crushing tablets, and assisting with administration of oral and topical medicines" (p. 3)
- Organisational policies and procedures revised to reflect HSWs' expanded scope
- Scenario-based practice guidelines were developed to assist HSWs problem-solve potential issues that may arise within the home
- HSWs completing competency based training in medication support, including Australian Industry Skills Council units (as outlined in Theme 3 above)
- RNs/ENs being trained in the model, which includes assessment of medications management, and delegation and supervision of medication support tasks to HSWs

The model was first implemented in February 2013 and evaluated in a prospective before-after mixed-method study (C. Y. Lee et al., 2015) that recruited home-dwelling older people (50 years and over) receiving home visits for medication support, nurses involved in delivery, delegation and supervision of medicines support services, and HSWs currently employed by the service organisation (two metropolitan sites with a not-for-profit community nursing service in Victoria, Australia) who received WISE training (as outlined).

C. Y. Lee et al. (2015) found that this model enabled nurses to safely delegate medication support to HSWs. Training in the WISE model allayed nurses' concerns and the expanded HSW role resulted in improved job satisfaction. Nurses and clients were generally comfortable with the role and it freed up nurses to undertake more complex duties. No adverse events related to medication support by HSWs were reported, suggesting the model did not adversely impact on client safety (p. 8). Evidence from this study suggests the WISE medicines management model of care provides a framework for workforce development and implementation of safe and effective medication support by HSWs. Although the WISE model was trialled within a community nursing service, this workforce model could be considered in other settings including home-care services in New Zealand.

CONCLUSION

There is a dearth of literature relating specifically to medication support and administration by HSWs in the home-care environment; however, guidelines (New Zealand and international) are available that can inform the development of policies and processes to provide safe and effective services to support home-based clients in taking medications.

Common criteria for provision by HSWs of safe, effective medication support and administration services include:

- Clients and/or their representatives retain responsibility for medications. HSWs provide support and assistance for them to self-manage these, which follows a documented care plan developed in conjunction with the client and/or their representative, and based on client's informed consent
- Organisational protocols should include provision of a regular medication review by a pharmacist and assessment of client medication practices by suitably qualified staff
- Medication support and medication administration require different levels of knowledge and competency, which must be reflected in education/training provided. Minimum requirements as appropriate to the level of medication support and administration required
- Competency-based training that is most probably work-based, and focused on the necessary knowledge and skills required to ensure safe medication support and administration for clients
- Literacy and numeracy levels to be considered/assessed as part of education and training. We would suggest this be extended to include health literacy
- Competency assessment should be completed by accredited assessors and renewed/reviewed annually/biannually or when the HSW moves to a new position
- Employer responsibilities:
 - Development of robust organisational policies and procedures relating to medication support and administration by HSWs that are consistent with legislative requirements
 - Provide access to training that provides HSWs with necessary knowledge and skills
 - Adequate processes should be in place to enable HSWs to report issues with medication support and administration, and to seek immediate guidance from

suitably qualified staff in their service organisation

- HSW responsibilities:
 - Be familiar with their employers' policies and guidelines relating to medicine administration
 - Be aware of their own role (and the limits of this) and responsibilities within their job description/scope of practice
 - Understand that he/she retains responsibility for their actions and remains accountable to their supervisor/employer
 - Inform their supervisor/employer if they do not believe they have the necessary skills and knowledge to safely complete medication support and administration tasks
 - Understand that they must demonstrate ongoing competency to provide medication support and administration within their scope of practice/job description

In New Zealand, there is legislative freedom for HSWs to administer prescribed medication; however, existing policies, guidelines and research signal a more cautious and restrictive approach that is based on safety for both the client and the HSW. There is little evidence of negative outcomes of HSWs supporting and administering a wide range of medications to clients in their homes, providing they have the right education, training and supervision, and are, in some cases, under the direction and delegation of a registered health professional.

Table 1: Documents/Web sources supplied by HCHA included in the review (n=20)

Author/Date	Title	Organisation
Australian Pharmaceutical Advisory Council (2006)	Guiding principles for medication management in the community	Commonwealth of Australia. Canberra, Australia
Careerforce: Te Tai Pukenga (2014)	Briefing to the incoming Minister for Tertiary Education, Skills & Employment	http://www.careerforce.org.nz/wordpress/wp-content/uploads/sites/5/Careerforce_BIM_2014.pdf
Community Services and Health Industry Skills Council (2012)	CHCCS3058 Assist client with medication	Commonwealth of Australia. Canberra, Australia
Department of Health and Home and Community Care (2010)	Medication support and administration policy	Government of Western Australia
Durham & Tees Valley Regional Medication Policy Group (2008)	Model of good practice for the development of policy for the safe handling, management and administration of medication by carers within domiciliary care across the North West of England	Durham & Tees Valley Regional Medication Policy Group, Durham, UK
Northern Regional Alliance Working Group (2014)	Medication management (version 1)	Northern Regional Alliance Working Group, Auckland, NZ
Hart, P., Hardiman, P., & Mayer, J. (2011)	Guidelines for the administration of medication by healthcare assistants/support workers in community services	Mersey Care NHS Trust. Liverpool, UK
Health Quality & Safety Commission New Zealand, Kupu Taurangi Hauora o Aotearoa (2012)	National Medication Safety Programme Update	Ministry of Health, Wellington, NZ
Home & Community Health Association (2014)	HCHA Annual Report	Home & Community Health Association, Wellington, NZ
Ministry of Health (2013)	Medicines Management Guide for Community Residential and Facility-based Respite Services: Disability, Mental Health and Addiction	Ministry of Health, Wellington, NZ
New Zealand Nurses Organisation (2012)	Guidelines for Nurses on the Administration of Medicines	NZNO, Wellington, NZ
NZQA registered unit standard (2015)	20827, Support a person to use prescribed medication in a health or wellbeing setting.	New Zealand Qualifications Authority, Wellington, NZ
NZQA registered unit standard (2015)	23685, Describe pre-packaged medication and the process for its use in a health or wellbeing setting	New Zealand Qualifications Authority, Wellington, NZ
Quigley R. & Marsh, K. (2011)	NZHHA Skills Strategy: Survey for New Zealand Home Health Association	Quigley & Watts, Public Health Specialists, Wellington, NZ
Ravenswood, K., Douglas, J., & Teo, S. (2014)	The New Zealand Aged Care Workforce Survey, 2014: A future of work programme report	New Zealand Research Institute, AUT University, Auckland, NZ
Roberts, D. (2013)	Guidelines for the Administration of Medication for people with disability receiving community based disability services	Disability Housing and Community Services, Department of Health and Human Services, Tasmania, Australia
Sheffield First for Health and Well-being (2012)	Medication Policy for Home Support	Sheffield City Council, Sheffield, UK
Standards New Zealand (2012)	Home and Community Sector Standard – NZS 8158: 2012, <i>Medicine Management</i>	HCHA, Wellington, NZ
United Kingdom Home Care Association (2012)	Medication Policy Guidance	UKHCA Ltd, Surrey, UK
Waikato District Health Board (2010)	Schedule One: Home-based medication oversight services for older people	Waikato DHB, Hamilton, NZ

Table 2: Policies, Guidelines, Statutes, Standards included in the review (n=21)

Author/Date	Title	Organisation
Australian Nursing and Midwifery Federation (2013)	Nursing Guidelines: Management of medicines in aged care	ANMF, Melbourne, Australia
Canterbury District Health Board (2012)	Fluid and medication management roles and responsibilities policy	Canterbury DHB, Christchurch, NZ
COAG Health Council (2015)	Communique: The Independent Review of the National Registration and Accreditation Scheme for Health Professionals	Australian Health Workforce Ministerial Council, Australia
COAG Health Council (2015)	Final Report: A National Code of Conduct for Health Care Workers	Victorian Department of Health, on behalf of the Australian Health Ministers' Advisory Council, Melbourne, Australia
Health and Disability Commissioner Act (1994)	No. 88 Statute and Code of Health and Disability Services Consumers' Rights	New Zealand Government, Wellington, NZ
Health Practitioners Competence Assurance Act (2003/2015)	No 48 Statute	New Zealand Government, Wellington, NZ
Healthcare Australia	Courses: HCA Community Care Carers and Support Workers Medication Administration Training – Medication Management	Retrieved from www.healthcareaustralia.com.au/courses
Medicines Act (1981/2016)	No 118 Statute	New Zealand Government, Wellington, NZ
Medicines Amendment Act (2013)	No 141 Statute	New Zealand Government, Wellington, NZ
Ministry of Health (2001)	New Zealand Disability Strategy	New Zealand Government, Wellington, NZ. Retrieved from www.odi.govt.nz
Ministry of Health (2002)	Health of Older People Strategy	New Zealand Government, Wellington, NZ. Retrieved from www.health.govt.nz
Ministry of Health (2011a)	Better, Sooner, More Convenient Health Care in the Community	New Zealand Government, Wellington, NZ. Retrieved from www.health.govt.nz
Ministry of Health (2011b)	Medicines Care Guides for Residential Aged Care	New Zealand Government, Wellington, NZ. Retrieved from www.health.govt.nz
Misuse of Drugs Act (1975/2015)	No 116 Statute	New Zealand Government, Wellington, NZ
New Zealand Nurses Organisation (2010)	Unregulated Healthcare Workers Education Framework Policy Statement	NZNO, Wellington, NZ
New Zealand Qualifications Authority (2014)	Qualifications Reference 2470, NZ Certificate in Health & Wellbeing. Unit Standards 26985	NZQA, Wellington, NZ
New Zealand Qualifications Authority (n.d.)	What we do	Retrieved from www.nzqa.govt.nz/about-us/our-role/what-we-do/
Nursing Council of New Zealand (2012)	Guideline: Delegation of care by a registered nurse to a health care assistant	NCNZ, Wellington, NZ
Southern District Health Board (2014)	Health and Disability Surveillance Audit Summary	Southern DHB, Dunedin, NZ
Standards New Zealand (2008)	Health and Disability Services (Core) Standards	Standards NZ, Wellington, NZ
Standards New Zealand (2010)	Pharmacy Services Standard	Standards NZ, Wellington, NZ. Retrieved from www.standards.govt.nz/news/media-releases/2010/may/pharmacy-services-standard-published/

Table 3: Articles retrieved from online databases included in the review (n=28)

Author/Date	Title	Journal
Adrian, A. (2009)	Balancing risk and safety for our community: Unlicensed health workers in the health and aged care systems	Australian Nursing Federation, Canberra, Australia
Ahrens, J., Feldman, P. H., & Frey, D. (2002)	Preventing medication errors in home care	<i>Practice Brief: Center for Home Care Policy and Research</i> (12), 1-6
Bao, Y., Shao, H., Bishop T. F., Shackman, B. R., & Bruce, M. L. (2011)	Inappropriate medication in a national sample of US elderly patients receiving home health care	<i>Journal of General Internal Medicine</i> , 27(3), 304-310. doi:10.1007/s11606-011-1905-4
Best Practice Advocacy Centre (2014)	Polypharmacy in primary care: Managing a clinical conundrum	<i>Best Practice Journal</i> , 64, 5-14
Bryant, E. (2015)	Delegation in practice	<i>Practice Nurse</i> , 45(8), 22-25
Clark, I. (2014)	Health-care assistants, aspiration, frustration and job satisfaction in the workplace	<i>Industrial Relations Journal</i> , 45(4), 300-312. doi:10.1111/irj.12053
Controller and Auditor General (2011)	Home-based support services for older people: Performance audit report	Office of the Auditor General, Wellington, NZ. Retrieved from: www.oag.govt.nz/2011/home-based-support
Craftman, A. (2015)	Medicine management in municipal home care; delegating, administrating and receiving	PhD Thesis. Stokholme & Sophiahemmet, Stockholm, Sweden
Craftman A., von Strauss, E., Rudberg, S. I., & Westerbotn, M. (2013)	District nurses' perceptions of the concept of delegating administration of medication to home care aides working in the municipality: A discrepancy between legal regulations and practice	<i>Journal of Clinical Nursing</i> , 22, 569-578. doi:10.1111/j.1365-2702.2012.04262.x
Craftman, A., Hammar, L. M., von Strauss, E., Hilleras, P., & Westerbotn, M. (2015)	Unlicensed personnel administering medications to older persons	<i>International Journal of Older People Nursing</i> , 10(3), 201-210. doi:10.1111/opn.12073
De Vliegheer, D., Aertgeerts, B., Declercq, A., & Moons, P. (2015).	Exploring the activity profile of health care assistants and nurses in home nursing	<i>British Journal of Community Nursing</i> , 20(12), 608-614. doi:10.12968/bjcn.2015.20.12.608
Doucette W. R., & Anderson T. N. (2005)	Practitioner activities in patient education and drug therapy monitoring for community dwelling elderly patients	<i>Patient Education & Counselling</i> , 57, 204-210 doi:10.1016/j.pec.2004.06.001
Duffield, C. M., Twigg, D. E., Pugh, J. K., Evans, G., Dimitrelis, S., & Roche, M. A. (2014)	The use of unregulated staff: Time for regulation?	<i>Policy, Politics, & Nursing Practice</i> , 15(1-2), 42-48. doi:10.1177/1527154414529337
Godfrey, C. M., Harrison, M. B., Lang, A., Macdonald, M., Leung, T., & Swab, M. (2013)	Homecare safety and medication management with older adults: A scoping review of the quantitative and qualitative evidence	<i>BI Database of Systematic Reviews & Implementation Reports</i> , 11(7), 82-130. doi:10.111124/jbisir-2013-959
Gordon, K., Smith F., & Dhillon, S. (2007)	Effective chronic disease management: Patients' perspectives on medication-related problems	<i>Patient Education & Counselling</i> , 65, 407-415. doi:10.1016/j.pec.2006.09.012
Home & Community Health Association (n.d.)	About support services: What is home and community health support?	Retrieved from www.hcha.org.nz/about-us/about-support-services/
Kao, H-F. S. (2011)	Medication administration hassles for Mexican American family caregivers of older adults	<i>Nursing and Health Sciences</i> , 13, 133-140 doi:10.1111/j.1442-2018.2011.00590.x
Kitson, N. A., Price, M., Lau, F. Y., & Showler, G. (2013)	Developing a medication communication framework across continuums of care using the Circle of Care Modeling approach	<i>BMC Health Services Research</i> , 13, 418 doi:10.1186/1472-6963-13-418
Lang, A., Macdonald, M., Marck, P., Toon, L., Griffin, M., Easty T., Fraser, K., MacKinnon, N., Mitchell, J., Lang, E., & Goodwin, S. (2015)	Seniors managing multiple medications: Using mixed methods to view the home care safety lens	<i>BMC Health Services Research</i> , 15, 548 doi:10.1186/s12913-015-1193-5
Lee, C. Y., Beanland, C., Goeman, D., Johnson, A., Thorn, J., Koch, S., & Elliott, R. A. (2015)	Evaluation of a support worker role, within a nurse delegation and supervision model, for provision of medicines support for older people living at home: The Workforce Innovation for Safe and Effective Medicines Care Study	<i>BMC Health Services Research</i> , 15, 460 doi:10.1186/s12913-015-1120-9

Lee, D., Marini, N., Moyes, S., Hayman, K., Zolezzi, M., & Kerse, N. (2013)	Potentially inappropriate medication use: The Beers' Criteria used among older adults with depressive symptoms	<i>Journal of Primary Health Care</i> , 5(3), 182-190.
Lindquist, L. A., Jain, N., Tam, K., Martin, G. J., & Baker, D. W. (2010)	Inadequate health literacy among paid caregivers of seniors	<i>Journal of General Internal Medicine</i> , 26(5), 474-479. doi:10.1007/s11606-010-1596-2
Nixdorff, N., Hustey, F. M., Brady, A. K., Vaji, K., Leonard, M., & Messinger-Rapport, B. (2008)	Potentially inappropriate medications and adverse drug effects in elders in the ED	<i>American Journal of Emergency Medicine</i> , 26, 697-700. doi:10.1016/j.ajem.2007.12.007
Ritchie, L. (2012)	Unregulated staff administering medications	<i>Kai Tiaki Nursing New Zealand</i> , 18(10), 30-30
Robbins, E., Dilla, B., Sedlezky, L., & Johnson Sirek, A. (2013)	Coverage of direct service workforce continuing training within Medicaid policy and rate setting: A toolkit for state Medicaid services	Retrieved from: www.medicaid.gov/medicaid-chip-program-information/by-topics/long-term-services-and-supports/workforce/downloads/dsw-training-rates-toolkit.pdf
Skibinski, K. A., White, B. A., Lin, L. I-K., Dong, Y., & Wu, W. (2007)	Effects of technological interventions on the safety of a medication use system	<i>American Journal of Health-System Pharmacy</i> , 64(1), 90-96. doi:10.2146/ajhp060060
Traynor, M., Nissen, N., Lincoln, C., & Buus, N. (2015)	Occupational closure in nursing work reconsidered: UK health care support workers and assistant practitioners: A focus group study	<i>Social Science & Medicine</i> , 136-137, 81-88. doi:10.1016/j.socscimed.2015.05.020
Wright, K. (2010)	Do calculation errors by nurses cause medication errors in clinical practice? A literature review	<i>Nurse Education Today</i> , 30(1), 85-97. doi:10.1016/j.nedt.2009.06.009

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