The Impact of Home Care Nurse Staffing, Work Environment & Collaboration on Patient Outcomes

AHRQ Question

What is the ideal ratio of Registered Nurses to Registered Practical Nurses in home care service delivery to ensure best possible patient outcomes and organizational sustainability in a 24/7 operation?

Why is this question important?

As the home care sector in Ontario continues to expand, decisions about nursing resource allocation are becoming more complex. Home care organizations employ a mix of Registered Nurses (RNs), Registered Practical Nurses (RPNs), and other unregulated care providers (UCPs). In order to meet increasing service demands home care organization must make decisions related to care provider type to ensure efficient use of nursing and non-nursing staff while striving to achieve best possible patient outcomes. As home care patients become increasingly complex, there is a need to understand how provider type and skill-mix influence patient outcomes (Meadows & Prociuk, 2012).

What you need to know

- ✓ No research was located examining the ratio of RN to RPN care providers in home care.
- ✓ Research does support the use of a mix of providers (nurses, UCPs, and others) to optimize patient outcomes.
- ✓ Care delivered by experienced, baccalaureate educated nurses results in improved patient outcomes
- ✓ Increased services intensity improves home care patient outcomes.

Important terms and definitions

Care provider type refers to the professional education and designation of the individual providing home care services. Care providers in home care include RNs, RPNs, and UCPs (e.g., health care aides' and personal support workers).

Skill-mix has been defined as the mix or ratio of different types of care providers within a health care team.

What does the research say?

No home care based research was located examining the ratio of RNs to RPNs (care provider mix) in home care settings. Rather, existing research focuses on care provider mix in acute care settings and nursing homes. For the most part, the existing home care based research fails to focus on care provider type or skill mix in relation to patient outcomes (Massotti et al., 2010).

One Canadian study examined the relationship between educational preparation of nurse care providers and patient knowledge, behaviour, and health status upon discharge from home care. Patients cared for by baccalaureate degree prepared nurses demonstrated improved knowledge about their health conditions as well as better health behaviour scores. These findings highlight

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how "invisible cognitive nursing functions" (e.g. health assessment, care planning, and coordination of care) can impact patient outcomes (O'Brien-Pallas et al., 2002).

Among palliative home care patients, home care services delivered by both nurses and UCPs were found to decrease use of acute care services (Seow et al., 2010). The nurses' role included symptom management and education, while the personal support and homemaking role included assisting with activities of daily living and respite services (Seow et al., 2010). Patients receiving a greater amount of nursing services per week had decreased odds of hospitalization, emergency department visits, and death in hospital. Patient's using more than seven hours of personal support and homemaking services per week had a lower risk of being hospitalized, of visiting the emergency department in the two weeks prior to death, and of dying in hospital (Seow et al., 2010). A second study found that increased personal support services resulted in lower rates of readmission to acute care hospitals and a reduction in institutionalization of elderly patients (Cucinotta et al., 2004).

Another study examined average blood glucose levels, lipid profiles, and blood pressure as well as diet and physical activity in relation to care provider type. Patients were randomly assigned to one of four groups including (1) usual medical care, (2) usual medical care with nurse case management, (3) usual medical care and home visits from a community health worker (UCP), and (4) usual medical care, nurse case management, and home visits from a community health worker. The greatest improvement in diabetic control was found in patients who were seen by a combination of nurses and community health workers (Vetter et al., 2004). This study provides evidence that a collaborative, multi-disciplinary approach is needed in home care. A second study found similar improved health status (e.g. lower mortality) among patients receiving increased care services from a home care aide in addition to nursing care (Cucinotta et al., 2004).

Based on this review of the literature, it is evident that care provided by RNs and RPNs is rarely examined separately in relation to patient outcomes. Rather, nursing care (i.e., care provided by both RNs and RPNs) is examined in relation to care provided by other care provider types including UCPs, physicians, care coordinators, and advanced practice nurses. While the research described above did not examine the ratio of RNs to RPNs in relation to patient outcomes, existing research suggests that patients can benefit from care delivered by a mix of provider including nurses and UCPs.

How can you use this research?

It is difficult to draw definitive conclusions around the relationships between care provider type / skill-mix and home care patient outcomes, as limited research exists on this topic. While this limits home care organizations abilities to base their staffing practices on best evidence, the literature does offer some insight into how the choice of care provider and the intensity of care delivered can influence patient outcomes.

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✓ Increased service intensity results in improved patient outcomes (Cucinotta et al., 2004; Seow et al., 2010; Vetter et al., 2004). While the overall intensity of home care services was examined, additional research is required to better understand how the intensity of nurse versus UCP or RN versus RPN care influences home care patient outcomes.

✓ Home care staffing model including highly educated and experienced nurses, result in improved patient outcomes (O'Brien-Pallas et al., 2002). The positive impact of nurse level of education and years of experience on patient outcomes has implications for the allocation of nursing resources for home care patients. As home care providers usually work alone, the literature suggests that it may be important for all patients to be cared for by a combination of RNs and RPNs as well as new and experienced nursing care providers.

✓ Collaborative multi-disciplinary healthcare teams result in improved patient outcomes (Cucinotta et al., 2004; Seow et al., 2010; Vetter et al., 2004). The positive impact of multi-disciplinary healthcare teams emphasizes the importance of care provider collaboration as opposed to the delegation or substitution of one type of care provider for another. While the existing research begins to address care provider type, further research examining skill mix in the home care setting is needed.

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