

**DOES REGULATING PRIVATE LONG-TERM CARE FACILITIES
LEAD TO BETTER CARE? A STUDY FROM QUEBEC, CANADA**

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ABSTRACT

Objective. In the province of Quebec, Canada, long-term residential care is provided by 2 types of facilities: publicly-funded accredited facilities and privately-owned facilities in which care is privately financed and delivered. Following evidence that private facilities were delivering inadequate care, the provincial government decided to regulate this industry. We assessed the impact of regulation on care quality by comparing quality assessments made before and after regulation. In both periods, public facilities served as a comparison group.

Design: A cross-sectional study conducted in 2010-2012 that incorporates data collected in 1995-2000.

Settings. Random samples of private and public facilities from 2 regions of Quebec.

Participants. Random samples of disabled residents aged 65 years and over. In total, 451 residents from 145 care settings assessed in 1995-2000 were compared to 329 residents from 102 care settings assessed in 2010-2012.

Intervention. Regulation introduced by the province in 2005, effective February 2007.

Main outcome measure. Quality of care measured with the QUALCARE Scale.

Results. After regulation, fewer small-size facilities were in operation in the private market. Between the 2 study periods, the proportion of residents with severe disabilities decreased in private facilities while it remained over 80% in their public counterparts. Meanwhile, quality of care improved significantly in private facilities, while worsening in their public counterparts, even after controlling for confounding.

Conclusions. The private industry now provides better care to its residents. Improvement in care quality likely results in part from the closure of small homes and change in resident case-mix.

Running title: Regulating the private long-term care industry

Keywords: long-term care facility, elderly, quality of care, regulation, Canada

INTRODUCTION

In the province of Quebec, Canada, private facilities for seniors, elsewhere referred to as residential care facilities or assisted-living residences, [1, 2] are mainly for-profit, collective dwellings that provide accommodation, personal care and support services to frail older adults who can no longer live in their own homes [3]. Across Canada, more than 200,000 seniors are currently living in nearly 2,500 private settings [4]. Over half of the total bed supply is located in Quebec. Private facilities for seniors form a diverse mix of settings in regard to admission and discharge policies, staff-to-resident ratios, health-related service offerings, and so on [5, 6]. They come in various forms and sizes, from small family-run residences to large multi-storey buildings owned by corporate chains. Most target older adults with light to moderate disabilities. Admission is under the owners' responsibility who must publicise their facility, fill vacant units and manage waiting lists, if any. The care delivered is privately financed – by the residents – and privately delivered. Monthly charges are influenced by local markets and type of services required. In 2012, the average rent for a private room, including at least one daily meal, ranged from \$1,410 CND for residents requiring less than 1.5 hour of care per day to \$2,323 CND for those with heavier care needs [7].

Until recently, private facilities for seniors have operated in Quebec without any government oversight. In response to widespread concerns about the quality of care provided, the government regulated this industry by requiring facility operators to obtain a certificate of compliance [8]. The 26 regulatory requirements, which cover residents' rights, health and safety, came into effect in February 2007. Operators had until February 2009 to initiate the certification process. The *Conseil québécois d'agrément (CQA)* [9] verifies compliance with certification standards, using information gained from on-site visits and in-depth examination of documents requested from

each operator. The CQA reports its findings to the regional Health and Social Services Agency where the facility is located. The Agency then decides whether to grant the facility a certificate which would be valid for 2 years [8].

Little is known about the effectiveness of regulation as a quality assurance mechanism [10-12]. Moreover, empirically determining the effect of regulation on care quality is challenging [10, 12-14]. The few studies available, mostly from Australia, Europe and the United States [15-17], suggest that tighter control of the residential care industry may improve residents' living conditions, quality of care and quality of life. Most studies, however, suffer from methodological limitations because they rely on data collected by the facilities themselves, fail to include a comparison group or lack resident-level data collected before regulation was introduced.

Between 1995 and 2000, we studied private facilities located in 2 regions (The Eastern Townships and Montérégie) that are broadly representative of Quebec in regard to the variety of services offered by both the public and private long-term care (LTC) sectors [18]. To facilitate interpretation of the data, we compared private and public settings from the same regions. In total, 451 residents from 145 care settings were assessed with respect to their functional autonomy, cognitive abilities and quality of care. Public facilities are formally linked by contract to the Quebec Ministry of Health and Social Services. They are regulated through an accreditation process and visits to the facility, and required by law to provide a standardized set of services that are implicitly tailored to the residents' needs [6]. Like their private counterparts, they vary in size, from family-type resources that accommodate a few older adults at a time, to large LTC centres (equivalent to nursing homes) that are generally reserved for those with the

heaviest care needs [19]. Admission to public facilities is coordinated regionally following a standardized assessment of applicants' needs and availability of informal support. Monthly fees are fixed annually by the Ministry and co-payments that residents must make are determined by each one's ability to pay [20]. In 2013, fees range from \$863 CND in family-type resources to \$1,742 CND for single room occupancy in a nursing home. These amounts cover board and meals, required care and services, and ancillary costs such as medication administration, laundry and incontinence supplies.

Key findings from our 1995-2000 study, which contributed to the government's decision to regulate the private residential care industry, included the significant number of private facility residents with heavy care needs, the lack of qualified and experienced staff, and the difficulties many facilities had in providing high-quality care [3, 21, 22]. That study was reproduced in 2010-2012 to determine whether the quality of care provided by the private sector had improved in the intervening period, during which regulation was implemented. Regulation of the LTC sector varies across jurisdictions. Nonetheless, results from this study could inform policy-makers from other countries who are considering initiatives to improve the care delivered to elderly residents, many of whom are vulnerable and unable to speak for themselves.

METHODS

Both studies were restricted to LTC settings in operation for at least the previous 3 months and excluded those catering solely to (often younger) adults with developmental disabilities. Settings were stratified by facility type (private *versus* public) and size: small (1-9 beds), medium (10-39 beds) or large (≥ 40 beds). In each stratum, we randomly selected settings, in which we randomly selected residents, aged 65 or over, who had lived in the facility for at least 3 months, were not waiting to be transferred to another setting, and had difficulty with 2 or more activities of daily living. We recruited 2, 3 and 5 eligible residents from small, medium and large facilities, respectively. These small numbers of residents, especially for larger facilities, follow from the high within-facility correlation in quality ratings [23]. The stratum-specific numbers of facilities were established based on work by Cochran [24] on multistage cluster sampling, and on variability estimates derived from our previous study [21, 22].

Residents were assessed by trained research nurses or social workers during 2 visits of about 2 hours each, one week apart. One of the visits took place in the absence of any staff member from the home, thereby allowing residents to speak more freely about their living conditions. The other visit took place partially in the presence of staff working with the resident, in order to assess the quality of their interactions. The visits served to gather socio-demographic information on the residents, measure their functional and cognitive abilities, and assess the quality of their care. Functional abilities were assessed using the revised version of the Functional Autonomy Measurement System (SMAF) [25]. The SMAF evaluates a resident's level of independence in activities of daily living, mobility, communication, mental functions, and instrumental activities of daily living. Total scores range from 0 (independent) to 87 (totally dependent), with a score above 40 reflecting great functional dependency. Cognitive abilities were measured with the

Modified Mini-Mental State (3MS) examination that assesses orientation to place and time, attention, memory and language abilities [26]. Total scores range from 0 (worst) to 100 (best), with a score below 60 reflecting severe cognitive deficits.

Quality of care was measured with the QUALCARE Scale, a multidimensional instrument comprising 54 items that assess care in 6 important areas: environmental (14 items), physical (11 items), medical maintenance (4 items), psychosocial (12 items), human rights (7 items), and financial (6 items) [27]. Items are scored on a 5-point scale from 1 (best possible care) to 5 (worst possible care) after spending time in the facility, directly observing and interacting with residents and care providers. The QUALCARE Scale generates a global quality-of-care score and 6 dimension-specific scores, by averaging ratings assigned to all items or to those belonging to a specific subscale. A mean score above 2 reflects inadequate care. The QUALCARE Scale has been shown to be reliable, valid and responsive to between-group differences of 0.25 or more on its 5-point rating scale [21, 22, 28, 29].

Lastly, acknowledging the importance of residents' perspective in assessing care quality, all those without cognitive impairment were asked to rate various aspects of the quality of their care on a scale from 1 (best) to 5 (worst). For comparison purposes, facility managers were also asked for quality ratings, using the same response scale.

Analyses

Student's *t*-test and the χ^2 statistic were first used to compare quality ratings between facility types and over time. These analyses were conducted using SUDAAN (version 10, Research Triangle Institute, 2008), which takes the sampling design into account. Second, we conducted

two-level hierarchical regression analyses with HLM for Windows (version 6.08, Scientific Software International, 2009) in order to simultaneously control for resident- and facility-level covariates that may undermine the causal interpretation of the previous analyses. Six covariates were included in the regression models, 2 at the first level that capture a resident's degree of functional and cognitive impairment (measured with the SMAF and the 3MS, respectively) and 4 at the second level: whether the facility manager had nursing training, and the average age, SMAF score and 3MS score of the sampled residents. These covariates were previously identified as significant correlates of the quality of care delivered to a resident [23, 30]. In both softwares, sample weights reflecting the probability of selection into the sample were assigned to each resident and used in all analyses.

The study protocol, measurement instruments, and consent forms were approved by the authors' Institutional Review Boards.

RESULTS

Resident socio-demographic and clinical characteristics have been described in detail elsewhere [6]. Briefly, few differences were observed in resident socio-demographic characteristics between facility types. Residents were aged 86 years on average; 71% were women and 69% were widowed. Predictably, in both study periods, residents from private facilities were less disabled, both functionally and cognitively, than those living in public LTC facilities. Over-time comparisons revealed that the proportion of residents with severe cognitive ($3MS < 60$) or functional ($SMAF > 40$) disabilities decreased in private facilities (from 45% to 20%) while remaining above 80% in their public counterparts. Hence, the private residential care industry now serves residents with less demanding care needs than 15 years ago, while public institutions have continued to care for the heaviest cases.

Quality assessments are summarized in Table 1, and compared over time and between facility types with both unadjusted and adjusted analyses. In private facilities, the global quality score and all 6 sub-scores derived from the QUALCARE Scale decreased significantly on average between the 2 study periods, implying improvement in all quality domains. In contrast, all mean quality scores increased in public facilities, although some differences were not statistically significant. However, as a result of the reverse pattern of change observed in the 2 types of facilities, *p* values from testing whether changes over time in quality-of-care scores differed across facility types were all highly significant. This is true whether based on unadjusted or adjusted analyses (last two columns of the table).

- Insert Table 1 about here -

Quality ratings given by cognitively able residents show the same patterns of change, i.e., a tendency for post-regulation scores to be lower in private facilities (implying perceptions of better quality care) but higher in their public counterparts, although many comparisons were not statistically significant due to the reduced sample sizes. Between the 2 study periods, the proportion of residents who would recommend their private facility to others rose from 88% to 98.6% ($p = 0.007$), while it remained around 90% among residents from public facilities ($p = 0.383$). In 2010-2012, 91.5% of private facility managers felt they were offering the best possible care, compared to 64.4% among their public counterparts ($p = 0.017$).

Between the 2 study periods, the proportions of residents whose QUALCARE scores were above 2, reflecting inadequate care, decreased from 20.3% to 7.9% in private settings ($p = 0.051$) while rising from 4.2% to 33.2% in public facilities ($p = 0.010$). As shown in Figure 1, the proportion of residents receiving inadequate care decreased in small, medium and large private facilities. Nonetheless, in 2010-2012, from 5.2% to 25.8% of seniors housed by the private sector were receiving inadequate care, depending on the size category. Extrapolating these percentages to the whole of Quebec would suggest that some 9,000 seniors are now receiving suboptimal care, despite living in a facility that was recently granted a certificate of compliance. The situation is even worse in the public sector, where the prevalence of inadequate care currently varies between 21.9% and 34.1%, depending on the size category. We estimate that this situation is now affecting over 15,000 elderly residents.

- Insert Figure 1 about here -

Complementing these data, Figure 1 also shows (in the center of each bar) the proportion of facilities found to provide inadequate care ($\text{QUALCARE} > 2$) to one or more residents. For

example, the 25% of seniors in small private facilities who were receiving inadequate care in 2010-2012 were housed in 27.2% of the facilities in this size category. Similarly, the 34% of residents in large-sized public facilities who were assigned a score above 2 on the QUALCARE Scale were spread over 38.5% of large facilities. Overall, the proportion of private facilities providing inadequate care to one or more residents decreased from 39.9% in 1995-2000 to 18.1% in 2010-2012 ($p = 0.038$), while increasing from 11.4% to 34.1% in public settings ($p = 0.058$).

DISCUSSION

We investigated whether the care provided to disabled older adults improved in private LTC facilities that are now certified. Results clearly show that it did. This conclusion holds, whether based on quality ratings made by our independent assessors, the residents themselves or facility managers. Concluding that the observed improvements result from the certification process is more challenging. Our study cannot determine *when* quality actually improved. Randomised trials, usually considered best for judging effectiveness, are not an option for assessing public policies that apply to all, as is the case here [31]. While acknowledging that results from natural experiments such as ours must be interpreted cautiously [32], we believe certification was the main driver of improvement, through both desired and (likely) unintended effects.

The claim that regulation led to better care is supported in part by the choice of certification standards, many of which are known to impact care quality in LTC settings. These include ensuring a clean, safe environment; providing quality food and leisure activities; treating residents with courtesy and respect; and calling upon public services when a resident's health condition deteriorates. As Figure 1 shows, greater improvement occurred in facilities housing fewer than 40 residents. At the time the certification process was introduced, services in most large settings already met regulatory requirements, making further improvement challenging. Improvements were thus more likely to occur in small- and medium-sized homes, especially in those of medium size financially better equipped to bear the cost entailed by improving the quality of their services. This interpretation, however, must be weighed against 2 unintended effects of the certification process.

A first unintended effect is change in resident case-mix. The care needs of the population served by private facilities are less demanding now than they were 15 years ago [6]. Interviews with facility owners revealed that many, regrettably, chose to no longer admit elderly persons with mobility, cognitive or behavioral problems because they made it difficult to meet some certification requirements (e.g., fire safety and building compliance), without major financial investment. Resident case-mix is a major determinant of a provider's ability to deliver high-quality care [30]. The increased ability of private settings to deliver good care thus results in part from caring for less demanding clients. This impact of certification on the clientele served has important consequences. It leaves no housing options for many elderly persons who are not disabled enough to be admitted to public institutions yet too disabled to be attractive for the private sector. These persons remain at home despite their disabilities. Future studies should examine whether their care needs are met, and by whom.

A second unintended effect of the certification process is withdrawal of the smallest homes from the private residential care market. Such homes made up 72% of private settings in 1995-2000, but only 33% in 2010-2012. Regulation weighs more heavily upon small settings, which typically have one live-in staff member, who can hardly take leave to be trained as required by regulation. Small homes lack resources to call policy-makers' attention to their special needs and cannot benefit from economies of scale [33]. The loss of a single resident due to new regulations can have significant financial impact on these settings [34, 35]. Anecdotal evidence indicates that some facilities, unable financially or unwilling to meet new standards, cease operation completely or turn to other populations, particularly to younger adults with developmental disabilities or mental health problems, who are not currently covered by provincial regulation. We do not know whether these facilities were deficient in their provision of care. While

removing under-performing homes is desirable, the reduced availability of small facilities has implications for those who prefer smaller, homely environments and value the personal nature of the care provided there [35]. The closure of small facilities particularly affects elderly persons in rural areas where establishing a large institution would not be viable.

Despite some evidence of improvement in the quality of care delivered by the private sector, significant problems persist. Currently, 8% of elderly residents are receiving inadequate care and 18% of settings are unable to deliver proper care to all of their residents. These findings suggest that the initial set of certification requirements was not sufficient to ensure quality care.

Requirements were modified in March 2013 [36]. The new regulatory framework defines 2 categories of homes (for autonomous and semi-autonomous persons) and adjusts certification requirements to facility size and category. The “one-size fits all” approach that applied initially has thus been replaced by one more sensitive to the particularities of individual settings. The new regulations also set minimum staffing levels and raise training requirements. The impact of these new requirements on care quality should be studied in the future.

Public LTC facilities were included in our study for comparison purposes, but their inclusion allowed us to confirm that significant quality problems exist in this sector as well [37, 38]. One-third of elderly persons living in large public institutions are receiving suboptimal care. This statistic is all the more alarming given that these are the settings where the most demanding cases are found [6, 33, 37]. Moreover, 70% of residents have severe cognitive deficits and cannot advocate on their own behalf. Many factors are likely at play in public facilities’ inability to deliver high quality care, despite government oversight. These include decay of buildings;

increases in the number of residents with complex care needs, many of which are admitted at end of life; understaffing, high workload and poor working conditions; increased paperwork which limits staff time for resident care; delays in fully implementing the Ministry of Health and Social Services' guidelines and action plans; regulations that are not outcome-oriented; and funding mechanisms that do not sufficiently take into account the needs of the residents and the services they required [1, 11, 37-41]. Hence, while the Quebec government must pursue its efforts to ensure that all private facility residents receive high-quality care, it should be concerned with the situation that prevails in public institutions. Proposed means to address quality problems include legislated minimum staffing levels, as well as improved regulatory, monitoring and funding mechanisms [37, 38, 41, 42].

In conclusion, this study shows that the quality of care provided by private LTC facilities has improved over the last 15 years. Improvements likely result from the certification requirements themselves, but also from change in resident case-mix and closure of small facilities. However, quality problems persist. It remains to be seen whether the new regulations will eliminate the remaining quality problems, without causing the closure of smaller homes or rendering disabled older adults even less attractive for the private sector. Meanwhile, the Quebec government must turn its attention to public institutions which are struggling to meet their heavy responsibility of caring for our society's frailest, most vulnerable members.

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Table 1. Quality assessments, by facility type and study period¹

		Private LTC Facilities			Public LTC Facilities			<i>p</i> value ²	<i>p</i> value ³
		1995-2000	2010-2012	<i>p</i> value	1995-2000	2010-2012	<i>p</i> value		
According to research staff⁴		<i>n</i> =	252	190		199	139		
Global score			1.67 ± 0.06	1.29 ± 0.06	0.001	1.43 ± 0.04	1.64 ± 0.11	0.089	0.001
By dimension:	Environmental		1.68 ± 0.10	1.25 ± 0.05	0.001	1.35 ± 0.07	1.64 ± 0.10	0.031	0.001
	Physical		1.88 ± 0.08	1.42 ± 0.09	0.001	1.54 ± 0.05	1.63 ± 0.13	0.520	0.005
	Medical maintenance		1.43 ± 0.06	1.19 ± 0.06	0.004	1.23 ± 0.05	1.44 ± 0.11	0.077	0.003
	Psychosocial		1.93 ± 0.09	1.39 ± 0.08	0.001	1.75 ± 0.09	1.89 ± 0.16	0.441	0.004
	Human rights		1.33 ± 0.05	1.15 ± 0.04	0.005	1.30 ± 0.07	1.54 ± 0.11	0.061	0.004
	Financial		1.25 ± 0.05	1.12 ± 0.03	0.033	1.05 ± 0.02	1.39 ± 0.09	0.001	0.001
According to residents⁵		<i>n</i> =	142	149		76	41		
Global score			1.50 ± 0.07	1.29 ± 0.09	0.076	1.51 ± 0.14	1.78 ± 0.18	0.242	0.071
By dimension:	Meals		1.91 ± 0.13	1.51 ± 0.13	0.036	1.74 ± 0.14	2.18 ± 0.21	0.095	0.010
	Personal care		1.35 ± 0.08	1.30 ± 0.10	0.702	1.39 ± 0.09	1.77 ± 0.21	0.104	0.111
	Physical environment		1.52 ± 0.09	1.31 ± 0.09	0.115	1.42 ± 0.09	1.91 ± 0.27	0.093	0.031
	Interactions with staff		1.33 ± 0.07	1.13 ± 0.05	0.016	1.47 ± 0.11	1.45 ± 0.15	0.909	0.382
	Freedom in ADLs		1.27 ± 0.07	1.17 ± 0.06	0.285	1.34 ± 0.10	1.67 ± 0.23	0.204	0.120
Would recommend the facility to others (%)			88.0	98.6	0.007	93.4	86.6	0.383	0.007
According to facility managers		<i>n</i> =	80	66		65	36		
Offer best possible care (%)			82.6	91.5	0.160	63.3	64.4	0.920	0.302

¹ Data reported as mean ± standard error unless otherwise indicated. ² From unadjusted analyses of the Period by Facility type interaction. ³ From two-level hierarchical regression analyses of the Period by Facility type interaction, adjusting for resident case-mix and whether the facility manager was trained in nursing (except for the last outcome, *Offer best possible care*, for which a single-level adjusted analysis was conducted). ⁴ Using the QUALCARE Scale with ratings from 1 (best) to 5 (worst). ⁵ Ratings from 1 (best) to 5 (worst).

LEGEND FOR FIGURE 1: Prevalence of inadequate care in LTC facilities, by study period, facility type and size category. The height of each bar indicates the proportion of residents in a given time period, facility type and size category whose QUALCARE score was above 2. The percentages at the center of each bar indicate the proportion of facilities in a given time period, facility type and size category found to deliver inadequate care (QUALCARE score > 2) to one or more residents.

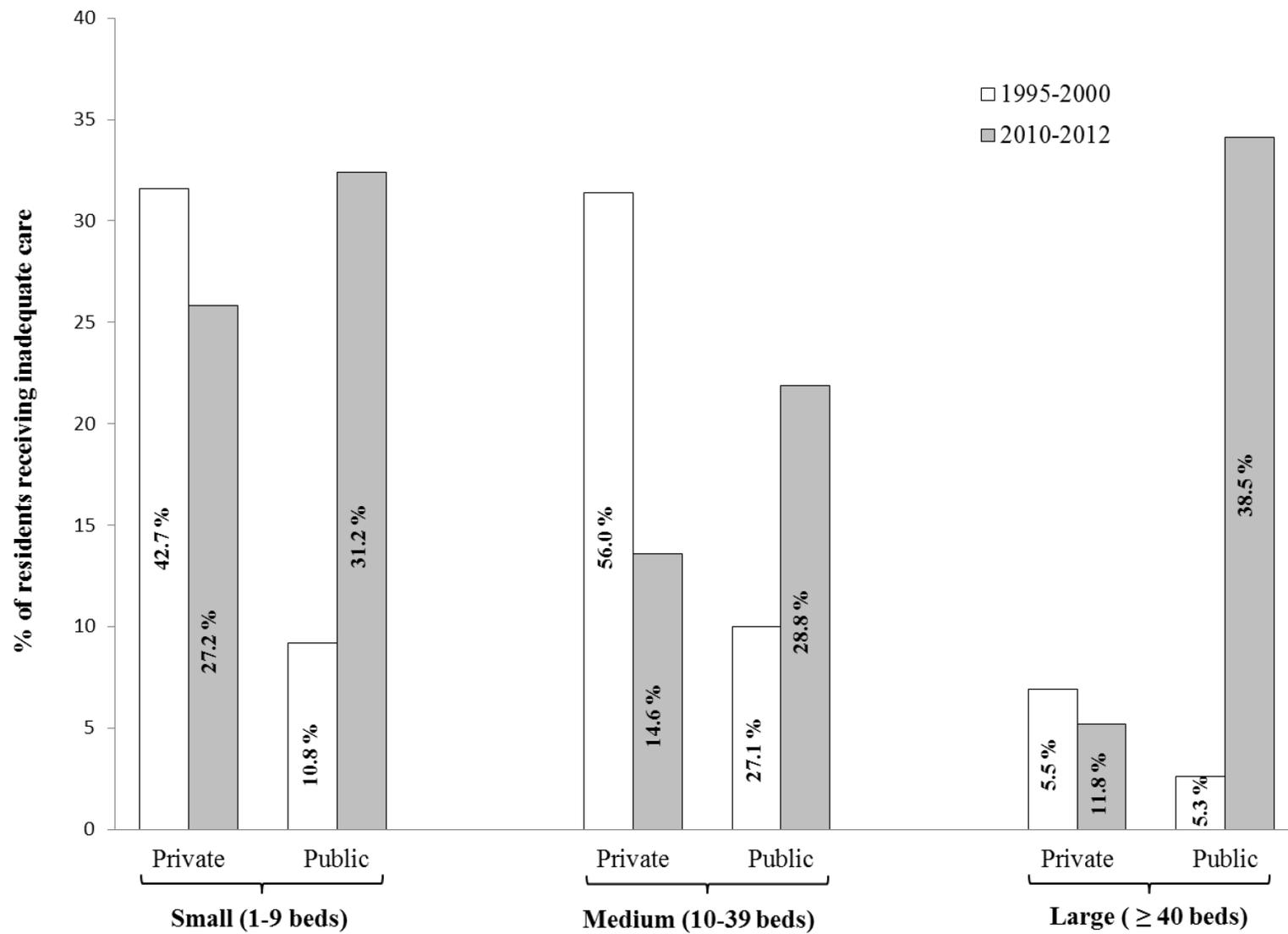


Figure 1