

# National Survey of Geriatricians to Define Functional Decline in Elderly People with Minor Trauma



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## ABSTRACT

### Background

This study was designed to determine a clinically significant point drop in function to define functional decline and the required sensitivity for a clinical decision tool to identify elderly patients at high risk of functional decline following a minor injury.

### Methods

After a rigorous development process, a survey questionnaire was administered to a random sample of 178 geriatricians selected from those registered in a national medical directory. The surveys were distributed using a modified Dillman technique.

### Results

We obtained a satisfactory response rate of 70.5%. Ninety percent of the geriatricians required a sensitivity of 90% or less for a clinical decision tool to identify injured seniors at high risk of functional decline 6 months post injury. Our results indicate that 90% of the respondents considered a drop in function of at least 2 points in activities of daily living (ADL) as clinically significant when considering all 14 ADL items. Considering only the 7 basic ADL items, 90% of physicians considered a 1 point drop as clinically significant.

### Conclusions

A tool with a sensitivity of 90% to detect patients at risk of functional decline at 6 months post minor injury would

meet or exceed the sensitivity required by 90% of geriatric specialists. These findings clearly define what is a clinically significant decline following a “minor injury.”

**Key words:** activities of daily living (ADL), clinical decision rules, functional decline, geriatric assessment, Older Americans Resources and Services (OARS)

## INTRODUCTION

Functional decline is one of the most common and serious clinical problems in elderly patients.<sup>(1,2)</sup> It is often defined and measured by a reduction in ability to perform self-care activities of daily living (ADL) because of a decrement in physical or cognitive functioning.<sup>(3,4)</sup> ADL tasks have been classified into 1) basic activities of daily living (basic ADL) that a person normally performs on a daily basis, such as walking, and 2) instrumental activities of daily living (IADL) that allow an individual to live independently in a community, such as shopping for groceries.<sup>(5)</sup> We used the Older Americans Resources and Services (OARS) ADL Scale that consists of 7 basic ADL and 7 IADL items to determine a clinically significant point drop to define functional decline. Each of the 14 items rate the patients on their ability to perform the activities independently using a 3-point scale as follows: 0 (completely unable to perform the activity), 1 (can perform the activity but with some help), and 2 (can perform the activity without any help).<sup>(1,2,6,7)</sup> A person's score can range from 0 (totally dependent) to 28 (completely independent).<sup>(8-10)</sup> The OARS ADL Scale has been previously validated and used in the emergency department.<sup>(11)</sup>

Functional decline may be acute, occurring within a week, or sub-acute, developing over many weeks or months.<sup>(1)</sup>

It is associated with social isolation, reduced quality of life, and death.<sup>(6,12–16)</sup> It is also an important predictor of hospitalization,<sup>(17)</sup> prolonged hospital stay,<sup>(3)</sup> repeat emergency department visits,<sup>(16,18)</sup> and need for home care.<sup>(3)</sup> It has also been reported that identification of functional decline in elderly patients is more predictive of mortality than organ damage or severity of illness.<sup>(19,20)</sup> With the geriatric population placing an ever-increasing burden on health care, it is essential to develop a clinically useful tool that identifies elderly patients at high risk of functional decline following a minor injury not requiring hospital admission for treatment. Such a tool would likely help close the gap between physician knowledge and actual clinical practice patterns and lead to more appropriate referrals to community resources (e.g., community balance classes, occupational therapy referral, and fall-prevention education).

The goal of this study was to determine a clinically significant point drop on the 28-point Older Americans Resources and Services (OARS) ADL Scale to define functional decline and required sensitivity for any clinical decision tool to identify elderly patients at high risk of functional decline 6 months (i.e., at this point any direct impact due to the acute injury ought to be resolved) after sustaining a minor trauma. Identifying patients at high risk of functional decline as previous studies have demonstrated can prevent adverse outcomes including functional decline.<sup>(21,22)</sup>

## MATERIALS AND METHODS

### Study Design and Participants

This study was a self-administered postal survey of geriatricians in Canada. Geriatricians were surveyed due to their expertise in the field of geriatrics and the relevance of the study and its results to such a specialty. To be eligible for the study, respondents must have been currently practicing medicine and seeing patients 65 years and older. A random sample of 178 geriatricians was selected using computer-generated numbers from all geriatricians in Canada (235 registered in a national medical directory)<sup>(23)</sup> as of August 23, 2011. Half of the geriatricians were randomly selected to receive a monetary incentive in the form of a \$10 coffee card with the first survey.<sup>(24)</sup>

To promote collection of high-quality data, we developed and conducted the study in four stages: 1) key informant, in-person interviews (pre-survey), 2) cognitive interviews (draft survey), 3) pilot testing (final draft survey), and 4) final survey. The survey design and administration was informed by Dillman's Tailored Design technique.<sup>(6)</sup>

### Outcome Measures

The two primary outcome measures for this study were 1) the minimal clinically significant point drop in basic ADL and IADL scores perceived to define "significant"

functional decline and 2) the sensitivity required for a clinical decision tool to identify elderly patients at high risk of functional decline at 6 months following a minor injury. We were interested in determining the values of the outcome measures that 90% of physicians would be satisfied with.

### Questionnaire Development

Prior to developing the survey questionnaire, we conducted exploratory in-depth or key informant interviews of geriatricians to aid the development of the survey. From the key informant interviews we collected a range of responses on geriatricians' current knowledge of functional decline in elderly patients and how it is measured. The cognitive interviews enabled us to identify and address any shortcomings in the questionnaire in terms of sentence structure and format of the input fields. The survey was pretested using a convenience sample of six local geriatricians to identify and address any shortcomings with the survey process or the questionnaire.

The final questionnaire consisted of 13 main questions separated into five sections and was printed on two separate pages. English questionnaires, pre-notification and cover letters were translated into French by a medical translator and administered to those physicians who had indicated French as their language of correspondence in the source directory.

### Survey Administration

After pilot testing the questionnaire and the process with six local physicians, we mailed the surveys to the remaining 172 English- or French-speaking physicians in our sample. Each survey package included a cover letter, a questionnaire, and a prepaid business reply mail envelope. A week after the pre-notification letter, the first survey questionnaire, along with coffee card, if applicable, was mailed. We mailed a reminder every three weeks. We tracked questionnaires to avoid resending a questionnaire to the physicians that responded to the survey or those that were returned due to change of address. The final reminder survey was a special contact survey that was sent through Canada Post's Xpress-post courier service.

The researchers coordinating this study were located at the Ottawa Hospital Research Institute in Ottawa, Ontario, Canada. This study was provided expedited review and approval by the Ottawa Health Science Network Research Ethics Board.

### Data Analysis

Descriptive statistics were calculated to characterize physician responses. Frequency distributions with box plots were generated for the minimally important point drop and required sensitivities. Chi-squared tests were performed to compare characteristics of respondents and non-respondents to evaluate the potential for non-response bias. Two-sided

significance tests were conducted at an alpha level of 0.05. The sample size of 178 was determined to yield a two-sided 95% confidence interval around the mean estimated sensitivity with a maximum width of 4, accounting for the finite population correction factor and an anticipated response rate of 55%. Data were analyzed using SAS version 9.2 (SAS Institute, Cary, NC).

## RESULTS

### Respondents

Of the 178 physicians surveyed, six were not contactable because they had moved and six were ineligible as they were no longer practicing or were not seeing elderly patients. Of the 166 eligible physicians, 117 completed and returned the survey (including the five physicians from the local pilot survey as the pilot and final questionnaire were not substantially different), resulting in a response rate of 70.5%.

Demographic information about the respondents is presented in Table 1. A slightly higher proportion of respondents were female (55.6%). The most common practice location was a hospital (79.5% of respondents). Our results show that more than 84.5% of the physicians had been in practice for 10 or more years.

We used two demographic variables (language of correspondence and geographic region of residence) that were available on the sampling frame to examine the possibility of non-response bias. These findings are summarized in Table 2. Chi-squared analyses showed no significant differences in response rates among the English and French-speaking physicians (*p* value of .579). Similarly, there was no indication of a significant difference in response rates when we compared the regions.

### Point Drop and Required Sensitivity

The results indicate that 90% of physicians would consider a drop of 2 or more points on the 28-point OARS ADL Scale as a clinically significant drop or change in functional decline when considering all 14 basic ADL/IADL items. When considering only the 7 basic ADL items, 90% of physicians would consider a drop of 1 or more points as a clinically significant change in functional decline. Ninety percent (90%) of physicians did not distinguish between patients who do not have support at home versus those who have support at home in making their determination. With respect to required sensitivity of a clinical decision rule, a maximum sensitivity of 90% would satisfy the requirements of 90% of physicians (Figure 1).

More details on the distribution of physician responses on a clinically significant point drop, as well as the required sensitivity, are presented in Figures 2 and 3. The narrow interquartile range (IQR) on the box plots demonstrates that there is less variability on the point drop and the required sensitivity among the physician responses. When the patients have support

TABLE 1.  
Respondent demographics

<i>Characteristic</i>	<i># (%) of Respondents (N=117)</i>
<i>Gender</i>	
Male	52 (44.4)
Female	65 (55.6)
<i>Age</i>	
< 35	6 (5.1)
35-44	37 (31.6)
45-54	33 (28.2)
≥ 55	39 (33.3)
<i>Years in Practice</i>	
< 10	17 (14.5)
10-19	48 (41.0)
> 20	51 (43.6)
<i>Years of Residency Training</i>	
< 3	1 (0.9)
3-4	65 (55.6)
5-9	45 (38.5)
≥ 10	3 (2.6)
<i>Practice Setting</i>	
Solo Practice	9 (7.7)
Group Practice	10 (8.5)
Hospital	93 (79.5)
Other	5 (4.3)
<i>Number of Patients Seen/Week</i>	
≤ 28	63 (53.8)
29-60	40 (34.2)
61-100	11 (9.4)
> 100	0 (0.0)
<i>Number of Elderly Patients Seen/Week</i>	
≤ 20	45 (38.5)
21-30	31 (26.5)
31-50	23 (19.7)
> 50	13 (11.1)

TABLE 2.  
Chi-squared tests of non-response bias

<i>Characteristic</i>	<i>Respondents % (n)</i>	<i>Non-respondents % (n)</i>	<i>p value</i>
<i>Language of the Questionnaire</i>			0.579
English	77.8 (91)	81.6 (40)	
French	22.2 (26)	18.4 (9)	
<i>Region</i>			0.443
Western Canada <sup>a</sup>	26.5 (31)	26.5 (13)	
Ontario	36.8 (43)	46.9 (23)	
Quebec	26.5 (31)	22.5 (11)	
Eastern Canada <sup>b</sup>	10.3 (12)	4.1 (2)	

<sup>a</sup>British Columbia, Alberta, Saskatchewan, Manitoba, Yukon Territory.

<sup>b</sup>New Brunswick, Nova Scotia, Newfoundland.

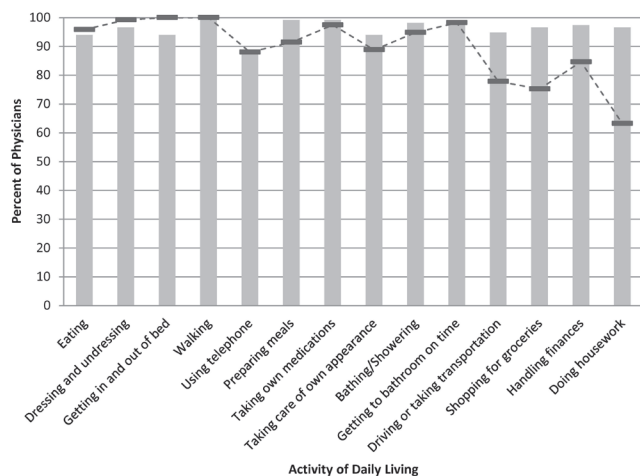


FIGURE 1. Percent of physicians that perceive activity of daily living to be very or somewhat important in terms of performance by patients (dashed lines) and percent of physicians always or often asking if patients have difficulty performing activity of daily living (solid bars)

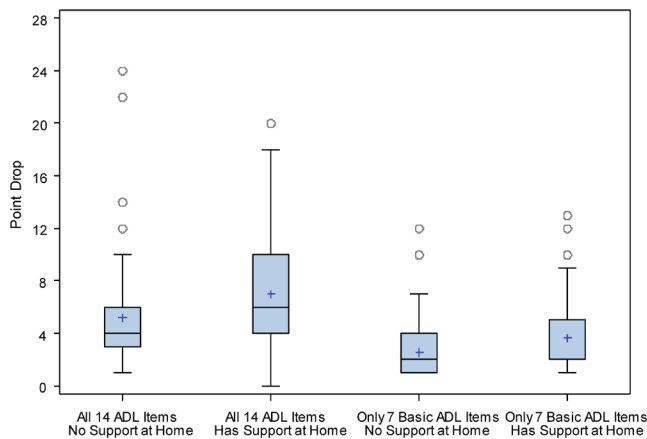


FIGURE 2. Box plots showing distribution of physician responses on a clinically significant point drop to imply functional decline

at home and especially when IADL items are involved (i.e., all 14 basic ADL/IADL items) there is more variability among the physician responses on what constitutes a clinically significant point drop as shown by the wider range of IQR on the boxplot.

The results also show that 90% of physicians would be satisfied with a sensitivity of 90% for a clinical decision rule to identify elderly patients at high risk of functional decline. The physicians' median required sensitivity, percent (IQR), for a clinical decision rule to identify injured seniors at high risk for a functional decline six months post-injury was 85% (80–90%).

### Assessment for and Relevance of ADL to Functional Decline

The results of the physician responses on the importance of the 14 basic ADL/IADL items in terms of performance by

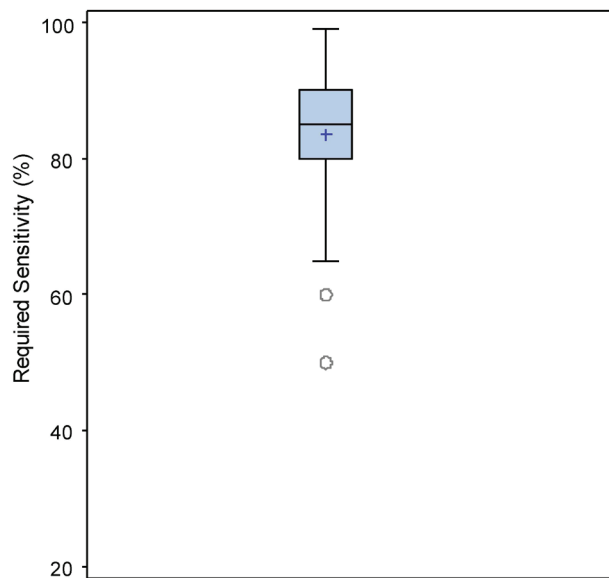


FIGURE 3. Box plot showing distribution of physician responses on the required sensitivity

elderly patients who were completely independent prior to a minor injury and who have no support at home, as well as how often the physicians assess elderly patients for such items, are presented in Figure 1. The results show that most physicians deem that most of the items are important to functional decline and more than 88.8% routinely ask patients about all of the 14 basic ADL/IADL items. The data showed that the majority assessed patients for all tasks even when some tasks were thought to be less important.

### DISCUSSION

Given an increasing geriatric population and concomitant burden on emergency departments, a clinically useful tool would allow identification of elderly patients at high risk of functional decline following a minor injury. A number of screening tools such as the Hospital Admission Risk Profile (HARP), Identification Of Seniors At Risk (ISAR), Triage Risk Screening Tool (TRST), and Score Hospitalier d'Evaluation du Risque de Perte d'Autonomie (SHERPA) exist to screen for functional decline, but they target frailer individuals at imminent risk of hospitalization, institutionalization, and death and are not designed for use with independent elderly patients discharged from the emergency department (ED) after a minor injury.<sup>(1-3,18)</sup> This study was conducted to determine outcome measures (i.e., to define what is significant decline in function and the required sensitivity needed) for a new clinical decision tool to identify elderly patients (at the time of the visit for minor trauma) at high risk of functional decline six months after sustaining a minor trauma. (Note: This study was not designed to create the tool itself.) Future studies will assess how to optimally prevent such a decline in function.

## Point Drop and Sensitivity

Results of this survey helped us inform the development of any clinical decision tool to identify elderly patients at high risk of functional decline at six months following a minor injury. The results showed that 90% of physicians would consider a drop in function of at least 2 points on the 28-point OARS ADL Scale as clinically significant when considering all 14 basic ADL/IADL items regardless of the patient having extensive support at home or not. When only the 7 basic ADL items are involved, 90% of physicians would consider a drop in function of at least 1 point as clinically significant regardless of the patient having extensive support at home or not. A tool to detect patients at risk of a functional decline at six months post injury would require a sensitivity of 90% to meet or exceed requirements for 90% of geriatricians. We opted to consider the 90th percentile more important than the mean or the median because we want a solid majority of physicians to be satisfied with the minimal point drop and the sensitivity.

Since a high proportion believe that most of the ADL items are important in terms of functional decline and assess for such items, it is likely that the physicians considered such items in the calculation of a clinically significant point drop. Such calculations that are based on high importance and assessment of the ADL items have resulted in a low clinically significant point drop. This information demonstrates that when creating a clinical decision rule it is important to distinguish between different patients with different injury severity.

Measuring the basic ADL separately helped us to identify the higher weight of the basic ADL over the IADL items. In other words, a smaller clinically significant point drop in the basic ADL compared to the combined basic ADL/IADL items indicates the importance of the basic ADL over the IADL items in general despite both being relevant to functional decline. This implies that one needs to be cautious when using the overall OARS ADL Scale because the basic ADL items and IADL items are not weighted equally. These findings need to be considered for the outcome measure of any clinical decision tool for identifying elderly patients at high risk of functional decline after a minor injury.

Although our results indicated that 90% of geriatricians require a clinical decision rule with a sensitivity of up to 90% before they would consider using it, the results might indicate physicians' previous habits of using highly sensitive tools and as such prompt them to ask for such high sensitivities. Despite the fact that the most commonly used tool (ISAR) has a sensitivity of 81%,<sup>(8,11)</sup> up to 75% of physicians in our survey indicated that they would require a more sensitive tool than 81%. In our study, only up to 25% of the physicians indicated that they would accept a clinical decision rule with a sensitivity of up to 80%. If indeed the majority of the physicians require a clinical decision rule with a sensitivity of up to 90%, such a rule might be very welcomed by physicians and a major step to having the physicians start using it.

## Assessment and Relevance of Activities of Daily Living to Functional Decline

A high proportion of geriatricians reported that most of the ADL items are important in terms of functional decline and they assess for most of the items. The key informant interviews we had with the physicians revealed that they were aware of different kinds of ADL and that they would assess for these different activities as needed. The key informant interviews also showed that geriatricians use standard assessment tools, as confirmed by the results showing that geriatricians assessed for some ADL activities even when they thought the tasks were not important to functional decline. The high proportion of physicians assessing for most of the ADL items might also be a result of multiple follow-up visits that provide the geriatricians more opportunities to assess for any remaining ADL items.

## Respondents

We achieved a satisfactory overall response rate of 70.5% which was above expectations. Our overall response rate exceeded the mean response rates of 54%<sup>(9,25)</sup> and 61%<sup>(25)</sup> reported by two systematic reviews of physician postal surveys. Such a high response rate from physicians is an indication of the relevance of this study. It could also be a result of a rigorous methodological approach we took to help obtain higher response rates. The key informant interviews, the cognitive interviews, the pilot testing of the surveys, as well as the short and concise questionnaire with incentives to half of the physicians and a special contact, aided greatly in obtaining such a high response rate with very few missing data. Although non-response bias is unlikely with high response rates such as ours, we still investigated for non-response bias using the region and language of the questionnaire. Although there could still be a possibility of non-response bias, our high response rate and tests for non-response bias imply valid and accurate results.

## Study Limitations

This study has a few limitations. The sample of geriatricians selected was based on what was available in the Canadian Medical Directory as of August 23, 2011. We found a few physicians that had retired or moved who were still in the directory. Another potential limitation is the possibility of not having all practising physicians included in the directory, which could lead to a possibly biased sample. However, these limitations are minimal as the Canadian Medical Directory claims an accuracy of 97% or better.<sup>(23)</sup> There is also a possibility of misinterpretation of the survey questions on the importance of the basic ADL/IADL items with respect to functional decline. There is a possibility that the physicians assumed different injuries when providing their opinions on the point drops—some injuries, such as finger injuries, would have different implications than an injury to the leg.

Functional decline can be measured in different ways with various instruments including the Barthel Index,(26) Functional Independence Measure,(27) Katz ADL,(28) Lawton IADL Scales,(29) Functional Autonomy Measurement System (or Système de Mesure de l'Autonomie Fonctionnelle [SMAF]),(30) Functional Status Questionnaire,(31) and the Older Americans Resources and Services (OARS) ADL Scale.(8) A potential limitation of this study is that we used the OARS ADL Scale which attributes an equal weight to each ADL and IADL, instead of some of the other scales with weights given to different ADL item. However, since the OARS ADL Scale has been validated in the ED and is anticipated to be used in the ED, we decided to use such a tool.

### Conclusion

Our results indicate that 90% of geriatricians consider a drop in function of at least 2 points in the basic ADL/IADL as clinically significant. Our results also indicate that a tool with a sensitivity of 90% to detect patients at risk of functional decline six months post-injury would meet or exceed the sensitivity required by most geriatricians. The majority of the geriatricians indicated that only 1 point drop is required to imply functional decline when only the 7 basic ADL items are considered. Although there was some disagreement among physicians on a clinically significant point drop when the elderly patients have support at home, the majority were satisfied with a lower point drop that is the same as the point drop used to define functional decline when the elderly patient did not have support at home. These results identify a clear, clinically important outcome for any clinical decision tool to identify elderly patients at high risk of functional decline 6 months after sustaining a minor injury. This study clearly defines what is considered clinically significant functional decline following a "minor injury."

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### CONFLICT OF INTEREST DISCLOSURES

The authors have no conflicts to declare.

### REFERENCES

1. Hebert R. Functional decline in old age. *CMAJ*. 1997;157(8):1037–45.
2. Hoogerduijn JG, Schuurmans MJ, Duijnste MS, *et al*. A systematic review of predictors and screening instruments to identify older hospitalized patients at risk for functional decline. *J Clin Nurs*. 2007;16(1):46–57.
3. Hastings SN, Heflin MT. A systematic review of interventions to improve outcomes for elders discharged from the emergency department. *Acad Emerg Med*. 2005;12(10):978–86.
4. Lee V, Ross B, Tracy B. Functional assessment of older adults in an emergency department. *Can J Occup Ther*. 2001;68(2):121–29.
5. Dillman DA. Mail and Internet surveys: the Tailored Design Method. 2nd edition. Hoboken, NJ: Wiley & Sons; 2007.
6. Sutton M, Grimmer-Somers K, Jeffries L. Screening tools to identify hospitalised elderly patients at risk of functional decline: a systematic review. *Int J Clin Pract*. 2008;62(12):1900–09.
7. Inouye SK, Bogardus ST, Jr., Baker DI, *et al*. The Hospital Elder Life Program: a model of care to prevent cognitive and functional decline in older hospitalized patients. Hospital Elder Life Program. *J Am Geriatr Soc*. 2000;48(12):1697–1706.
8. Fillenbaum G. Multidimensional functional assessment of older adults: The Duke Older Americans Resources and Services procedures. Hillsdale: Erlbaum; 1988.
9. McCusker J, Bellavance F, Cardin S, *et al*. Validity of an activities of daily living questionnaire among older patients in the emergency department. *J Clin Epidemiol*. 1999;52(11):1023–30.
10. Wilber ST, Blanda M, Gerson LW. Does functional decline prompt emergency department visits and admission in older patients? *Acad Emerg Med*. 2006;13(6):680–82.
11. Breithaupt K, McDowell I. Considerations for measuring functioning of the elderly: IRM dimensionality and scaling analysis. *Health Services and Outcomes Research Methodology*. 2001;2(1):37–50.
12. Moritz DJ, Kasl SV, Berkman LF. Cognitive functioning and the incidence of limitations in activities of daily living in an elderly community sample. *Am J Epidemiol*. 1995;141(1):41–49.
13. Asakawa T, Koyano W, Ando T, *et al*. Effects of functional decline on quality of life among the Japanese elderly. *Int J Aging Hum Dev*. 2000;50(4):319–28.
14. Wilber ST, Blanda M, Gerson LW, *et al*. Short-term functional decline and service use in older emergency department patients with blunt injuries. *Acad Emerg Med*. 2010;17(7):679–86.
15. Salvi F, Morichi V, Grilli A, *et al*. The elderly in the emergency department: a critical review of problems and solutions. *Intern Emerg Med*. 2007;2(4):292–301.
16. Rowland K, Maitra AK, Richardson DA, *et al*. The discharge of elderly patients from an accident and emergency department: functional changes and risk of readmission. *Age Ageing*. 1990;19(6):415–18.
17. Caplan GA, Brown A, Croker WD, *et al*. Risk of admission within 4 weeks of discharge of elderly patients from the emergency department—the DEED study. Discharge of elderly from emergency department. *Age Ageing*. 1998;27(6):697–702.

18. Aminzadeh F, Dalziel WB. Older adults in the emergency department: a systematic review of patterns of use, adverse outcomes, and effectiveness of interventions. *Ann Emerg Med.* 2002;39(3):238–47.
19. Fried LP, Tangen CM, Walston J, *et al.* Frailty in older adults: evidence for a phenotype. *J Gerontol A Biol Sci Med Sci.* 2001;56(3):M146–56.
20. Satish S, Winograd CH, Chavez C, *et al.* Geriatric targeting criteria as predictors of survival and health care utilization. *J Am Geriatr Soc.* 1996;44(8):914–21.
21. Rodriguez-Molinero A, Lopez-Dieguez M, Tabuenca AI, *et al.* Functional assessment of older patients in the emergency department: comparison between standard instruments, medical records and physicians' perceptions. *BMC Geriatr.* 2006;6:13.
22. Rucker G, Cook D, Sjøkvist P, *et al.* Clinician predictions of intensive care unit mortality. *Crit Care Med.* 2004;32(5):1149–54.
23. Scott's Directories. Canadian Medical Directory. Toronto, ON: Scott's Directories; 2013.
24. Abdulaziz K, Brehaut J, Taljaard M, *et al.* National survey of physicians to determine the effect of unconditional incentives on response rates of physician postal surveys. *BMJ Open.* 2015;5(2):e007166.
25. McCusker J, Bellavance F, Cardin S, *et al.* Detection of older people at increased risk of adverse health outcomes after an emergency visit: the ISAR screening tool. *J Am Geriatr Soc.* 1999;47(10):1229–37.
26. Mahoney FI, Barthel DW. Functional evaluation: the Barthel Index. *Md State Med J.* 1965;14:61–65.
27. Granger CV, Cotter AC, Hamilton BB, *et al.* Functional assessment scales: a study of persons with multiple sclerosis. *Arch Phys Med Rehabil.* 1990;71(11):870–75.
28. Katz S, Ford AB, Moskowitz RW, *et al.* Studies of illness in the aged. The index of ADL: a standardized measure of biological and psychosocial function. *JAMA.* 1963;185:914–19.
29. Lawton MP, Brody EM. Assessment of older people: self-maintaining and instrumental activities of daily living. *Gerontologist.* 1969;9(3):179–86.
30. Hebert R, Carrier R, Bilodeau A. The Functional Autonomy Measurement System (SMAF): description and validation of an instrument for the measurement of handicaps. *Age Ageing.* 1988;17(5):293–302.
31. Jette AM, Davies AR, Cleary PD, *et al.* The Functional Status Questionnaire: reliability and validity when used in primary care. *J Gen Intern Med.* 1986;1(3):143–49.

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