Author's response to reviews

Title: Treating frailty. A practical guide.

Authors:

Nicola Fairhall (nfairhall@georgeinstitute.org.au)
Colleen Langron (clangron@nsccahs.health.nsw.gov.au)
Catherine Sherrington (csherrington@georgeinstitute.org.au)
Stephen R Lord (s.lord@neura.edu.au)
Susan E Kurrle (skurrle@nsccahs.health.nsw.gov.au)
Keri Lockwood (kalockwood@nsccahs.health.nsw.gov.au)
Noeline Monaghan (noeline.monaghan@sydney.edu.au)
Christina Aggar (christina.aggar@sydney.edu.au)
Liz Gill (lgil9930@uni.sydney.edu.au)
Ian D Cameron (ian.cameron@sydney.edu.au)

Version: 2 Date: 22 April 2011

Author's response to reviews: see over
21 May 2011

Mick Aulakh
The BioMed Central Editorial Team

Dear Mick Aulakh

Thank you for the review of the manuscript ‘Treating frailty. A practical guide’.

We have addressed each of the reviewer’s comments below. The revised version of the manuscript has been uploaded.

Please do not hesitate to contact me for further information or clarification.

Yours sincerely,

Nicola Fairhall, BPhty, MHSci (Neurological Physiotherapy)
PhD candidate
Musculoskeletal Division.

Reviewer: Kenneth Rockwood


The paragraph has been amended to more accurately interpret the literature regarding case co-ordination.

Literature suggests multifaceted interventions including case co-ordination improve function in vulnerable older people [33, 34], however the effect of case management alone has focussed on health care utilisation and is less conclusive [35, 36].

There is good evidence that the allocation of a case coordinator to provide long-term advocacy and coordination of healthcare services to these high-risk individuals is beneficial (32). Case coordinators have been shown to effectively reduce institutionalisation in frail older people (32)....

2. Reference number 16 (Rockwood et al. Lancet 1999) makes no mention of a frailty index. Instead, it is another rules-based operational definition of frailty (not unlike the phenotype, defining frailty as one of x, two of y, etc.). Instead, the frailty index was introduced in

The University of Sydney

The reference has been amended.

Of relevance to the authors is the notion of a frailty index based on a comprehensive geriatric assessment, introduced in a JAGS paper in 2004 (Jones et al. 52:1929-1935) and most recently elaborated in a review paper in Clin Ger Med 2011; 27:17-26. While the knock against the frailty index is said to be that it requires too much information to complete it, a frailty index can be operationalized for virtually any clinically relevant assessment, such as the one proposed in your data collection sheet in Additional File One. Proponents also note that the clinical consequences of a frailty assessment are non-trivial; for that reason, they argue, including relevant, non-arbitrary information in calculating the degree of frailty should trump quick, but incomplete assessments.

Text was added to address this point:

The simple assessment form, based upon comprehensive geriatric assessment and capturing frailty using the Frailty Phenotype [1], could be used (provided in Additional file 1: Frailty assessment form). Completed during routine comprehensive geriatric assessment, this form may also be used to count deficits in health, to formulate a frailty index using the standardised procedure of Searle and colleagues [22], as has been done with previous assessment tools [23, 24].

3. I wonder if the authors could discuss more whether frailty is in fact reversible? In an academic review, it is not wrong to work through some semantics. From my reading, frailty is non-controversially understood as a vulnerability state (briefly, the variable vulnerability of people of the same chronological age) which can be operationalized as a syndrome, although the equation with a syndrome is disputed (e.g. Whitson et al. J Gerontol Med Sci Biol Sci 2007; 62:728-730). The variable vulnerability state indubitably can be mitigated, but whether it can be reversed seems more controversial, and without empirical foundation as near as I can tell. Still, if reversibility can be demonstrated, I’d be glad to see it – otherwise, mitigation seems to me a fairer reading.

The text was amended in two paragraphs:

The syndrome of frailty is potentially reversible and there is an urgent need for effective interventions to reduce frailty.

...clinical improvement from the frail state is possible [11, 12] and there is an urgent need for effective interventions to mitigate frailty.

We propose that intervention be based upon six premises:

1. Frailty can mitigated, reversible, treatable condition.

4. It would be impossible for a geriatrician to be against teams (and I am not against them) but I would urge some caution. Not all team-based trials have worked, and while some have, on the whole we do not have sufficient information which aspects of teams work best and which aspects do not help. In my experience, however, where teams fall down is where each discipline works more or less on its own; i.e. where inter-professional practice has not
developed to be collaborative, so that each discipline acts in relative isolation. A cautionary note about the need not to assure that valid team-based trials are generalisable and that specific attention needs to be paid to factors which promote inter-professional collaboration would be worthwhile. This problem is sometimes referred to as “needing to look inside the black box” of teams.

The following text was added:

The optimal structure and practice of effective teams are not well established and results of team-based trials must be generalised to the clinical setting with caution. Known characteristics of effective teams should be incorporated in the team structure, for example there is consensus that inter-professional collaboration should be promoted [33], through policies and systems that facilitate communication, common goals and a shared decision-making process.

Reviewer: Stuart G Parker

Minor Essential Revisions

1. Careful checking of the content of the cited references against the claims made for them in the text.

a) On page 3 the authors state that “the syndrome of frailty is potentially reversible [11,12].”, citing as evidence a review article of the clinical care of frail older people [11] and some original evidence [12], which showed that transitions from states of frailty to the non frail state are a rare occurrence. It might be better to state here that the frailty state is certainly one from in which clinical improvement is possible, rather than to imply that reversal of the state (ie transition to the non-frail state) is likely.

The text was amended in two paragraphs:

The syndrome of frailty is potentially reversible and there is an urgent need for effective interventions to reduce frailty.

...clinical improvement from the frail state is possible [11, 12] and there is an urgent need for effective interventions to mitigate frailty.

We propose that intervention be based upon six premises:

2. Frailty can be mitigated, reversible, treatable condition.

b) On page 8 the authors state that “there is good evidence that the allocation of a case co-ordinator to provide long term advocacy and co-ordination of healthcare services to these high risk individuals is beneficial [32].”, however reference 32 is a randomised controlled trial of a complex intervention of integrated services of which case co-ordination was only one element.

The paragraph has been amended to more accurately interpret the literature regarding case co-ordination.
Literature suggests multifaceted interventions including case co-ordination improve function in vulnerable older people [33, 34], however the effect of case management alone has focussed on health care utilisation and is less conclusive [35, 36].

There is good evidence that the allocation of a case coordinator to provide long-term advocacy and coordination of healthcare services to these high-risk individuals is beneficial (32). Case coordinators have been shown to effectively reduce institutionalisation in frail older people (32).

Major Compulsory Revisions
2. The document needs to be restructured so that there is some description of the method through which the evidence and clinical recommendations emerged. If this is done a section describing the “findings” – pointing the reader to the figure and tables containing the main outputs should be constructed. There would be no harm in heading this section separately as “results” or “findings” or “recommendations” if preferred. The content of the discussion would then be placed more firmly in a methodological context, and should include also some discussion of the strengths (clinical orientation, concrete recommendations) and weaknesses (bias, generalisability etc) of the approaches used.

(Reviewer’s report: The main weakness of the paper is that it is not presented as either a literature review (with review methodology and results) or as a consensus statement of relevant professional opinion (with appropriate methodology and results).)

The current format of the paper is based on the editorial team's invitation to submit an Opinion manuscript. An email from Dr. Rosy Hosking, The BioMed Central Editorial Team, dated 21 January 2011 reads:

“Should you wish to present a short Opinion manuscript, omitting reference to the unpublished interventions of the forthcoming RCT, and instead providing a synthesis of the currently available evidence concerning interventions to decrease frailty alongside your review of methods to diagnose frailty, then we could consider how this article would benefit the community, ensuring novelty of the manuscript compared to other recent publications (for example: Clin Geriatr Med. 2010 May;26(2):275-86.) This would allow you to highlight the need for a trial of interventions”.

Upon the recommendation of Dr. Hosking, the paper is formatted as an Opinion manuscript. We anticipate that if accepted for online publication, the manuscript will be clearly categorised as an Opinion, which will clarify our stance to readers.

Within the confines of the structure of an Opinion manuscript we have described the method in the introduction section. In order to address the reviewer’s concern that “The document needs to be restructured so that there is some description of the method through which the evidence and clinical recommendations emerged”, the have elaborated on and clarified the method as follows:

“As in other fields, clinicians should aim to integrate the highest levels of evidence with clinical experience and patient values as suggested by Sackett and others [13, 14]. A literature search identified no clinical trials that have investigated whether intervention can alter or reverse frailty. In the absence of such evidence, clinicians can be guided by clinical trial evidence answering related questions and we also draw on our collective experience in aged care and rehabilitation.
This paper aims to provide a synthesis of the current available evidence concerning interventions to decrease frailty and provide practical information on identification of frailty in clinical practice and provision of interventions to reduce frailty in the clinical setting.”

Reviewer: Calvin Hirsch

3. Principles of intervention. P 5ff. In developing their proposed interventions, the authors appear to deviate from frailty as a clear and distinct construct and focus instead on principles of good geriatric medicine. In this and the sections that follow, frailty as a term appears to be used in the old, generic, descriptive sense, rather than as an entity defined by strict criteria. This dilutes the stated purpose of the manuscript.

The lack of consensus about the definition of frailty makes it difficult to use consistent language. As the Frailty Phenotype and numerous frailty indexes are effective in predicting adverse health outcomes in older people, we did not wish to direct the use of a particular construct for frailty. This appears consistent with current literature (e.g. van Kan et al, 2011). The following text was added to a) indicate we refer to people who meet criteria for frailty, and b) relate intervention to the components of frailty identified in the nominated criteria.

The lack of consensus regarding the definition and components of frailty will influence clinicians’ approach to intervention. For example, the Frailty Phenotype [1] identifies five potential deficits that may be targeted with treatment while an extensive frailty index will yield a more comprehensive picture of the individual, with the potential for broader intervention [23]. We propose clinicians should specifically identify and target the dimensions of frailty identified in the Frailty Phenotype but also incorporate Geriatric Evaluation and Management (GEM), to ensure the complex picture present in the frail older person is comprehensively addressed, as discussed by Rockwood and Mitnitski [23].

In addition, wording was changed throughout the manuscript to indicate we describe older people who meet criteria for frailty.

In addition, we acknowledge the reviewer’s comment that the principles of geriatric medicine are foremost in the paper and we agree that the recommended intervention is not always specific to frailty. We believe however that the principles of geriatric medicine provide an appropriate construct in which to consider frailty and a useful construct for guiding treatment of the frail older person.

It is all well and good to recommend GEM or CGA as the foundation of care, but few practitioners have the luxury of resource-intensive interdisciplinary teams, rendering this approach a bit pie-in-the-sky.

As clinicians working within an aged care service model, we argue that the intervention described is potentially feasible in this context. We acknowledge that functioning of interdisciplinary teams is often sub-optimal in the clinical setting and have added text to highlight that interdisciplinary team-based trials should be generalised to the clinical setting only with caution.
The optimal structure and practice of effective teams are not well established and results of team-based trials must be generalised to the clinical setting with caution. Known characteristics of effective teams should be incorporated in the team structure, for example there is consensus that inter-professional collaboration should be promoted [33], through policies and systems that facilitate communication, common goals and a shared decision making process.

“Interventions to reduce frailty” as presented seem dauntingly extensive and untargeted, and do not provide a useful, user-friendly template for community physicians. Rather than an “assess everything for everyone” approach, it perhaps would be more useful to offer guidelines focusing on primary, secondary, and tertiary prevention. For example, gait speed may be a good single-item screen for frailty, and primary prevention might be an exercise program or physical therapy for anyone whose gait speed drops to  ≤ 0.6 m/s. The authors refer to a useful assessment instrument that incorporates Fried et al.’s frailty phenotype (Additional File 1), but no further mention of this tool is made.

While we agree the suggested approach would both useful and appropriate for the community physician, we don’t feel we have the evidence to base it upon. Instead we are suggesting an inter-disciplinary approach to assessment and management.

We have endeavoured to make “interventions to reduce frailty” more user-friendly by addressing the reviewers comments. We agree it would be a good idea to use a simple single-item assessment, particularly in screening at a population level. Gait speed is clearly predictive of future vulnerability, however currently there is insufficient evidence to generalise the use of a definitive threshold for gait speed (or grip strength) as a single-item screen. There are multiple viable options (e.g. using cut-off gait speed of the systematic review of van Kan (2009) (0.8m/sec), the Frailty Phenotype (0.65m/sec) or the simple measure of 1m/sec). We addressed the reviewer’s comments about screening and the assessment instrument as follows:

In the busy clinical setting, a single item assessment tool may indicate whether more comprehensive assessment is indicated in order to make a diagnosis of frailty. Reduced gait speed is clearly predictive of future vulnerability (Guralnik 2000, van Kan 2009) and although cut-off speeds are contentious, 0.8m/sec was proposed as the result of a recent systematic review (van Kan 2009) and seems a useful starting point for further validation studies. In the event that potential for frailty is identified, we suggest referral for multi-disciplinary assessment where resources are available. The simple assessment form, based upon comprehensive geriatric assessment and capturing frailty using the Frailty Phenotype [1], could be used (provided in Additional file 1: Frailty assessment form). Completed during routine comprehensive geriatric assessment, this form may also be used to count deficits in health, to formulate a frailty index using the standardised procedure of Searle and colleagues [22], as has been done with previous assessment tools [23, 24].

The authors need to be explicit about what definition of frailty they use, and then use this definition as the basis for interventions.

- If a clinician uses this tool, and finds that a patient has 3 of 5 frailty criteria, what then? How should this information used?
- A figure containing representative flow diagrams could be helpful to readers, or at the very least be helpful to the authors in developing practical recommendations.
Step 1 would logically be to confirm with additional screening the conditions recognized in the screen, and to create a differential diagnosis for each.

Step 2 is to perform additional tests, if needed.

Step 3 is the development of feasible interventions for the patient, given existing comorbidities and resources. Etc.

We are reluctant to choose a single definition for frailty because current reviews do not identify a consensus on which of the two primary definitions is superior (e.g. van Kan et al, 2011) and both the Frailty Phenotype and Frailty Index are effective in predicting adverse health outcomes in older people.

We have amended the paper to be more explicit about the relationship between the Frailty Phenotype criteria and the intervention, as the reviewer suggested:

We propose clinicians should specifically identify and target the dimensions of frailty identified in the Frailty Phenotype, as highlighted in Additional file 2 (Additional recommendations for treatment of the frail older person), but also incorporate GEM to ensure the complex picture present in the frail older person is comprehensively addressed, as discussed by Rockwood and Mitnitski [23].

Frailty Phenotype criteria are now highlighted in Additional File 2.

While the three steps recommended by the reviewer are very appropriate, they are beyond the scope of this paper, which is targeting aged healthcare teams.

4. The interventions in Table 1 represent good clinical care that is not unique to frailty, and many of the recommendations in the table in Additional File 2 refer the reader to exhaustive disease-specific guidelines that are neither user-friendly nor directed at the older patient.

We acknowledge the point raised by the reviewer. We used a systematic approach afforded by the ICF to broadly address the issues that may be encountered by an inter-disciplinary team.

The remainder of the manuscript addresses ancillary but important issues like adherence, case management, care coordination, etc. None of this is unique to frailty, but nearly all entails a level of interdisciplinary care beyond the reach of most clinicians and academic medical centers.

As clinicians working within an aged care service model, we argue that the intervention described is potentially feasible in this context. Although not unique to frailty, in our opinion the issues of adherence, case management etc. are too important to omit from a discussion of intervention for frailty, and have highlighted the need to address issues such as interdisciplinary collaboration via appropriate systems, as described above.

MINOR ESSENTIAL REVISIONS

5. Additional File 2. The authors do not give a reason for selecting the medical conditions in the table. Some clinicians might be insulted to be referred to the NICE guidelines to learn how to treat them, and wonder what the relevance is in an article on frailty.
Although frailty and co-morbidity are distinct, there is notable overlap between them (Fried 2004). These conditions were chosen to highlight common co-morbidities that could increase the impact of frailty and that need to be managed appropriately.

*I was surprised that under “Vulnerability to Health Outcomes” the authors mentioned medication review without referring to the Beers Criteria of medications to avoid or minimize.*

The reference for Flic (2003) was added.