Yvonne M Drewes, Julia M Koenen, Wouter de Ruijter, DJ Annemarie van Dijk-van Dijk, Gerda M van der Weele, Barend JC Middelkoop, Ria Reis, Willem JJ Assendelft and Jacobijn Gussekloo

GPs' perspectives on preventive care for older people:

a focus group study

Abstract

Background
Preventive care traditionally aims to prevent diseases or injuries. For older people, different aims of prevention, such as maintenance of independence and wellbeing, are increasingly important.

Aim
To explore GPs' perspectives on preventive care for older people.

Design and setting
Qualitative study comprising six focus groups with GPs in the Netherlands.

Method
The focus-group discussions with 37 GPs were analysed using the framework analysis method.

Results
Whether or not to implement preventive care for older people depends on the patient's individual level of vitality, as perceived by the GP. For older people with a high level of vitality, GPs confine their role to standardised disease-oriented prevention on a patient's request; when the vitality levels in older people fall, the scope of preventive care shifts from prevention of disease to prevention of functional decline. For older, vulnerable people, GPs expect most benefit from a proactive, individualised approach, enabling them to live as independently as possible. Based on these perspectives, a conceptual model for preventive care was developed, which describes GPs' different perspectives toward older people who are vulnerable and those with high levels of vitality. It focuses on five main dimensions: aim of care (prevention of disease versus prevention of functional decline), concept of care (disease model versus functional model), initiator (older persons themselves versus GP), target groups (people with requests versus specified risk groups), and content of preventive care (mainly cardiovascular risk management versus functional decline).

Conclusion
GPs' perspectives on preventive care are determined by their perception of the level of vitality of their older patients. Preventive care for older people with high levels of vitality may consist of a standardised disease-oriented approach; those who are vulnerable will need an individualised approach to prevent functional decline.

Keywords
aged; focus groups; general practice; preventive health services.

INTRODUCTION

Preventive care traditionally refers to measures taken to prevent disease or injury and not to goals that are less well defined, such as maintenance of independence or wellbeing. However, for older people whose general health status is declining, values such as maintenance of independence in daily life and wellbeing become increasingly important.[1]

The possibility of preventive care contributing to independence and functioning in the daily life of older people is relatively new in current health policy.[2–4] Research on routine comprehensive screening for unmet health needs in the older population has revealed little or no benefits to the quality of life or health outcomes from such population screening;[5] despite this, the belief that screening could prevent functional impairment in older people has an enduring appeal to researchers, clinicians, and older people.[6,7]

In The Netherlands, preventive care for older people is generally delivered by the GP. Aside from national prevention programmes (for example, breast-cancer screening), preventive care is part of the regular primary care that is outlined in the Dutch College of General Practitioners' practice guidelines.[8] These guidelines are disease oriented and contain measures to prevent or cure diseases; they are not specifically aimed at less well-defined goals such as the maintenance of independence or wellbeing. GPs are allowed to deviate from the guidelines, depending on the needs of the individual patient. In The Netherlands, care delivered by GPs is accessible for everyone: it is part of the obligatory basic healthcare insurance and national prevention programmes are collectively financed.

Dutch GPs differ with regard to the type and intensity of preventive care delivered to their individual patients.[9,10] However, GPs' perceptions regarding preventive care for older people, and their individual underlying motivations for these variations, are largely unknown. Moreover, it is unclear whether GPs deliver preventive care in the traditional way — mainly to prevent diseases and injuries — or to maintain independence and wellbeing. This qualitative study explores GPs' perspectives on preventive care to elucidate their ideas about the aim, organisation, and content of such care for older people. The exploration of this facet of care delivery will show the direction in which preventive care for older people, according to GPs, needs to be developed in the future.

METHOD

In 2007, six focus-group discussions with GPs were conducted. To elicit GPs' own perspectives on preventive care for older people, this qualitative method was chosen to allow participants to articulate and discuss

YM Drewes, LLM MD, researcher; **JM Koenen**, student; **W de Ruijter**, MD PhD, researcher and GP; **DJA van Dijk-van Dijk**, MSc, researcher; **GM van der Weele**, MD PhD, researcher and GP; **BJC Middelkoop**, MD PhD, professor in public health; **R Reis**, PhD, professor in medical anthropology; **WJJ Assendelft**, MD PhD, professor in general practice; **J Gussekloo**, MD PhD, professor in general practice, Department of Public Health and Primary Care, Leiden University Medical Center, Leiden, The Netherlands.

Address for correspondence
Yvonne M Drewes, Leiden University Medical Center, Department of Public Health and Primary Care (Postzone V0-P), PO Box 9600, 2300 RC Leiden, The Netherlands.

E-mail: y.m.drewes@lumc.nl

Submitted: 15 January 2012; **Editor's response:** 26 March 2012; **final acceptance:** 1 May 2012.

This is the full-length article (published online 29 Oct 2012) of an abridged version published in print. Cite this article as: **Br J Gen Pract 2012; DOI: 10.3399/bjgp12X658296**

How this fits in

Preventive care usually refers to measures that are taken to prevent diseases and injuries. In this study, GPs described the need for a paradigm shift in preventive care for older people. In persons with high levels of vitality, they found it important to focus on preventing or postponing diseases as in younger age groups, preferably with standardised programmes. However, in vulnerable older people this study found that preventive care needs a more individualised approach that takes the preferences of the older person into account and facilitates their most important needs.

their own reasoning and strategies. Focus-group discussions were carried out instead of individual interviews as this method allows for interaction between the participating GPs; in-depth, emerging, complex concepts (for example, vitality) were explored and there was an opportunity for individuals to be probed for additional information.

Participants

Participants for the focus-group discussions were invited to attend via several channels. A general mailing list of GPs from the northern part of the South Holland province was used, with individuals being invited to attend by a letter that contained four dates. The GPs were divided into four groups (between four and eight GPs per group) according to their preferred date for the discussion. Besides this, to ensure the inclusion of GPs specialised in the care of older people and GPs with scientific expertise, a purposive sampling was undertaken: GPs with special interest from the postgraduate specialisation in elderly care who had already worked as a GP for many years were recruited (n = 7). Moreover, to ensure inclusion of GPs with scientific expertise, GPs (n = 6) from the Department of Public Health and Primary Care of Leiden University Medical Center were purposively sampled. To ensure that these specialist GPs would not dominate the discussions, they were separated from the other GPs and formed two extra focus groups.[11]

Interview guide and data collection

An interview guide to explore GPs' ideas about preventive care for older people was developed. The first questions asked participants to think broadly about their care for older people in general, their perceptions of aging, and the influence of geriatric care on primary care. Thereafter, the guide focused on the appropriateness of preventive health checks, as well as the aim, organisation, and content of preventive care for older people.

This interview guide was piloted in the first discussion group, after which only minor adjustments were made. As the guide remained largely the same, the data from the pilot group were included in the final analyses.[12]

Prior to the discussion, participants gave written consent and completed a brief questionnaire about their general practice and experience; they were assured that all comments would remain confidential. Each focus group was led by a researcher who was experienced in moderating such groups and assisted by another team member. Each session lasted approximately 90 minutes (range 80–130 minutes). The researchers made field notes and debriefed after each session. Audiotapes were transcribed and promptly reviewed in order to clarify any unclear comments and/or to link each comment to the relevant participant.

Coding and analysis

Following the framework analysis method,[13,14] each transcript was read multiple times. Using thematic content analysis with an open coding system, themes emerged and were placed in an analytical framework for axial coding; this was discussed by the researchers until consensus was reached. Two researchers coded the data independently to increase reliability. New codes were added when considered necessary. Atlas.ti 5.2 was used for the analysis. After coding, the data were sorted according to the themes. The final stage of the analysis examined the relationships between the codes; this resulted in a conceptual model of GPs' perspectives of preventive care for older people.

RESULTS

Thirty-seven GPs — 22 males and 15 females — participated in the focus-group discussions. Of these, 27 (73%) had worked in general practice for ≥10 years. Twelve GPs (32%) reported working in practices with an over-representation of patients aged ≥65 years.

The major theme in the focus-group discussions was that GPs' approaches to preventive care for older people depended on the level of vitality of the individual person, as perceived by the GP. Five subthemes were identified:

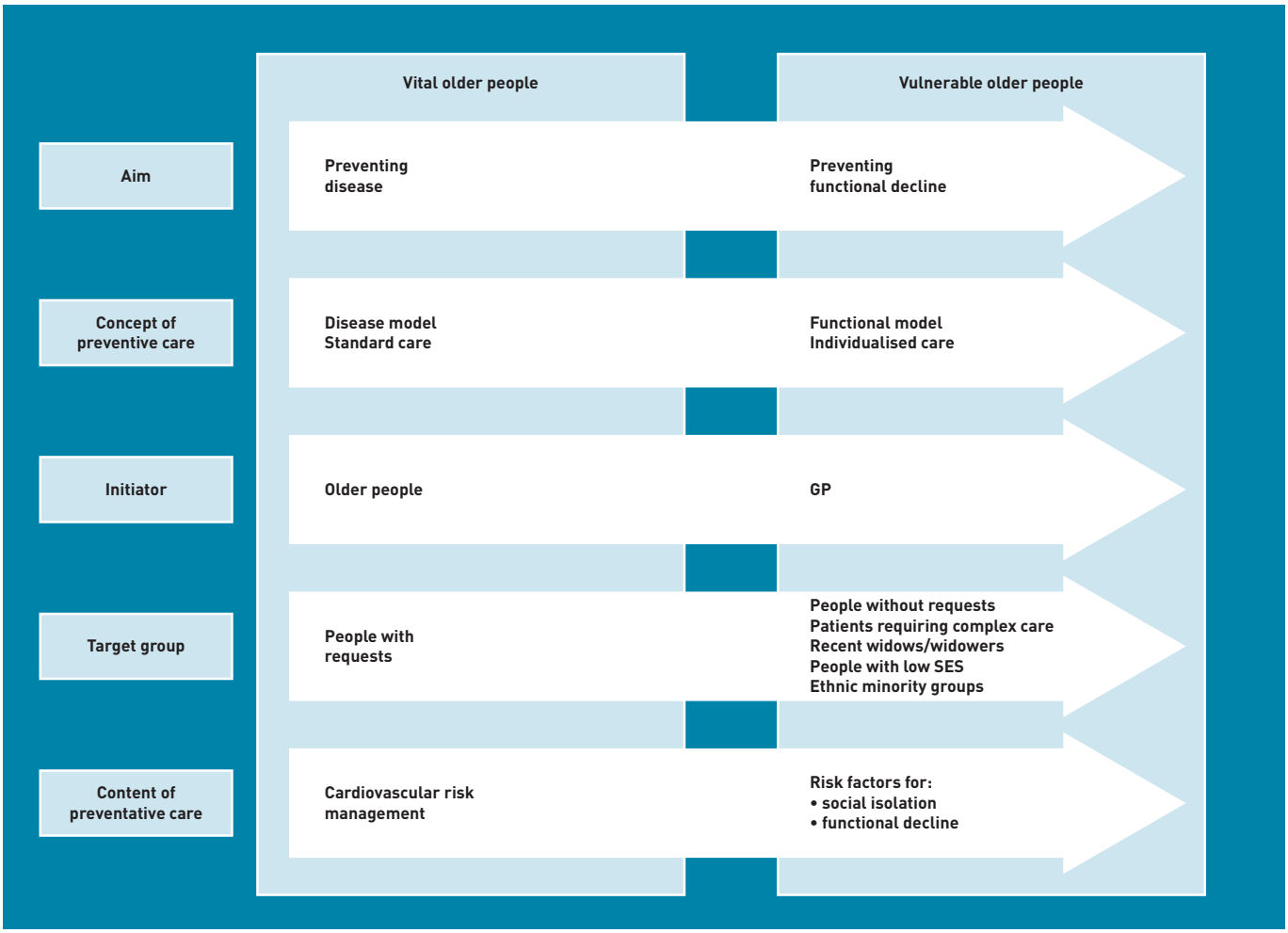

Figure 1. Conceptual model of preventative care for older people based on the present study, showing a shift in the perspective of GPs towards the vital and the vulnerable older populations.
SES = socioeconomic status

- aim of care;
- concept of care;
- initiator;
- target groups; and
- content of care.

The findings form the basis of this study's conceptual model for preventive care for older people (Figure 1), which comprises these five subthemes as dimensions. This model describes a shift in the perspective of GPs regarding older populations who have high levels of vitality or are vulnerable; when older people become more vulnerable, the scope of preventive care shifts within the five dimensions. Substantive differences in perspectives between the three types of GPs in the focus groups were not found, although, as expected, the GPs with special interest were more used to discussing and reflecting on their perspectives about preventive care for older people.

Level of vitality

During the discussions, the focus of preventive care for older patients appeared to depend not on age, but on the level of vitality of the individual person as perceived by the GP. GPs were primarily concerned about patients who they considered to be vulnerable and discussions mainly focused on the prevention of functional decline in this group. GPs differentiated between older people who are vulnerable and those with high vitality levels; biological age appeared to be more important than chronological age. Furthermore, GPs reported that their perception of old age also depended on their own age — the older they became, the higher were the age levels they used to classify someone as 'old'. In all discussions, the perceived level of vitality tended to influence the GP's policy:

'I don't like to focus on age limits. I've heard of the term "frailty" and think it's a good word to express vulnerability; I try to find out how vulnerable someone is and work within those limits.' (Female, focus group 3, general GP)

Although definitions of older people with

high levels of vitality and those who were vulnerable were not specifically discussed, there was no confusion among the groups about these two 'types' of older people, especially when they talked about the extremes as examples. All GPs appeared to have an internalised concept of 'vitality' and 'vulnerability'.

Aim of prevention

In the population with high levels of vitality, GPs aimed at preventing or postponing disease, especially cardiovascular disease. For those who were more vulnerable, they attempted to contribute to the patient's quality of life by preventing or postponing functional decline, thereby enabling these patients to remain living independently at home for as long as possible:

'... when I start talking about prevention, the first thing that crosses my mind is the prevention of breast cancer, of cervical cancer, or the prevention of ... something specific. At this stage of their life this type of thinking is useless ... What I'd like to see regarding prevention for the elderly is to maintain their standard of living, and all the things that are important to them, for as long as possible.' (Male, focus group 2, general GP)

Concept of preventive care

To achieve the various goals of prevention, GPs described the need for a paradigm shift in practice. In persons with high levels of vitality, they found it important to focus on preventing or postponing diseases (as in younger age groups), preferably with standardised programmes, such as those available for breast-cancer screening for persons aged ≤75 years and cardiovascular health checks. In older people who are vulnerable, however, they found that preventive care needed a more individualised approach that took the preferences of the older person into account and facilitated their most important needs:

'I should be helping people cope better with their simple daily tasks, like being able to write and cut up their own food — it's a different way of thinking. It's looking at their situation from another angle. At this stage I have to forget the idea that I'm the "curing doctor" who only acts in response to their complaints ...' (Male, focus group 3, general GP)

This change in attitude and focus of care for older people who are vulnerable was clearly described by a GP who specialised in geriatric care:

'In the last few years, an important learning point for me has been to get away from the "disease" model and move over to the "functional" model.' (Female, focus group 6, GP with special interest)

Initiator for prevention

In general, GPs tended to hesitate about giving preventive advice to older people. They doubted the usefulness of such advice, as the person had already reached a respectable age without it:

'The older you are, the more you have proven your point'. (Female, focus group 5, general GP)

This was particularly considered to be the case for those with a good quality of life; GPs preferred to play 'a waiting game' because they were afraid of 'patronising' their patients:

'I'd always like to have some excuse to get a process going. I do agree with prevention ... but there'll always be that association with the idea of "patronising" people and worrying about medicalisation.' (Female, focus group 1, GP with special interest)

One GP, whose patients participated in a study on the prevalence and incidence of risk factors for chronic diseases in older people, noted that some individuals could be motivated to change their lifestyle when, for example, abnormal laboratory tests were found. Usually, however, GPs assumed that people without a perceived need for help were not sufficiently motivated to adhere to preventive advice, especially that relating to lifestyle.

Some GPs described a more proactive role in their preventive care for the older people they considered to be more vulnerable. GPs wanted to become acquainted with this population and to try to anticipate crises. They were also aware that some older people had lost their autonomy and had become increasingly dependent on them; some felt a considerable amount of responsibility for this kind of patient:

'Once people are over the age of 90, you get the idea that you're probably the most important person in their life.' (Male, focus group 1, GP with special interest)

GPs behaved proactively by making home visits, and by developing a proactive attitude in their consultations:

'I mainly think of the extra task that one gets as "care manager" ... that you're the initiator of a "care process" in which you try to do as little as possible, but you have to initiate it to make sure that the elderly are able to live their lives as comfortably as possible.' (Male, focus group 1, GP with special interest)

Whereas some GPs did not make home visits (doubting its usefulness), most saw the benefit of these; such visits were seen as a way to monitor the home situation, such as checking the refrigerator or controlling medication use:

'I think it's a good thing that, once in a while, you visit people who live on their own ... it's partly just to keep an eye on them.' (Male, focus group 1, GP with special interest)

Target groups

For older people with high levels of vitality, GPs mainly targeted those who actively asked for preventive care. Apart from the national prevention programmes (for example, breast cancer screening and the influenza vaccination) and regular cardiovascular risk management, GPs tended to limit prevention for this population to 'prevention on request'. Some GPs said they were most worried about older people who did not consult them, especially those who were isolated and vulnerable. They actively approached this group to prevent crisis situations:

'I worry more about the people who don't come to see me than about those who do. Then I go along to see them and say: "I haven't seen you for a while. Are you OK?"' (Male, focus group 2, general GP)

The GPs also considered older people who were single or recently widowed to be vulnerable. Some noted mortality dates in their agenda and visited widows/widowers on appropriate days. Single older people were considered susceptible for social isolation:

'... but the most important criterion is whether or not they live alone. We tend to keep a special eye on these people.' (Male, focus group 3, general GP)

Other target groups were those with a low socioeconomic status and ethnic minority groups: these lacked health education more often and belonged to the vulnerable group because they were at high risk of developing health problems. This could be a result of it being difficult to give lifestyle advice due to language problems:

'Another group are the elderly immigrants with communication problems. So one is already satisfied if you're just able to arrange basic care for them, but once you start to explain what they could change to make things better for themselves, that's when the misunderstandings start. That makes things really difficult, so then you settle for less.' (Male, focus group 1, GP with special interest)

Alternatively, when some individuals become more vulnerable, their already disadvantaged social position worsens, leading to more problems such as isolation and multimorbidity:

'When I look at my own patients I see very many "lost" elderly persons ... they already have a disadvantaged position, and the older they get, the greater the disadvantage becomes ... more isolation and, of course, much more morbidity and comorbidity.' (Male, focus group 6, GP with special interest)

Content of preventive care

For both groups of patients — those with high levels of vitality and those who were vulnerable — physical activity was frequently mentioned as an important way to maintain or improve their state of health and functioning:

'Well, keeping mobile plays a major role in staying healthy. If you just sit and stop moving and if you're overweight, then you'll never start moving again.' (Male, focus group 1, GP with special interest)

Furthermore, according to the GPs, the content of preventive care should differ between both groups. In those with high levels of vitality, cardiovascular risk management was considered the most important topic:

'For the active 60-plussers, I can imagine that stroke prevention is a much more important item for them.' (Male, focus group 6, GP with special interest)

Some GPs carried out a cardiovascular health check on request and a few routinely offered such checks to all older persons above, for example, the age of 60 years.

In the population that was considered to be vulnerable, preventive care was mainly aimed at quality of life. Prevention

of social isolation and functional decline was considered important, with hearing/visual impairment, cognition, depressive symptoms, mobility, prevention of falls, and nutrition being the main topics:

'Concerning prevention, I think we have to closely monitor how well the elderly are able see and hear … if that ability starts to deteriorate I'd like to check it … just to make sure that they can still do the few things that make life enjoyable for them … like being able to write and read.' (Male, focus group 2, general GP)

DISCUSSION

Summary

According to the GPs in this study, the need for preventive care depended on the level of patients' vitality, as perceived by the GP. As such, the focus of preventive care should differ between older people with high levels of vitality and those who are vulnerable. A conceptual model of preventive care for older people was constructed, showing the difference in GPs' perspectives towards these groups. According to this model, preventive care comprises five dimensions (aim of care, concept of care, initiator, target groups, and content of care); when older people become more vulnerable, the scope of preventive care shifts within these five dimensions.

In general, GPs appeared to be more focused on preventive care for people who were vulnerable than for those with high levels of vitality. They expected most benefits of preventive care to be gained by allowing those who were vulnerable to live as independently as possible and by preventing their functional decline. For the population with high levels of vitality, the GPs restricted their role to the traditional one of preventing diseases and injuries, for example, by applying cardiovascular risk management. GPs assumed that people without a perceived need for help were not sufficiently motivated to adhere to preventive advice; their doubt about the value of their advice suggests that GPs are making judgments about people's risks and their ability to change, which might not be appropriate.

Strengths and limitations

Focus group discussions were considered to be the preferred way to explore the perceptions of GPs regarding preventive care for older people. With a systematic approach, an analytical framework was developed that was discussed by the researchers until consensus was reached. To the authors' knowledge, this is the first study to examine the attitudes of GPs towards preventive care for older people.

A possible limitation of this study is that clear definitions of older people who were vulnerable, or had high levels of vitality, were not specified; however, during the discussions there was no confusion about these two categories of older people. In general, GPs have an internalised concept of 'vitality' and 'vulnerability; those who are vulnerable are characterised by increased prevalence of diseases and disorders, a poorer prognosis, disability of various kinds, and multiple simultaneous problems.[15,16] Furthermore, the level of vitality is a continuous scale and the perspectives of the GPs seemed to vary along this. The majority of people will be somewhere between these two extremes.

Other potential weaknesses are that only one national health system was investigated, and health professionals in no discipline, other than general practice, were interviewed. Furthermore, the GPs volunteered to participate and only their opinions, not their daily practices, were investigated.

Comparison with existing literature

Much research has shown that for older people living in the community, a systematic screening approach is not effective for highly prevalent disorders.[7,17–22] The current study confirms this finding: GPs stated that preventing or postponing disability in people who are vulnerable needs an individualised approach rather than a systematic screening approach. However, according to Nielen *et al*, GPs have a positive attitude towards primary prevention of cardiovascular diseases if detection focuses on the group of patients at risk.[23] The discussions in the focus groups also shows that a standardised approach for topics such as cardiovascular risk management can be useful for people who have high levels of vitality, with the aim of preventing diseases by early detection of them or appropriate risk factors.

How to identify and classify older people into those who are vulnerable and those who have high levels of vitality were not discussed in the focus groups. As GPs want to apply different preventive care to these groups, the current study suggests that it is important for preventive care to develop a tool to identify these groups of older people.[24,25]

Phelan *et al* described that older persons from an ethnic minority and those with a low socioeconomic status are at higher risk for diseases and disorders, and do not derive equal benefit from the current capacity to

Funding

This study was funded by ZonMw, The Netherlands Organisation for Health Research and Development (reference 7165.0001). The funder played no role in the: study design; collection, analysis, or interpretation of data; writing of the report; or the decision to submit the article for publication.

Ethical approval

None required.

Provenance

Freely submitted; externally peer reviewed.

Competing interests

The authors have declared no competing interests.

Discuss this article

Contribute and read comments about this article on the Discussion Forum: **http://www.rcgp.org.uk/bjgp-discuss**

control disease and death.[26] GPs in this study were aware of these higher risks and the need for a more individualised proactive approach, but described difficulties in implementing this. It would seem that more effort needs to be put into preventive care for these groups, even when the approach for older people who are vulnerable is applied to them.

Implications for practice and research

This study's findings are based on GPs' reported behaviour; the extent to which this mirrors actual behaviour remains a topic for further empirical research. In addition, more research is needed into the way that GPs assess the vitality of older people in practice and the effects of those assessments on their actual behaviour and the care outcomes.

This study highlights the need for more research on the ways in which preventive care for older people who are vulnerable and those who have high levels of vitality can be improved, focusing on ethnic minorities and people with a low socioeconomic status. This relies on being able to define those who are vulnerable and those with high vitality levels; this distinction needs to be clarified in future research.

To verify this study's findings, other studies need to be undertaken in order to explore how the model fits in with the perspectives of other GPs and in other countries. In addition, the perspective of older patients should be addressed. Insight into both viewpoints will help negotiate care goals that result in shared decision making that truly is shared between the GP and the patient.

In the opinion of GPs, preventive care for older people who have high levels of vitality can follow a standardised approach; such care for people who are vulnerable, however, needs an individualised approach to prevent functional decline and to allow them to live as independently as possible for as long as possible.

REFERENCES

1. Health Council of the Netherlands. *[Prevention in the elderly: focus on functioning in daily life], 2009/07 edition.* The Hague: Health Council of the Netherlands 2009 (in Dutch).
2. The Swedish National Institute of Public Health. *Healthy ageing, a challenge for Europe.* Stockholm: The Swedish National Institute of Public health 2007.
3. Division of Aging and Seniors, Public Health Agency of Canada. *Healthy aging in Canada: a new vision, a vital investment. From evidence to action. A background paper for the Federal, Provincial and Territorial Committee of Officials [Seniors].* Ottawa: Division of Aging and Seniors, Public Health Agency of Canada 2006.
4. Prime Minister's Science Engineering and Innovation Council. *Promoting healthy ageing in Australia.* Canberra: Prime Minister's Science Engineering and Innovation Council, 2003.
5. Fletcher AE, Price GM, Ng ES, *et al.* Population-based multidimensional assessment of older people in UK general practice: a cluster-randomised factorial trial. *Lancet* 2004; **364(9446):** 1667–1677.
6. Iliffe S, Orrell M. Identifying unmet health needs in older people: comprehensive screening is not the answer. *Br J Gen Pract* 2006; **56(527):** 404–406.
7. Drewes YM, Gussekloo J, van der Meer V, *et al.* Assessment of appropriateness of screening community-dwelling older people to prevent functional decline. *J Am Geriatr Soc* 2011; **60(1):** 42–50.
8. Dutch College of General Practitioners. *[Practice guidelines from the Dutch College of General Practitioners 2009].* Utrecht: Dutch College of General Practitioners, 2008 (in Dutch).
9. de Ruijter W, de Waal MW, Gussekloo J, *et al.* Time trends in preventive drug treatment after myocardial infarction in older patients. *Br J Gen Pract* 2010; **60(570):** 47–49.
10. Dutch College of General Practitioners. *English summary.* Utrecht, the Netherlands: Dutch College of General Practitioners, 2012. http://nhg.artsennet.nl/English.htm (accessed 17 Sep 2012).
11. Kitzinger J. Qualitative research. Introducing focus groups. *BMJ* 1995; **311(7000):** 299–302.
12. Krueger RA. *Developing questions for focus groups.* Thousand Oaks, CA: Sage Publications, 1998.
13. Green J, Thorogood N. *Qualitive methods for health research.* 2nd edn. London: Sage Publications, 2010.
14. Ritchie J, Spencer L. *Qualitative data analysis for applied policy research. In qualitative researcher's companion.* Miles MB, Huberman AM, eds. Thousand Oaks, CA: Sage Publications, 2002: 305–330.
15. Fried LP, Ferrucci L, Darer J, *et al.* Untangling the concepts of disability, frailty, and comorbidity: implications for improved targeting and care. *J Gerontol A Biol Sci Med Sci* 2004; **59(3):** 255–263.
16. Peters LL, Boter H, Buskens E, Slaets JP. Measurement properties of the Groningen Frailty Indicator in home-dwelling and institutionalized elderly people. *J Am Med Dir Assoc* 2012; **13(6):** 546–551.
17. de Craen AJ, Gussekloo J, Blauw GJ, *et al.* Randomised controlled trial of unsolicited occupational therapy in community-dwelling elderly people: the LOTIS trial. *PLoS Clin Trials* 2006; **1(1):** e2.
18. Eekhof J, De Bock G, Schaapveld K, *et al.* Effects of screening for disorders among the elderly: an intervention study in general practice. *Fam Pract* 2000; **17(4):** 329–333.
19. Gussekloo J, de Bont LE, von Faber M, *et al.* Auditory rehabilitation of older people from the general population — the Leiden 85-plus study. *Br J Gen Pract* 2003; **53(492):** 536–540.
20. Shenson D, Adams M, Bolen J, *et al.* Routine checkups don't ensure that seniors get preventive services. *J Fam Pract* 2011; **60(1):** E1–E10.
21. Smeeth L, Iliffe S. Community screening for visual impairment in the elderly. *Cochrane Database Syst Rev* 2006; **(3):** CD001054.
22. Yueh B, Shapiro N, MacLean CH, *et al.* Screening and management of adult hearing loss in primary care: scientific review. *JAMA* 2003; **289(15):** 1976–1985.
23. Nielen MM, Assendelft WJ, Drenthen AJ, *et al.* Primary prevention of cardio-metabolic diseases in general practice: a Dutch survey of attitudes and working methods of general practitioners. *Eur J Gen Pract* 2010; **16(3):** 139–142.
24. 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–M156.
25. Kempen GI, Miedema I, Ormel J, *et al.* The assessment of disability with the Groningen Activity Restriction Scale. Conceptual framework and psychometric properties. *Soc Sci Med* 1996; **43(11):** 1601–1610.
26. Phelan JC, Link BG. Controlling disease and creating disparities: a fundamental cause perspective. *J Gerontol B Psychol Sci Soc Sci* 2005; **60 Spec No 2:** 27–33.