



# NIHR PHR Review Team

# Extending working life: review protocol

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#### Summary

- The extension of working lives is happening at a time when there are considerable changes taking place in the nature of work. The removal of the default retirement age potentially gives employees more choice regarding when to retire however, choice may not be available to those with poor health or in poverty, with the potential for extending work to impact on inequalities in older age and act differentially in population sub-groups.
- This work has been commissioned to provide an independent review of existing research in
  this area to establish what is known, where there are clear gaps in the evidence base, and to
  provide national and local policy makers with the best available evidence on the public health
  impacts of longer working lives.
- The aim is to identify, appraise and synthesise existing research evidence regarding the
  pathways from longer working lives to public health impacts, including identifying where
  interventions at an individual worker, employer, government and wider society may be
  effective and cost-effective to ensure that longer working lives do not have adverse public
  health outcomes.

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- We aim that a core focus of this review will be to examine the evidence using a public health
  lens to explore health enhancing, health neutral, and potentially varying effects on population
  sub-groups, and explore how longer working lives may impact on health inequalities.
- Given the potentially extensive and diverse literature relating to working lives, we propose to
  conduct the review in multiple stages to ensure that the work is deliverable, and that the
  outputs will be of practical value to stakeholders, including policy makers, research
  commissioners and communities and other stakeholders.
- The first stage will involve a mapping review, supplemented by stakeholder consultation. This mapping process will establish the volume and characteristics of evidence potentially available, and where priorities for focussing may lie. The output from this first stage will be a report which maps the literature available. This will provide information to underpin discussion with stakeholders and the Public Health Review Team commissioners regarding the refining of the review parameters (inclusion and exclusion criteria) for the second stage systematic review.
- The second stage systematic review will examine available published and grey literature evidence in order to develop a draft logic model setting out outcomes and impacts, levers of change, moderating and mediating factors and potential intervention points relating to the public health effects of extension of working lives. The model will include indicators of pathways between elements (what might lead to what) where the evidence permits, together with an evaluation of the current strength of evidence underpinning each outcome and impact reported. An accompanying report will detail the evidence via a narrative summary, and highlight any implications for particular sub-groups of the population and impacts on health inequalities.
- A final consultation stage with stakeholders will explore the applicability and validity of the model in order to co-produce a final version. We will use co-production methods to develop versions which are suitable for varying target audiences.
- The final report and all associated outputs will be delivered by March 2021

## Background

The removal of a default retirement age in the UK potentially gives employers and employees greater choice when making the decision about when to retire, including options such as a phased process. While many people opt to still retire at the previous statutory age of 65 years (which has in the past varied by gender), in the context of an ageing society there has been increasing policy focus and encouragement to retain older workers in the workforce (often referred to as "age management").

Economic arguments for longer working lives point to both the adverse impact on individuals as a result of reductions in private pension wealth from exiting the workforce, and also the adverse impact on public finances. Also, the negative effects on the wider economy due to an increased strain on pension systems and reduced productivity. A report by the Department for Work and Pensions in 2014 (1) for example highlights the gains in terms of tax revenues and economic output from employment of older workers, and the potential "catastrophic consequences" for some individual standards of living following exit from the labour market. Given changing population demographics, the report also emphasises the need to retain older workers in order to meet future labour demands.

There can be a perception that older workers are less productive than younger workers, and that employing older workers limits jobs for younger workers however, these common assumptions have been contested (2, 3). Instead, it is argued that older workers provide considerable skills and experience to the workforce, and their contribution should be fully valued and retained. Therefore efforts should be made by employers to avoid their early exit from employment. This has resulted in encouragement to implement interventions aiming to retain older workers such as by providing flexible working arrangements, redesigning roles, and increased attention to occupational health and safety (commonly referred to as age-friendly employment in organisations). There have also been efforts to encourage interventions which support older workers back into employment, for example by offering re-training.

At a societal level, the concept of "productive ageing" encourages the view that the capacity of older adults should be developed and utilized in activities that make economic contributions to society. (4) Public Health England refers to "productive healthy ageing" and have developed a tool to support their productive healthy ageing policy which provides a set of indicators that describe key issues relevant to older people's health as they age, with an emphasis on "functional capacity" rather than age.[5] An alternative framework is the concept of "active ageing" which takes a wider life course approach and recognises that activities such as voluntary work, informal care and social engagements and relationships are important, not just economic activity. While long-term health problems and chronic diseases are more prevalent in older populations and may impact on retention, it is argued that the majority of older people are healthy and most people who have a long-term condition or disability still manage to work.[6] In a context of extending employment however, there is potential for widening inequalities in those whose ill health forces employment exit.

In addition to economic arguments for extending working lives in terms of improved individual economic well-being and gains for public finances and employers, the positive effects of work for people's physical and mental health and wellbeing have also been emphasised. A 2016 review of

reviews of mental health in the workplace [7] for example reported the benefits of work compared to the detrimental mental health effects of not being employed. The authors concluded that the positive effects of work in terms of enhancing mental well-being were clearly evident. Retirement has been described for some as potentially being a time of "boredom, loneliness and poverty" so continuing to work may have health and wellbeing as well as economic benefits.[1] Authors have emphasised that work does not only provide a source of income for older workers, but feelings of an attachment to the purpose and content of the job, friendships and personal relationships with colleagues.[8]

However, while the case for extending working lives in terms of economic benefits to the public purse, employers and individual income have been established, the link between extending employment and public health outcomes is not a simple association. Research emphasises the need for "good" work, and the requirement to examine the quality of jobs in order to understand the effects on health and well-being. The Chartered Institute of Personnel and Development 2019 survey on UK working lives [9] for example highlighted the considerable disparity in experiences of employment amongst the population. In this survey around one third of workers reported that their workload was a serious problem, three in ten workers reported at least one form of bullying or harassment in the workplace in the previous 12 months, and two in five workers reported having experienced some form of workrelated health condition in the last 12 months (most commonly musculoskeletal, anxiety and sleep problems). The survey also found that overall UK workers tend to have a poor work-life balance. Another study from 2018 [10] reported concerns around working conditions for many in employment, in particular related to leadership, physical work environment and work/life satisfaction. Poor working conditions were related to adverse effects on subjective health, especially mental health and wellbeing. Several research studies have highlighted that poor working conditions are often associated with early retirement.[11,12,13,14]

Variation in the type of employment may also need to be fully considered when examining the effects of extending working lives. It is known that workers in difficult or dangerous jobs tend to retire earlier than their counterparts [15]. Particular industries tend to have greater proportions of early retirees including manufacturing, construction, transport and retail amongst males, and education, health and social care, retail and public administration amongst females. (1) These types of employment may have particular characteristics which present challenges to extending working age. In some jobs there may have to adjustments to accommodate heavy physical demands and long hours for older workers.

Given the disparity in employment conditions, the quality of a job is likely to be a key factor in determining whether extending working life has a positive or detrimental effect on population health and well-being. "Quality" may relate not just to working environment and job content but factors like

pay, job security, flexibility, organisational culture (whether older workers are valued) etc. In modern society there have been sizeable changes in employment patterns and the nature of work. These changes include to working location (with more people working from home), contract type (fixed term or zero hours), conditions of austerity, and employment uncertainty. In a 2017 discussion paper, Kowalski and Loretto [16] highlighted this changing nature of work, the changing role of Human Resources, and the importance of the context of the work environment for worker well-being. The context of employment, including changing working patterns therefore may have a substantial influence on the retention of older workers, and the outcomes and impacts of extending their working life.

Guidelines from the National Institute for Health and Care Excellence on Employees Workplace Health [8] emphasise how an individual's experience of work has an impact on their decision about continuing employment. There has been increasing attention paid to the concept of older worker discrimination. Evidence underpinning the guidelines suggested the importance of how an older person is treated and perceived by managers and colleagues in choosing to work longer, requiring strategies and interventions which focus on age management. Employers have been encouraged to ensure older workers have access to training opportunities and offer flexible working to older employees, to increase staff retention. For all staff, making health and wellbeing an organisational priority, ensuring the role of line managers includes supporting health and well-being, having strategies to identify and manage stress, and ensuring employee involvement in decision-making are recommended areas of intervention.

A 2013 review of evidence on employer interventions to improve the retention and recruitment of older employees [17] categorised the features of good practice within the domains of occupational health and wellbeing, ergonomics, shift working, flexible work, training and development, recruitment and retention and organisational culture and learning. The authors of this review emphasise that these elements can be considered good practice for employees of all ages, not just older adults therefore a life course approach to age management is required. The review found that, while there was an extensive body of evidence commenting on principles of good practice, there was little that provided detail on specifics of interventions. Most studies focused on the individual worker and their decisions and choices, rather than the role of employer practices and the work environment.

While individuals now have potentially greater freedom in decision-making on their age of retirement, it is known that an employees' financial position is likely to be a key determinant of whether they continue to work or are in a financial position to be able to decide to retire. Authors have referred to "push" and "pull" factors which influence retirement planning decision. Those with the highest

incomes (who are likely to have the most favourable pension prospects), will have greater choice than workers with lower incomes. Particular sub-populations may be more at risk of being forced to exit the workforce, for example females who have a caring role for elderly parents, or for grandchildren. Some people in late middle age have been referred to as "sandwich carers", who are managing caring responsibilities for both older and younger people.[1] Women from lower socio-economic groups are a particular concern when considering inequalities as they may be particularly disadvantaged in terms of both lower pension contributions (breaks in work for child rearing) and informal caring obligations.

Workers in physically demanding roles, or those in uncertain or unreliable employment, or poor working conditions are also more likely to exit the labour market earlier. Traditionally employment requiring physical labour has been the domain of those from the working class, with jobs involving psychosocial demands more the domain of the middle class. It is known that health status is an important determinant of early retirement, with around 46% of individuals citing ill health as a primary cause of ending employment.[17] Ill health may be associated with the working conditions and/or job type and potentially widens inequalities in older age between those who discontinue and continue working lives. This range of factors influencing decision-making creates the potential for inequity and varying health outcomes between those who have the choice regarding their optimal period of terminating working life, those who are forced to extend their working life, and those who are forced to leave work prematurely.

While much discussion has focused on the outcomes for individuals in terms of financial stability in older age, or their health and well-being relating to be in employment or not being in employment, there are wider factors/interventions that influence the impacts on public health and wellbeing (both positive and negative) in the widest sense including family and community. At an individual level, retirement can provide opportunities to enhance health via time for increased physical activity, and reduction in sedentary behaviour associated with desk-based employment, and at a community level be associated with increased use of public transport rather than private cars. Retirement may also may represent a switch from paid employment to unpaid voluntary work enabling for example the provision of services or facilities (e.g. libraries, carers support, hospital drivers, community groups) or providing caring for grandchildren or elderly relatives. The wider implications of increasing the number of older people being in paid work (of retention) for local communities and society at large requires consideration.

The outcomes and impacts of extending working life are thus a complex rather than straightforward pathway, with a need to examine the implications of current trends for the whole population and also for health inequalities and/or in sectors with significant numbers of population sub-groups such as

female/ethnic minority/low paid workers. It is important to understand the public health outcomes associated with increased retention of older workers (both positive and negative) to inform guidance so interventions maximise any health benefits of employment, and mitigate any potential harms, by considering contextual factors as well as specific interventions.

## Aim and objectives

The overall aim of this review is to identify, appraise and synthesise existing research evidence on outcomes, and in particular public health outcomes resulting from the extension of working lives. Specific objectives will be:

- To map the UK and relevant international evidence base on: i) the effects of extending working life on the employee, employees' family, the employer, local community, and wider society, ii) the effect of extending working life on different population sub-groups, iii) the effect of extending working life on health determinants and health inequalities and iv) the outcomes of interventions aiming to extend working lives on individuals, communities, society, and health inequalities.
- To conduct a focused systematic review (based on parameters identified following the mapping review) of evidence regarding health, community and society-related outcomes and impacts resulting from extending working lives, with a focus on health determinants and health inequalities.
- To conduct a focused systematic review of evidence (based on parameters identified following
  the mapping review) regarding interventions aiming to extend working lives, and actions
  which may enhance positive outcomes and/or mitigate any adverse effects of extending
  working lives.
- To co-produce with stakeholders a systems model which summarises available evidence on pathways from extending working lives to their public health outcomes and impacts including points of intervention.

Risk of bias and conflicts of interests: To ensure that the review is informed by, and useful to stakeholders who have an interest in the evidence base for extending working lives we will need to include evidence from a wide range of stakeholders. This may include: a range of policymakers, topic experts and researchers, practitioners, community groups and third sector organisations as well as the wider public. We will ask individuals who participate directly in the review process to declare any interests and we will highlight the source of evidence where there is a significant risk of bias.

# Project plan

We are proposing three related work packages: a mapping review of the current evidence base, two linked systematic reviews, plus the co-production of a systems model with adaptations for different stakeholder audiences.

#### Work package 1

Research question

What evidence is available regarding the effects of extending working lives, and what are the effects of interventions aiming to extend employment amongst older adults?

Method

An initial mapping review will be conducted to identify and characterise relevant international and UK specific evidence relating to:

- 1. Evidence of the effects of extending working lives on individuals, employers, the economy, and communities and society at large including health determinants and inequalities.
- 2. Outcomes from interventions which have the aim of enabling people to extend their working lives or re-enter the workforce in older age.

#### Work package 2

Research questions

What is the evidence regarding health, community and society-related outcomes and impacts resulting from extending working lives, and in particular what are the potential effects on health determinants and health inequalities?

What is the evidence regarding the effects of interventions aiming to extend working lives, and what actions may enhance positive outcomes and/or mitigate any adverse effects?

#### Method

The second work package will consist of two systematic reviews:

Review 1. We will examine evidence specifically relating to public health-related outcomes and impacts of extending working lives. These effects are highlighted in yellow in Figure 1.

Review 2. We will examine the effectiveness of interventions which aim to extend working lives (by retaining older workers or encouraging older workers to re-enter the workforce) which report public-health related outcomes.

The parameters of the further review will be finalised following reporting the mapping review, with decision-making based on available volume, type and quality of evidence in order to examine evidence of most relevance and to ensure feasibility of the study. For example we may include only UK primary studies and reviews from other countries, or examine literature from only the last five years.

Work package 3: We will draw on the evidence identified during the mapping review and systematic reviews to develop a systems model which sets out evidence regarding pathways from extending working life to outcomes and impacts for public health. The model will include where there is evidence regarding points of intervention which may enable positive outcomes, and/or mitigate any adverse effects. It will include a summary of the level of evidence identified for each outcome to enable comparison of where evidence is relatively stronger and weaker. We will work with stakeholder groups including the Race Equality Foundation and the Centre for Ageing Better to co-create versions of the model which are most useful to varying audiences.

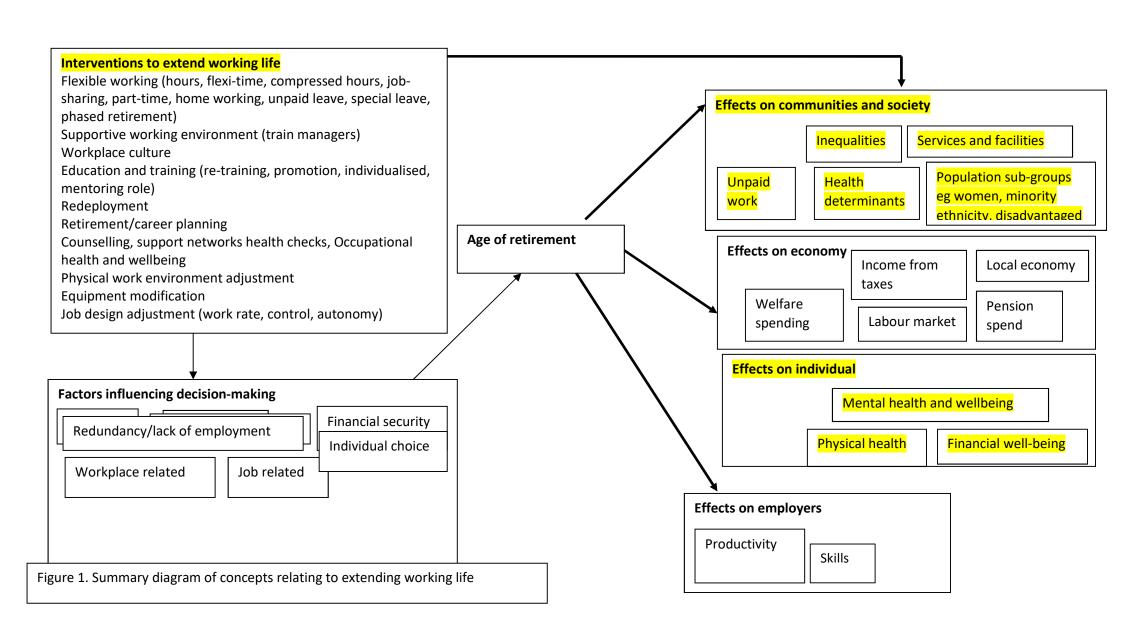


Figure 1. Diagram illustrating the areas to be focused on in the systematic reviews

#### **Proposed outputs:**

- 1. We will produce a report which summarises the available evidence regarding interventions and outcomes, and highlight where there are gaps in research, research priorities and uncertainties.
- 2. We will co-create outputs which specifically focus on evidence relating to choice in the context of changing work and poverty, and which focus on inequalities and effects on population subgroups.
- 2. We will produce "user-friendly" evidence summary briefings for a range of audiences including decision-makers, employers, employees and the wider public.
- 3. We will co-create visual summaries of the evidence in systems models appropriate for varied audiences.
- 4. We will produce academic outputs including open access journal articles and conference abstracts.
- 5. We will produce an audio-visual presentation summarising the study and main findings.

## Proposed methodological approach

We will be drawing on two types of review methodology – mapping review and systematic review. We will be using methods of narrative synthesis in order to combine the evidence that we find, and also systems or logic models to summarise the evidence in the form of associations or pathways between interventions and outputs.

#### **Evidence mapping review - Initial inclusion criteria:**

- Relevant literature from the UK and other developed countries (members of the OECD) published since 2011 (the date of the removal of the default retirement age in the UK).
- Grey literature in the form of relevant UK reports, Guidance, or policy documents published since 2011

The review will be limited to evidence published in English

#### Systematic reviews - inclusion criteria

Following the mapping review, in conjunction with the NIHR PHR team and following discussion with stakeholders, we will define the parameters of the two systematic reviews. Decision-making will be based on the volume and characteristics of the literature available, and where there may be priorities for detailed scrutiny. We may for example include existing international review-level evidence together with primary studies from the UK, or focus on particular effects or interventions.

#### Definitions:

While authors use many definitions to define "older workers" the most common categorisation is to consider older workers as being over 50 years of age [1, 8, 16, 17].

Our definition of public health-related outcomes will be based on the Public Health England Outcomes Framework [https://fingertips.phe.org.uk/profile/public-health-outcomes-framework] which lists outcomes in the categories of wider determinants, health protection, health improvement, healthcare and premature mortality.

## Stakeholder involvement

We will have input from our Public Health PPI Panel and advisors listed above during all stages of the review. We have agreed that the Race Equality Foundation will be closely involved throughout the study including holding workshops at key points in the review process. In particular we will seek guidance from stakeholders in regard to identifying key evidence (particularly in the form of grey literature), interpreting the evidence, and developing the outputs. We propose to use a range of consultation and co-creation methods and will identify appropriately tailored strategies to engage relevant groups.

# Literature search and screening

There will be two search iterations to identify relevant evidence for the mapping review. The first iteration, (database search) will search a wide range of databases. The search will comprise subject headings and free-text terms and will be developed on Medline then adapted for the other databases.

We will search the following databases:

- ASSIA
- MEDLINE
- EMBASE
- PsycINFO
- Social Policy and Practice
- Web of Science (Science Citation Index and Social Science Citation Index)

The search will be restricted to papers in English and from 2011-current.

The second search iteration will include the following search methods:

• Scrutiny of reference lists

- Scrutiny of recent policy documents for relevant, peer reviewed evidence.
- Citation searching of included and highly relevant evidence
- Web search for any relevant UK grey literature

Further targeted searches will be conducted for the systematic review if required.

Search results will be downloaded to a reference management system (EndNote) and screened against the inclusion criteria by one reviewer, with a 10% sample screened by a second reviewer. Uncertainties will be resolved by discussion among the review team.

# Data extraction and quality appraisal

For the mapping review we will record characteristics of the literature identified including date, country of origin, study design, type of intervention (if any), and main outcomes extracted from each potentially relevant document abstract identified during screening.

For the systematic reviews we will extract and tabulate key data from the included papers. Data extraction will be performed by one reviewer, with a 10% sample checked for accuracy and consistency.

In line with mapping review methodology we will characterise the identified literature by type of study design, rather than carrying out individual quality appraisal. For the systematic reviews we will carry out quality (risk of bias) assessment using appropriate tools for the types of study designs included. Quality assessment will be performed by one reviewer, with a 10% sample checked for accuracy and consistency.

# Methods of synthesis

For the mapping review we will provide details of the volume and characteristics of the literature identified. This will be via narrative and tabulation.

For the systematic reviews we will provide a narrative synthesis structured around the research questions. Additional forms of analysis and synthesis will depend on the characteristics of the evidence identified. We will seek to characterise key features of the literature including strengths, limitations and gaps. We will consider use of the Cochrane PROGRESS-Plus Framework to examine characteristics that stratify health opportunities and outcomes. Assessment of the overall quality and relevance of evidence will form part of the narrative synthesis. We will identify where there are certainties and uncertainties in the evidence, and where there are gaps requiring future primary research.

# Conceptual framework development

In order to ensure this this review explicitly acknowledges the complexity of the relationships and pathways between public health-related outcomes and employment we will use the evidence to develop a complex systems model that can be used to identify associations between particular changes in the system and outcomes and impacts.

The aim will be to develop a model which is able to assist policy makers in understanding the potential system level impact of changes to retirement age, any particular groups which may be disproportionately affected, and where there may be particular aspects requiring consideration and/or particular enabling or mitigating action may be optimal.

# Registration and outputs

We will make the protocol available via the PHR programme website, our own website and the systematic reviews will be registered on PROSPERO.

Appendix 1 provides a Gantt chart for the review stages and milestones

## References

- 1. Department for Work and Pensions. Fuller Working Lives A Framework for Action. London: DFWP, 2014.
- 2. Yeomans L. An update of the literature on age and employment. London: Health and Safety Executive, 2011.
- 3. Eichhorst W, Boeri T, De Coen, Galasso V, Kendzia M, Steiber N. How to combine the entry of young people in the labour market with the retention of older workers? IZA Journal of Labor Studies **3**, 19 (2014).
- 4. Gonzales E, Christina Matz-Costa C, Nancy Morrow-Howell N, Increasing Opportunities for the Productive Engagement of Older Adults: A Response to Population Aging, The Gerontologist, Volume 55, Issue 2, April 2015, Pages 252–261
- 5. Public Health England. Launch of the New Productive Healthy Ageing Tool. London Public Health England, 2019.
- 6. British Medical Association. Ageing and the workplace: A report from the BMA occupational medicine committee. London: BMA, 2016.
- 7. Modini, M., Joyce, S., Mykletun, A., Christensen, H., Bryant, R. A., Mitchell, P. B., & Harvey, S. B. (2016). The mental health benefits of employment: Results of a systematic meta-review. Australasian Psychiatry, 24(4), 331–336.
- 8. National Institute for Health and Care Excellence. Workplace Health Management Practices [NG13] London: NICE, 2016

- 9. The Chartered Institute of Personnel and Development. UK Working Lives The CIPD Job Quality Index. London: CIPD, 2019.
- 10. Hagqvist, E., Vinberg, S., J. Landstad, B. and Nordenmark, M. (2018), Is the gap between experienced working conditions and the perceived importance of these conditions related to subjective health? International Journal of Workplace Health Management, Vol. 11 No. 1, pp. 2-15
- 11. Wahrendorf M, Dragano N, Siegrist J. Social position, work stress, and retirement intentions: A study with older employees from 11 European Countries 2012. Available from: http://esr.oxfordjournals.org/content/early/2012/06/21/esr.jcs058.short?rss=1.
- 12. Blekesaune M, Solem PE. Working Conditions and Early Retirement: A Prospective Study of Retirement Behavior. Research on Aging. 2005;27(1):3-30.
- 13. Krause N, Lynch J, Kaplan GA, Cohen RD, Goldberg DE, Salonen JT. Predictors of disability retirement. Scandinavian Journal of Work Environment & Health. 1997;23(6):403-13.
- 14. Kubicek B, Korunka C, Hoonakker P, Raymo JM. Work and family characteristics as predictors of early retirement in married men and women. Research on Aging. 2010;32(4):467-98
- 15. The Chartered Institute of Personnel and Development. Creating longer, more fulfilling working lives: employer practice in five European countries. London: CIPD, 2016.
- 16. Tina H. P. Kowalski & Wendy Loretto (2017) Well-being and HRM in the changing workplace, The International Journal of Human Resource Management, 28:16, 2229-2255.
- 17. Weyman A, Meadows P, Buckingham A. Extending Working Life. Annex 6. Audit of research relating to impacts on NHS Employees. London: National Health Service, 2013.

## Other references of relevance

Centre for Ageing Better (2018) The experience of the transition to retirement: Rapid evidence review. Available at: <a href="https://www.ageing-better.org.uk/sites/default/files/2018-12/Transition-to-retirement.pdf">https://www.ageing-better.org.uk/sites/default/files/2018-12/Transition-to-retirement.pdf</a>.

de Breij, S., Qvist, J.Y., Holman, D. *et al.* Educational inequalities in health after work exit: the role of work characteristics. *BMC Public Health* **19**, 1515 (2019). https://doi.org/10.1186/s12889-019-7872-0

Ebbinghaus, B., & Hofäcker, D. (2013). Reversing early retirement in advanced welfare economies a paradigm shift to overcome push and pull factors. Comparative Population Studies, 38(4).

Edge C.E., Cooper A.M., Coffey M. (2017) Barriers and facilitators to extended working lives in Europe: a gender focus. Public Health Rev. 38:2.

Hasselhorn, H. M. and Apt, W. (2015) Understanding employment participation of older workers: Creating a knowledge base for future labour market challenges. Available at https://www.jp-demographic.eu/wp-content/uploads/2015/07/JPIUEP\_Brochure.pdf.

ILC-UK (2013) EU Member State Profiles - Working Longer: An EU Perspective. London: International Longevity Centre – UK. Available at: https://www.bl.uk/collection-items/working-longer-an-eu-perspective-eu-member-state-profiles.

IPPR North (2017) Extending working lives: A devolved, lifecourse approach to enabling work beyond state pension age. Available at: <a href="https://www.ippr.org/files/publications/pdf/extending-working-lives">https://www.ippr.org/files/publications/pdf/extending-working-lives</a> May2017.pdf.

Merkel S, Ruokolainen M, Holman D. (2019) Challenges and practices in promoting (ageing) employees working career in the health care sector – case studies from Germany, Finland and the UK. BMC Health Services Research 19:918 https://doi.org/10.1186/s12913-019-4655-3

Phillipson, C., Vickerstaff, S., & Lain, D. (2016). Achieving fuller working lives: Labour market and policy issues in the United Kingdom. Australian Journal of Social Issues, 51(2), 187-203.

Zaidi A., Makovec M. Fuchs M (2006) Transition from work to retirement in EU25. Centre for Analysis of Social Exclusion, London School of Economics, Discussion Paper 112. Available at: <a href="https://www.euro.centre.org/publications/detail/347">https://www.euro.centre.org/publications/detail/347</a>.

The EXTEND project – Exploring pension reforms, work, and inequalities 2019 <a href="https://ilcuk.org.uk/the-extend-project-exploring-pension-reforms-work-and-inequalities/">https://ilcuk.org.uk/the-extend-project-exploring-pension-reforms-work-and-inequalities/</a>

# Appendix 1: Gantt chart.

	Jan- Mar	Apr 20	May 20	Jun 20	July 20	Aug 20	Sept 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21
	20												
Work Package 1:	Stage 1 – mapping				Stage 2 – focused			Stage 3 – co- production of outputs					
Mapping review	review & drafting			systematic reviews									
	framework												
Scoping and	Х												
protocol													
development													
Evidence		Х											
identification													
Data extraction		Х	Х										
Analysis and			х	Х									
report writing													
Work Package 2:													
Systematic													
reviews													
Protocol					Х								
development													
Evidence						Х	х						
identification													
Data						Х	х	Х					
extraction/quality													
assessment													
Analysis and								Х	Х	х	Х		
report writing													
Delivery of draft												Х	
report													
Completion final													Х
report													
Work Package 3													
<ul><li>co-production</li></ul>													
with stakeholders													
Public	х									х	х	х	
consultation													
Stakeholder	Х			Х						х	х	х	
consultation													
Production of												Х	Х
systems model													