# Table of Contents

**Introduction, Objectives and Summary** .................................................................................................................. 2  
1. Start of meeting and introduction .......................................................................................................................... 4  
2. National case studies on data evidence and information for Healthy Ageing: setting up for impact ........................................................................................................................................................................ 5  
3. Research to operationalise Healthy Ageing ............................................................................................................. 7  
4. Existing data and innovation to construct Healthy Ageing measures ................................................................. 9  
5. Documenting progress – where we want to go from now to 2030 ........................................................................... 10  
6. Evidence synthesis on Healthy Ageing – how are we going to get there ............................................................ 12  
7. Peer-review break out groups and discussion .................................................................................................... 14  
8. Next steps .................................................................................................................................................................. 15  

Annex 1. Reflections on National Case Studies – Rachel Albone, HelpAge International ........ 17  
Annex 2. Reflection on methods for evidence synthesis – Maya Abi Chahine, American University of Beirut, Lebanon ...................................................................................................................................... 19  
Annex 3. Adopted Agenda, 10 October 2019 ........................................................................................................... 21  
Annex 5. Peer review and feedback for national case studies ....................................................................................... 30  
Annex 6. Peer review and feedback for background papers ...................................................................................... 34  
Annex 7. List of background papers .......................................................................................................................... 35  
Annex 8. Research questions to develop metrics on healthy ageing (noted in paper 6) .... 38
Introduction, Objectives and Summary

WHO’s comprehensive response to population ageing and health is to promote Healthy Ageing over the life course. The Global Strategy and Action Plan on Ageing and Health (GSAP) and the accompanying World Health Resolution (endorsed May 2016) called for a global status report identifying evidence-based actions in each of the described strategy areas. The Global Baseline Report for the Decade of Healthy Ageing, expected to be released in October 2020, will provide a response to three questions: current status of Healthy Ageing (where we are), progress and outcome indicators, including projection scenarios through 2030 (where we want to go), and illustrative, evidence informed interventions that if reaching all who need, would enable countries to advance towards an optimal scenario of healthy ageing (how we will get to where we want to be by 2030). These interventions should advance the Decade for Healthy Ageing’s action plan (under consultation with Member States).

WHO launched an International Consortium on Metrics and Evidence for Healthy Ageing in 2017 with 50 experts from all WHO regions including policy makers, civil society organizers and researchers. Research institutions collaborating with WHO met in 2018 at the Swiss Academy of Humanities and Social Sciences to identify multi-country proposals.

The WHO Department of Maternal, Newborn, Child, Adolescent Health and Ageing commissioned or requested background papers from members of the WHO Consortium on Metrics and Evidence for Healthy Ageing in three work areas:

1. National case studies on how data, information and evidence are being used to improve older adults’ lives (led by Ministries of Health in 8 countries - Chile, China, Finland, Ghana, India, Qatar, Thailand and Singapore);
2. Research on ways to operationalize, develop metrics, and measure Healthy Ageing in a comparable way, within and across countries and over time; and
3. Evidence synthesis of interventions that aim to improve healthy ageing – intrinsic capacities and functional ability. These are person-centered health and health related outcomes, that older adults find meaningful. This work covers both improvements in methods for evidence synthesis and advancing scoping and evidence synthesis on specific interventions that can improve intrinsic capacities and/or functional ability, for example, managing NCDs in older adults and impact of life-long learning programs, such as through universities for seniors.

Background papers will be peer-reviewed by Consortium members, submitted to peer-reviewed journals, and published, with results and key ideas highlighted in the Global Baseline Report for Decade of Healthy Ageing. Results will also inform a related WHO product, a national tool kit to measure Healthy Ageing, to be released in 2021.

The peer-review process was kicked off with draft papers submitted to WHO on 1 October 2019, circulated to all participants on 4 October 2019. The Consortium’s three workstreams met to peer review work in progress during a 2-day meeting at WHO in Geneva, 10-11 October 2019. Meeting participants included 28 experts including all lead authors of background papers, from various national institutes, research institutions, civil societies, and representatives for the Ministries of Health from China, Finland, Ghana, India, Qatar and Thailand, and Civil Society - spanning 15 countries and all 6 WHO regions - and WHO staff (Annex 4).

By convening contributing members of the WHO Consortium on Metrics and Evidence, the aim of this peer review meeting was to present briefly and discuss all background papers addressing the three streams of work. The specific objectives included:
- Discuss and review status of contributions to inform the Baseline Report including new methods, findings for each section, country case studies and highlights.
- Discuss narrative, identify gaps and propose options to address gaps within the deadline of the report process, and next steps.

For case studies, participants discussed the quality and availability of data on older adults, current and possible linkages across data from a range of sectors, and its use by a wide range of stakeholders to inform policy, make programmatic decisions and identify interventions. A reflection from Civil Society offered constructive comments on ways to ensure relevance to a wide set of stakeholders, including older adults themselves (Annex 1). Similarly, Ministry of Health and Family Welfare, India pointed out that to reach out and engage older adults we must consider the majority who are without disease and major declines in capacities, and that governments must also engage with private sector, and sectors beyond health (Annex to be added). New approaches to operationalise and construct Healthy Ageing measures were also discussed along with person-centred evidence synthesis focused on older adults. A reflection from a researcher and practitioner in a middle income country highlighted the importance of this work, given the scarcity of evidence synthesis in the field and the innovative questions posed. Finally, based on three break out groups and panel discussions in plenary, participants provided suggestions to refine the Global Baseline Report narrative, identified gaps and priorities for improvement for each of the three workstreams, and agreed on next steps regarding the peer review process, finalization of papers, and addressing prioritized gaps in current work.

An immediate result of the meeting, based on participants’ discussions and engagement, is that the three streams of work are now one, a multi-disciplinary effort to provide inputs to WHO’s Baseline Report for the Decade of Healthy Ageing.

Participants agreed to send written comments on papers within their workstream and expertise by 31 October 2019 using peer-review templates (Annex 5 and 6) and were encouraged to send written comments on other papers.

Acknowledgement: This is the unedited version of the meeting report written by Ana Posarac and Ritu Sadana, and benefited from comments from all participants.

Grant 68382 to WHO from Velux Stiftung (Swiss not for profit foundation) supports efforts to advance metrics and evidence for healthy ageing including convening this peer review meeting of experts, and supporting preparation of background papers and national case studies.
1. Start of meeting and introduction

The meeting was opened by Dr Anshu Banerjee, Director, WHO Department of Maternal, Newborn, Child, Adolescent Health and Ageing. The objectives, meeting agenda and expected timeline to the background papers and peer-review process were proposed to participants and adopted. The definition of Healthy Ageing and the approach to operationalize it with three constructs, and sub domains drawn from the International Classification of Disability, Health and Functioning, along with learning from the WHO World Report on Ageing and Health, 2015, were provided as a common foundation for the three work streams (Figure 1).

![Figure 1. Sadana et al. Paper 6 – Constructs of Healthy Ageing](image)

In addition, participants had an opportunity to introduce themselves and express their expectations for the meeting, that are grouped in Table 1 in four categories: learn, share and collaborate; reach consensus; fill in gaps; and receive guidance and clarification.

<table>
<thead>
<tr>
<th>Table 1 Participants’ Expectations</th>
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<td><strong>Learn, share, collaborate</strong></td>
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<td><strong>Reach consensus</strong></td>
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- Consensus on Healthy Ageing framework as a tool for policy, learn about research evidence in support of healthy ageing metrics, policy action measures to promote healthy ageing
- Agreement on integrating situation and context aware measures of Healthy Ageing when measuring Healthy Ageing
- All consensus on the broader area of interventions for Healthy Ageing which every country will be encouraged to implement in specific country context
- All national case studies reflect on to which degree all Healthy Ageing constructs including abilities, traits, activities, environments are represented and the added value in comparison to multi-morbidity; highlight opportunities of data integration; and opportunities of harvesting relevant information from other than survey data;

**Fill in gaps**
- Healthy Ageing as a part of all health and social sector education curriculum
- Realistic, programmatic, affordable and implementable guidance and recommendation
- Frame questions to identify barriers to functional ability. E.g. intrinsic, strength, environment, lack of access to care
- Available support to train human resource on geriatric care or gerontology.
- How to adequately deal with data gathering challenging, e.g. questionnaires/interview guides in the diverse languages found in each country

**Receive guidance and clarification**
- Priority questions for evidence synthesis; Defining priority outcomes: 1). Intrinsic capacity; 2). Functional ability; 3). For ageing population people views, countries.
- Understand better how wellbeing changes with age (if it does);
- Understand how need for analysis/design support will be addressed and implemented
- How to do evidence synthesis, so that it serves political incentives
- Understanding the operationalization of intrinsic capacity domain

## 2. National case studies on data evidence and information for Healthy Ageing: setting up for impact

The second session featured National Evidence Coordinators (lead authors of national case studies) from Finland, Ghana, India, Qatar, Thailand, and remotely, China. Each had an opportunity to present a summary of main findings from draft case studies or plans in process. The chair of the session (Dr Sadana, WHO) noted that the perspective and priorities from countries should guide the Consortium’s collective work, as WHO is uniquely placed to collaborate across and advance both science and policy. Moreover, national engagement reflected the three levels of WHO (secretariat in HQ, Regions, Countries, and Member States) cooperating. The inclusion of China and India was proposed due to their combined contribution of the number of older adults globally, and potential for learning from on-going research and monitoring efforts. Each WHO Regional Office also proposed additional priority countries to consider developing a case study; WHO Country Offices (found in most countries) discussed with corresponding Ministry of Health to agree on the approach. All case studies engage Ministries of Health, in collaboration with other partners and stakeholders.

**Finland** – Dr Anja Noro highlighted a wide cross-sectional population database containing information on pensions, medication, use of health and social services, along with longitudinal population surveys on households, health, attitudes. In addition, Finland has register-based research, which is able to link various data sources at an individual level. Data is collected on all older people, both those living at home
and those in institutional care settings. Providing basic IT training for older people is one effort to increase access to existing data and information.

**Ghana** - Dr Collins Badu Agyemang presented a comprehensive list of 7 available data sources in Ghana, many nationally representative, but limited in variables measuring aspects of Healthy Ageing. Potential linkages between datasets were pointed out in 5 of the 7 data sources, each containing various levels of disaggregation. The WHO Study on Global Ageing and Adult Health (SAGE) was highlighted as a useful dataset on ageing and health due to its scale, and expected longitudinal approach and the fact that it is multi-country. Additionally, Dr Agyemang provided an example of the use of data from the National Health Insurance Authority (NHIA) to inform essential drugs lists, and the potential use of other existing data sources through plans for their improvement and encouragement to use in future (Figure 2).

**India** - India’s case study lead, Dr A. B. Dey, gave an overview of data on older adults, from the significance of the Indian census - “a celebration of people” – to the newly established Longitudinal Ageing Study in India (LASI). It is the largest longitudinal study ever undertaken, representative at each state and territory level, with a 25 year follow up planned. Thus, LASI has huge potential not only as a data source in India but also in providing useful learning for other countries and contexts. The case study will plan to document how information on older adults is being used to shape the new Health and Wellness centres and a module on Healthy Ageing that will operationalize promotive and treatment services addressing older adults.

**Qatar** - Dr Hanadi Khamis Mubarak Al Hamad highlighted major gaps in data collection on older adults, however, the National Ageing Survey of Qatar (NASQ) – a nationally representative cross-sectional survey of 2500 older adults - is planned for launch in 2020. The survey will collect a wide range of information including demographics, family and social networks, work status, socioeconomic status, chronic health conditions, mental health, healthcare utilisation, healthcare needs, quality of life, and a comprehensive range of biomarkers.

**Thailand** – Dr Tawanchai Jirapramukpitak discussed a wide variety of data sources are available on older adults including 14 relevant surveys as well as other data sources. Several issues were pointed out such as ineffective use of existing cross-sectional surveys, inaccessibility of available biomarker data, and lack of linkage between existing surveys and other administrative and registration data. These have the potential to be more effectively combined and utilised together to provide a more comprehensive picture of health in older age.

**China** – Dr Tuohong Zang, remotely from WHO Country Office China, on behalf of Mr Lui Ming (National Evidence Coordinator, China), discussed that the Chinese National Case Study is in preparation. It will document gaps in infrastructure of secondary and tertiary care hospitals, human resource gaps in care for older adults, and knowledge gaps in gerontology and geriatrics. However, there are several plans to begin to address these gaps such as the National Healthy Ageing Plan (2021-2025) (under development),

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**Figure 2. Agyemang, Paper 1 – Summary assessment of existing data on older adults**
National Strategy for Long-term Care Insurance (under piloting), and National Health Service Development Plan with a special section on dealing with rapid ageing and urbanization. The use of data and information to shape these plans will be addressed in the case study. A stakeholder meeting to kick off the case study is planned in early December 2019.

In addition to those participating at the meeting, Chile has committed to a case study, yet the national evidence coordinator was unable to attend; a second country in the Western Pacific Region (Singapore\(^1\)), is expected to commit and assemble national stakeholders before year end. A reflection from Civil Society (Ms Albone) offered constructive comments on ways to ensure relevance to a wide set of stakeholders, including older adults; as did from Ministry of Health and Family Welfare, India (Dr Parkash) pointing out that to reach out and engage older adults must consider the majority who are without disease nor major declines in capacities and that governments must also engage with private sector, and sectors beyond health.

3. Research to operationalise Healthy Ageing

In this third session, recent research findings from healthy ageing studies in the USA (Health and Retirement Study), Canada (Canadian Longitudinal Study on Ageing) and India (Longitudinal Ageing Study of India) reported in the background papers were presented for discussion. The chair of the section (Dr Amuthavalli Thiyagarajan, WHO) began the session with brief overview of each presentation and their intended purpose. The first presentation (Ritu Sadana) introduced the WHO operational framework for Healthy Ageing and list of priority research questions. Subsequent presentations from Hudson Golino (University of Virginia, USA), P. Arokiasamy (International Institute for Population Science, India) and Parminder Raina (Mc Master University, Canada) answered two important basic research questions: a) Is there structural validity for healthy ageing constructs as proposed in the WHO operational framework? and b) to what extent the constructs of intrinsic capacity and functional ability are valid among older persons in the USA, India and Canada? Additional research questions are noted in Annex 8, drawn from paper 6. Within longitudinal studies, including how well can the emerging construct, intrinsic capacities, predict life expectancy and healthy life expectancy.

Figure 3. Golino et al. Paper 7 - Exploratory Graph Analysis of IC.

\(^1\) Confirmed by Ministry of Health through informal discussions in November 2019, with formal approval expected in December 2019.
Key summary points:

- Advancing research and evidence synthesis on Healthy Ageing has been identified as a priority action area in the global strategy and action plan on ageing and health, endorsed by 194 Member States at the World Health Assembly in 2016.
- A systematic approach towards operationalisation of the concepts is central to advance research on healthy ageing – and so that this can be a valid and comparable outcome measure.
- To advance research, the validity and the population health utility of the healthy ageing concepts are essential. First, this includes content validity, assessing that all items are relevant to intrinsic capacities and functional ability and comprehensive for these two constructs of interest; and for the target population, e.g. adults in second half of life. Second, this includes testing the internal structure of instrument/data used, and third, other measurement properties (i.e. reliability, measurement error, criterion validity, hypotheses testing for construct validity and responsiveness.)
- The internal structural of the healthy ageing is assessed by structural validity, internal consistency, and cross-cultural validity/measurement invariance. Internal structure refers to how the different aspects (e.g. items, tasks, observations or parameters) in an outcome measurement instrument are related, which is important to know for deciding how these aspects might be combined into a scale or subscale. Overall, this provides evidence on the degree to which the items of intrinsic capacity or functional ability measures what it claims to be measuring, which is essential for developing an appropriate measurement model to monitor health within and between individuals over time, including within and across countries.
- The HRS-USA background paper identified 23 domains of healthy ageing by pooling together intrinsic capacity, functional ability and enabling the environment (Figure 3). The indicators combine variables related to 20 domains: cognition, psychological functioning, sensory capacity, cardiovascular capacity, respiratory capacity, immunological system, genitourinary system, endocrine system, haematological system, metabolic system, neuromuscular system; basic needs, capacity to learn and grow, mobility, capacity to build and maintain relationships, contribution to society/community; as well as the products and technology of the environment, nature and human modifications of the environment, support and relationships and attitudes of towards older people.
- The LASI-India background paper tested the validity of intrinsic capacity measures in 35000 older adults from 17 states of India. The initial EGA (Exploratory Graph Analysis) revealed six-dimensions of intrinsic capacity. Based on the biological characteristics, the network clusters were named as Cardiovascular, Respiratory, Neuromusculoskeletal, Cognitive, Sensory and Psychological capacities. The study also reported that age, female sex, higher education, higher wealth, number of chronic diseases, and ADL limitations were associated with overall intrinsic capacity and sub-domains scores. However, the association of chronic diseases with cognitive and musculoskeletal capacity was weak. In the next step, the researchers plan to include additional participants and rerun the EGA, CFA (Confirmatory factor analysis) and multilevel regression to confirm the findings with 71,000 older adults from 30 states of India.
- The CLAS-Canada background paper presented very preliminary exploratory findings with range of biomarkers of intrinsic capacity. The initial results suggested that the causal relationship between biomarkers should be interpreted with caution — certain biomarkers clustered with variables that are inconsistent with biological theories on ageing. Also unsurprisingly, the self-reported and objective measures of intrinsic capacity showed very poor correlation (e.g. vision self-reported vs objective visual acuity test performance). In moving forward, the research team will review the variables sorted for the measurement model and select the appropriate measures, and then run the analysis for further testing.

2 https://www.cosmin.nl/tools/cosmin-taxonomy-measurement-properties/)
In the question and answer section, the meeting participants suggested that further testing should aim to reduce the number of items required for the measurement of Healthy Ageing. This would also facilitate measurement and reporting at the national and sub-national level.

4. Existing data and innovation to construct Healthy Ageing measures

In the afternoon, discussion moved on to a question and answer session with principal investigators from the Canadian Longitudinal Study on Ageing (CLSA) (Dr Raina), LASI (Dr Arokiasamy), New Zealand Health Work and Retirement longitudinal study (Dr Allen), and the two Singaporean longitudinal studies: the Panel on Health and Ageing of Singaporean Elderly (PHASE) and the Transitions in Health, Employment, Social Engagement and Inter-generational Transfers in Singapore Study (THE SIGNS Study) (Dr Malhotra). Discussions centred on the contents of the questionnaires, breadth of available data which includes or focuses on older adults and whether it can be mapped on to existing intrinsic capacity, functional ability, and environmental domains proposed by WHO.

Southern District, Hong Kong, China

Figure 4. Boker et al. Paper 11 – Distance and travel time to health and social facilities.

The session also focused on alternative approaches and innovations to collect and analyze data, in order to measure and report on Intrinsic capacities, Functional Ability and Environments, that is particularly relevant to local settings.

- a 9-country study using real-life activity assessment of IC, FA, and environmental conditions of older adults through personalised devices gathering data on movement within their surroundings, audio snippets, and experience sampling and cognitive testing. The result is a data bank owned by each individual (Dr Martin provided overview and Dr Lum the specifics from the Hong Kong, China study site);
- use of geographical data in the public domain (google maps) to determine characteristics of 14 cities and accessibility of health and social care services by older adults by walking, driving, and public transport (Figure 4); the indicators are aligned to those WHO has proposed to assess age friendly environments (Prof Boker, remotely);
- use of geographical data to determine the relationship between access to local services and green spaces and dementia in a variety of countries, that links environmental data to data collected through household surveys (Dr Wu);
- analysing the USA Health and Retirement Study to develop and track Healthy Ageing trajectories of people over time (Prof Boker, remotely); and
- exploring sex differences in the trajectories of IC and FA by capturing inter- and intra- individual changes of IC and FA considering different unobserved groups within a large population (Ms Kim, South Korea – Korean Longitudinal Study of Ageing).

In the question and answer period, participants discussed the ethics and legality of storing personal data, particularly when data on individuals is linked with geospatial location. Overall the new methods are considered promising as they a) draw on publicly available data, that is improving in quality and coverage; and b) can provide older adults with greater access and use of information about their own intrinsic capacities and functional abilities. A smaller, follow up meeting focusing on trajectories across the life course was recommended once the results from the USA HRS paper is completed.

5. Documenting progress – where we want to go from now to 2030

The final session of Day 1 discussed current ways of monitoring progress of older adults that inform policy national policy objectives and related agendas for 2020-2030 through various indicators. Sh. Nilambuj Sharan, Economic Advisor (Joint Secretary), Indian Ministry of Health and Family Welfare, as chair of the session, provided an overview of demographic and epidemiologic factors that are leading countries, including India, to address systematically population ageing and the policy imperative to do so from a healthy ageing perspective. Sh. Sharan noted several action areas to advance between now and 2030, including responsive health systems that provide coordination and continuum of care; skilled human resources; intergenerational equity given long term care that defines roles for non-health actors; and supporting peoples’ awareness and motivation to avoid chronic diseases.

Three presentations highlighted the cycle of policy and implementation, informed by data and evidence, and the need for on-going monitoring and reporting on collectively agreed indicators of progress or outcomes.

- (Dr Iyengar, remotely) provided a brief overview of the evidence-based programs addressing falls and chronic disease – two leading causes of death and disability in the US. Lastly, he shared peer-reviewed, nationally representative studies showing the effectiveness of falls and chronic disease intervention programmes as indexed by indicators on falls rates, return on investment for fall prevention programmes, depression scores, unhealthy physical days. Additionally, Dr Iyengar discussed how these efforts contribute towards the US Healthy People initiative which has spanned the past five decades and is a multi-year process seeking to set national goals and measurable objectives to guide evidence-based policies, programs, and other actions to improve health and well-being as well as to share and support the implementation of replicable, scalable, and sustainable evidence-based programs and policies among other goals.

- Decade of Healthy Ageing 2020-2030 proposal, the second action plan of the Global Strategy on Ageing and Health that is proposed as a WHO / UN Decade (Dr Manandhar) – provided a brief overview of the consultation process leading to the proposal’s 4 action areas (ageism, health systems, long term care, age friendly cities) and provided a handout on the evidence supporting interventions in each area.
Picking up on this point, Dr Dery discussed the implementation of the 2030 Agenda for SDGs, and National Statistical Offices’ reporting on SDG indicators inclusive of older adults. NSOs in each country are mandated to report on national progress on SDG indicators. Under the auspices of the UN Statistical Commission, the Titchfield City Group on Ageing and Age-Disaggregated Data is developing standardised tools and methods to disaggregate data by age, increase reporting of data relevant and meaningful to older adults, and will encourage countries to use these data. An initial review of NSOs reporting on indicators for each SDG goal, shows that across low, middle, and high income countries, there is much variation (Figure 5 shows a sample of 11 countries). This is multi-sectoral and there are challenges with data collection across different institutions and stakeholders. Nevertheless, efforts to improve data collation and reporting are taking place, with specific milestones by 2025.

The discussion highlighted that participants agreed to make older adults visible in national and international reporting, and facilitate reporting and comparability across countries, data should be disaggregated by age and sex and not lump end age categories, such as 60 and over or 65 and older. For example, for the proposal on the Decade of Healthy Ageing, the WHO team noted that Member States approved the Global Strategy and Action Plan on Ageing and Health’s progress indicators that were already being monitored, (first Action Plan on Ageing and Health), along with SDGs indicators that are population based, including older adults. The Titchfield City Group on Ageing and Age Disaggregated Data, made up of 50 national statistical offices, are considering which SDGs indicators should be considered as priorities to disaggregated by age, in order to make older adults visible. This will inform both the Baseline Report and the International Expert
Advisory Group on SDGs, under the UN Statistical Commission, that reviews all proposals related to SDG indicators.

6. Evidence synthesis on Healthy Ageing – how are we going to get there

Day 2 started with a session addressing evidence for action, chaired by Dr Laragh Gollogy, Editor in Chief of the WHO Bulletin, the organization’s monthly peer review journal. Before research can be synthesized on what can be done, WHO pointed out that the annual publication of research papers on healthy ageing topics are steadily increasing since the publication of the WHO World Report and the endorsement of the Global Strategy on the topic (Figure 6). At the time of the Madrid International Plan of Action on Ageing, this was around 50 articles per year; in 2019, this has already climbed to 700 articles per year, with 2 months remaining to include.

![Research on Healthy Ageing](image)

**Figure 6.** Number of publications on Healthy Ageing 2002-2019 found on PubMed

With increasing research on healthy ageing in the pipeline, Dr Howe of Cochrane Campbell Global Ageing gave an overview on the importance of improving evidence synthesis methods so that these can address interventions optimizing Healthy Ageing and include older adults from a person centered approach (not disease). She gave examples of how guidance and improved methods will make a difference, among many others:
- assessing the effectiveness of interventions, programs, policies, and services,
- assessing the impact of interventions on reducing health inequities

She also gave an overview of the users of evidence (policy-makers, healthcare professionals, government agencies, patients, etc), and on key gaps in guidance from various stakeholders on evidence synthesis methods to satisfy their needs, such as prioritisation of questions for evidence synthesis, requirements on data disaggregation, key interventions mapped onto environment, and key outcomes of interest mapped onto Intrinsic capacity (IC) and functional ability (FA), among others.
Related, Dr Welch of Campbell collaboration, lead the development of an evidence and gap map to illustrate, by domains of functional ability (Figure 7), the number of existing studies and synthesis identifying interventions that can also support older adults. The interactive map is also an effort to increase access to evidence by a wider audience (https://globalageing.cochrane.org/cochrane-reviews).

![Evidence and Gap Map](image)

**Figure 7. Welch et al. Paper 22 - Evidence and Gap Map**

Three additional scoping or guideline reviews were commissioned to explore existing evidence and its quality and relevance to older adults. In the Baseline Report, WHO is expected to highlight new evidence on what can be done to optimize intrinsic capacity and functional ability, and discuss options and approaches to scale up these interventions. Based on a global consultation on research and evidence synthesis priorities, understanding WHO’s current recommendations, and Civil Society concerns that the SDG indicator on NCD mortality excluded adults age 70 and over, three key areas were selected:

- mapping existing WHO guideline recommendations across life-course stages, on to the domains of intrinsic capacity and functional ability (Dr Prina). Very few recommendations currently exist that are inclusive of older adults;
- evidence of effective interventions evaluated with older adults, addressing cardiovascular health (spanning behavioural risk factors or other interventions to promote healthy ageing) and effective interventions for prevention and management of cardiovascular disease in older adults (Dr Mendis);
- scoping review of evaluated life-long learning programmes and their impact on health (mental, physical, social, or other). There are more studies than expected, although largely from high income countries; further work will refine the findings. (Dr Sibai)

A reflection from Ms Maya Abi Chahine, highlighted the importance of this body of work, given the scarcity of evidence synthesis in the field and the innovative questions posed. She also noted that collectively we need to reduce waste in research, highlight potential harm and benefits, enhance research relevance and use in low and middle income countries, and maximize efficiency in research investments. There was a debate on whether all interventions, such as learning programmes for seniors, need to be evaluated for impact, if people feel good about participating. Overall, participants agreed that for WHO
to recommend an intervention, or consider it as a promising intervention and recommend it for scale up, it requires evidence that it can result in desired impacts addressing healthy ageing. Further information, such as on costs/resources required, are needed to consider ways to scale up or replicate in other settings.

7. Peer-review break out groups and discussion

Participants then broke off into three groups according to their contributions and expertise:
- national case studies
- advancing research on measuring Healthy Ageing
- evidence to support scale up and impact on older adults’ lives

Each group was tasked to discuss learning, improvements, gaps and next steps. To encourage discussions participants were provided with guiding questions (presented below) and two peer-review templates (on National Case Reports and on remaining background papers). Each group reported back in plenary with presentations addressing key points. Table 2 draws on these presentations and provides an overview of key points. In light of many gaps identified for future research, Prof McNair provided an overview of how the Joint Learning Initiative, More Years Better Lives, linked up research calls on demographic change and population ageing, involving 18 countries’ national research funding institutions.

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<th>Strengths of the studies</th>
<th>National case studies</th>
<th>Research in Measuring HA</th>
<th>Evidence synthesis</th>
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<tbody>
<tr>
<td>-Wide stakeholder interaction</td>
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<td>-Use of mixed-methods approach</td>
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<td>-High level commitment</td>
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<td>-Next steps are to engage stakeholders</td>
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<td>-Lots of variables to measure intrinsic capacity</td>
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<td>-Structures that cover sub-groups of the population</td>
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<td>-Potential to capture lower limits of functionality</td>
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<td>-Used a systematic approach to assess components of healthy ageing</td>
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<td>-They deal with novel questions</td>
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<td>-Highlight the gaps and existing issues, generating future questions</td>
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<th>Limitations of studies</th>
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<td>-Different timelines between countries</td>
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<td>-Comparable data needed – conceptual clarification</td>
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<td>-Functional ability – not fully integrated in the data</td>
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<td>-Operationalization – intrinsic capacity, functional ability, environment</td>
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<td>-Need levels of consensus – face validity &amp; construct validity to be defined</td>
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<td>-Terminology consensus issues/operationalisation</td>
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<td>-Existing evidence is skewed (studies exclude older adults/oldest-old/multimorbidity, and evidence from LMICs).</td>
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<td>-Life-course approach (focusing on second half of life)</td>
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<td>-Quality of evidence</td>
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<table>
<thead>
<tr>
<th>Gaps/what should be addressed</th>
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<tr>
<td>-Methodology on national case study compilation</td>
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<tr>
<td>-Identify the type of data, quality of data, how it is used and who is the user, then categorize for policy use</td>
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<tr>
<td>-Specific examples on how existing databases have been or are being used to inform</td>
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<tr>
<td>-Tailor to individual needs – functional ability measure within an individual</td>
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<td>-Multimorbidity</td>
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<td>-Recommendations to making use of existing data</td>
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<td>-Combination of population with individual high intensity data</td>
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<td>-Predictors of maintenance</td>
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<td>-Pathways to functional ability</td>
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<tr>
<td>-Interventions and observational studies exclude: people in specific age ranges, people with multimorbidity, refugees/migrants</td>
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<td>-Environment/health systems approaches to functional ability</td>
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<td>-Human rights</td>
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policies or in national or subnational reports
- Specific examples of how policy needs have informed or lead to data collection initiatives
- Make data more accessible and widely disseminated
- A special meeting to focus on dynamics of healthy ageing from longitudinal studies

**What should be highlighted in the Global Baseline Report?**
- Age disaggregation in research and statistics needed
- The process of creating interventions for older people
- Examples of evidence based policies on older adults (Finland’s use of administrative data, example)
- Older people involvement in creating surveys, planning services, etc
- Lower end of functional ability, intrinsic capacity, environment
- How many people with problems vs. levels of health capital
- Compare theoretical mechanism vs. empirical models
- Prioritisation on interventions
- Healthcare costs associated with ageing
- Examples on different types of environment understood by different stakeholders, but also IC, and FA.
- Wellbeing

**Any other key issue**
- Include specific recommendations for each country, including on how to remove barriers to data utilization and sharing
- Recommendations for civil societies
- Communication specific for different audiences
- How to operationalize, conceptualize
- Domains – Set of standards (upper & lower)
- What variables should we select? (minimum dataset)
- Models needed (ex. How to maintain IC and FA, pathways to IC)
- Individual-level indicators needed
- Funding
- Evidence easily accessible by diverse stakeholders
- Methodological refinement of existing methods for evidence synthesis that takes into account multi-disciplinarily.
- Public involvement/citizen science
- Ethics and privacy

### 8. Next steps

In the final session, chaired by Dr Anshu Banerjee, participants provided suggestions on refining the report narrative, identified opportunities to showcase work from each stream and overall background papers from now until after the Baseline Report will be published (Table 3).

**Table 3  Wrap up session**

| Approaches to refine Baseline Report narrative | - Given data limitations provide a brief section on methods considering population and individual-level questions  

- Use available data to create a theoretical model to measure Healthy Ageing which includes IC, FA, and environments  

- Use boxed examples to voice concerns / needs on healthy ageing by individual older adults and associations of older adults  

- Create plans for priority setting so every country can implement interventions addressing Healthy Ageing and closing evidence gaps |
Funding opportunities should include capacity building
- Focus on the use and usefulness of data, and the context in which it may be used – local adaptation to specific context
- Adapt examples of data use for consumption by different stakeholders

Opportunities to showcase work
- Linking case studies to policy dialogues within a national dialogue
- Community level dialogue for an older audience
- IAGG – 2021; regional conference – Shanghai forum – Age Friendly cities/Hong Kong
- International conference on psychology – Czech, July
- Political forums G20, G7

Next steps
- 11-31 October – templates with comments collected
- 18 October – Draft meeting report circulated for comments
- 15 November Written comments (peer review) collected, collated, and distributed and on draft meeting report
- 1-15 December – Comments distributed to consortium members and other stakeholders, along with finalized meeting report
- 31 December – papers finalised
- July 2020 – Report into production

All participants agreed to use the templates to complete peer-review comments by 31 October 2019, primarily evaluating papers within their expertise but also any other papers of interest (Figure 8). It is expected that the WHO secretariat will follow up with participants to collect these peer review comments, and as needed, adjust timetables.
The meeting was closed thanking all participants who travelled to Geneva and WHO Secretariat.

Figure 8. Timeline for Global Baseline Report construction
Annex 1. Reflections on National Case Studies – Rachel Albone, HelpAge International

- Thank you to the authors and the teams for their work on the papers so far. The papers provide interesting reading
- Encouraged that we are not starting from zero. Significant challenges in relation to data on ageing and health remain, but there is at least some data available at the national level

Positive aspects in the current draft case studies

- **Ghana**: draft case study highlights the SAGE study – a useful dataset on ageing and health due to its scale, longitudinal approach and the fact that it is multi-country. It would be good for the case study to explore how further buy in for SAGE can be achieved with a range of stakeholders at national level, and how the data can be more easily accessed and more beneficially utilised. The Ghana case study includes a table summarising an assessment of the different data sources available. This is a useful approach that could be replicated in other national case studies
- **India**: like the Ghana case study the India draft highlights a major national ageing survey – the LASI. The scale of this survey (the largest ever undertaken) and its ambition for regular waves of data collection over the longer term, means LASI has huge potential as a data source in India but also in providing useful learning for other countries and contexts
- **Qatar**: the draft makes clear the different starting point in Qatar, highlighting the lack of data on ageing and health currently available, but also providing a concrete way forward with the planned national ageing survey
- **Finland**: the draft includes a useful focus on both health and social care. The case study highlights data collected with all older people, both those living at home and those in institutional care settings – a group often excluded from data collection. The collection of data on coordinated care, informal care and home care is positive
- **Thailand**: draft case study highlights the breadth of different data sources available. These have the potential to be more effectively combined and utilised together to provide a more comprehensive picture of health in older age. The Thailand case study includes a table mapping the different data sources against the WHO framework of intrinsic capacity and functional ability and their domains and components. This is useful in providing a clear summary of data availability and could be replicated in all national case studies

Utilisation of data and how this section could be expanded

- The drafts include some interesting examples of data utilisation, but this section of the papers needs further work across all case studies. Specific examples are needed that detail HOW data is used, for example, to inform policy development or service delivery. Where links between data and a certain policy or programme have been made, these need to be taken further to document what has been done with the data – the HOW
- **Ghana**: the draft includes an example of data from the national health insurance scheme being used to inform essential drugs lists. This example could be taken a step further, if possible, to explore whether older people’s access to medicines has improved as a result of the changes to the drugs lists
• **India:** draft includes information on data sources and on the policy and programme environment, listing policies and programmes relevant to ageing and health, but does not give examples of how data is used to inform these policies or programmes. It would be useful to include clear examples of data utilisation in the case study.

• **Qatar:** given the current limited data available in Qatar and the upcoming national survey, the case study could start to explore what the objectives and aims are in terms of utilisation of the data collected through the survey.

• **Finland:** draft mentions a knowledge management system in Kainuu, used in direct discussions with the older population. This is one of the only references to older people’s engagement across the five draft case studies, so it would be useful for this example to be expanded with more detail given on the knowledge management system, how it is used with older people, how discussions with older people have informed decision making.

• **Thailand:** draft highlights data collection on long term care and some gaps. It would be useful to expand on these and make suggestions as to how to fill these gaps. There is also an example of data from the national health examination survey being used to inform age specific guidelines on medical check-ups. Could this be expanded to detail the differences by age demonstrated by the data and how these translated into differences in the guideline for older people compared with other age groups?

### Inclusion of older people and civil society

- Older people and civil society are providers of data and data users. Both should be involved in all data related processes.
- Older people and civil society should be involved in the process of developing national case studies and in how the case studies are used.
- The section of the case studies on data use needs to more clearly articulate older people and civil society’s access to and utilisation of data. They should also present strategies for how this can be strengthened.
- The Finland draft referenced challenges in relation to older people’s access to and use of data as data is increasingly digitised, and efforts to provide basic IT training to older people in response. The case studies could usefully include other specific examples like this.
Annex 2. Reflection on methods for evidence synthesis – Maya Abi Chahine, American University of Beirut, Lebanon

Let me start by saying that I read the four papers from the perspective of some who:
• Comes from a LMIC on the verge of a financial collapse if not today then tomorrow
• Very recently specialized in gerontology and specifically qualitative research
• For the past 7 years has been working on a small scale intervention (AUB’s University for Seniors) that he having a high impact on seniors and changing their lives (including my mom’s!)

Evidence synthesis, the 3rd stream in our work, is critical given that:
• It informs the first two
• It is about ‘how to get there’
• It is about increasing impact
• It is about decreasing waste in research investment which, as noted by the Gap Map paper, is around 85% due to duplication of work, unpublished work, poor quality work and work that focuses on topics that are not a priority

I have found the four papers to be extremely valuable especially given the scarcity of evidence synthesis in the field, the innovative questions they pose and the important gaps they highlight, which will inform future research and policies.

As for the main ideas I picked up on from the different papers:
• WHO recommendations on primary prevention interventions to improve IC:
  o The paper did the robust work of mapping out the WHO evidence packages of interventions that may impact IC in later life. While the study found a number of guidelines on IC it highlighted several gaps and the most important in my opinion being that the link between the recommendations and healthy ageing is rarely explicit.
• Health & Social & Technological interventions to improve FA, and Evidence Gap Map:
  o This is the first such synthesis, it covered 631 studies and highlighted the quality issue (only 8 out of 69 systematic reviews ranked very high quality while most studies ranked very poor). It also showed that the absolute majority of the studies were conducted in high income countries.
• Promoting Cardiovascular health and managing cardiovascular disease to optimize Healthy Ageing:
  o The main point I picked up on is that the global NCD targets focus on people aged less than 70 years old. Another finding is the limited inclusion of older adults in clinical trials which results in scarce high-quality evidence and non-existent evidence when it comes to people over the age of 75.
• Lifelong learning impact on healthy ageing:
  o So far, the scoping review is promising in that it shows a positive connection between lifelong learning and healthy ageing. It is also trying to look at the health outcomes from the WHO healthy ageing framework. However, we haven’t yet looked at the quality of the studies and the risk of bias. Again, the absolute majority of studies included in the review come from high income countries.

I would like to wrap-up with a few questions to reflect upon:
• How to enhance research in LMICs on healthy ageing? And maybe qualitative research in the field?
• How to maximize the efficiency of research investment in order to reduce waste?
• How to engage other UN agencies, civil society and older people in the healthy decade research and action?
• How to enhance research to evaluate successful interventions in order to scale them up especially that some intervention can be cost effective. This will help replicated them in LMICs in order to improve the lives of older people and enhance healthy ageing. This is highly critical especially that 80% of older adults will be living in LMICs by the year 2050 (though health is a human right regardless of the numbers).

This meeting has 2 objectives:

1. Discuss and review status of contributions to inform Baseline Report including new methods, findings for each section, country case studies and highlights.
2. Discuss narrative, identify gaps and propose options to address gaps within deadline of report process, and next steps.

Endorsed by the World Health Assembly, WHO’s comprehensive response to population ageing and health is to promote Healthy Ageing over the life course. The expectation for a global status report to inform and provide a baseline for the Decade of Healthy Ageing is described in the Global Strategy (2016-2030) and Action Plan (2016-2020) on Ageing and Health (GSAP) and in the accompanying World Health Resolution endorsed by all WHO Member States. The report is under preparation and is expected for release on 1 October 2020. It will provide a response to three questions: current status of healthy ageing (where we are), progress and outcome indicators, including projection scenarios thru 2030 (where we want to go), and illustrative, evidence informed interventions that if reaching all who need, would enable countries to advance towards optimal scenario (how we will get to where we want to be by 2030). These interventions should advance the Decade’s action plan (under consultation with Member States). The role of the Consortium is to support research that WHO will consider in its reporting of healthy ageing; provide evaluated practices; and learning from other institutions on ways to advance healthy ageing and advance collaborative work. The report’s narrative will also be reinforced with examples of how governments, institutions, and other stakeholders are using information and evidence to improve the health and wellbeing of older adults.

Draft background papers submitted by participants are being distributed on 4 October 2019 within a peer review process (not for further distribution). Participants include lead authors of background papers, case studies and highlights from governments, institutes, research and civil society, along with WHO staff. Agenda lists names without affiliations: these are noted in the participants’ list.

Day 1: 10 October

8:30-9:00 Registration (WHO, Geneva, Library Training Room)

9:00-9:45 Session 1: Objectives, Introductions, Expectations
Chair: Dr Anshu Banerjee

Objectives of Meeting and Overview of Agenda, with focus on Healthy Ageing & Country Impact

Participant Introductions & Expectations

9:45-11:00 Session 2: Setting up for impact
Chair: Dr Ritu Sadana
National case studies

- Finland – Dr Anja Noro
- Ghana – Dr Collins Badu Agyemang
- India – Dr A.B. Dey
- Qatar – Dr Hanadi Khamis Mubarak Alhamad
- Thailand – Prof. Tawachai Jirapramukpitak
- China – Dr Tuohong Zhang\* on behalf of Mr Lui Ming

Reflections
- Civil Society, HelpAge International – Ms Rachel Albone
- Ministry of Health & Family Welfare, India – Dr Inder Parkash

\*remote participation

Discussion

11:00 -11:30 Coffee/Tea break

11:30 - 13:00 Session 3: Research to Operationalize Healthy Ageing
  Chair: Dr Jothees Amuthavalli Thiyagarajan

Research plan for Operationalization and Measurement
  – Dr Ritu Sadana

Structural and Construct Validity
- USA – Dr Hudson Fernandes Golino
- India – Dr P. Arokiasamy
- Canada – Prof Parminder Raina

Discussion

13:00 -14:00 Lunch

14:00-16:00 Session 4: Using data and innovations to inform “Where we are”
  Chair: Dr Ritu Sadana

Q&A with Principle Investigators from countries – Canada, India, New Zealand & Singapore including illustrative analyses:
  - New Zealand – Dr Joanne Allen
  - Singapore – Dr Rahul Malhotra

- Portable devices for Functional Ability – multi-country study: Prof Mike Martin & Prof Terry Lum
- Available maps/GIS for Environments – Prof Steve Boker\*
- Individual and environmental data – Dr Yu-Tzu Wu
- Dynamics of healthy ageing trajectories – Prof Steve Boker\*
- Longitudinal data, Republic of Korea – Ms Jihee Kim
Discussion

16:00 – 16:30 Coffee / Tea Break

16:30 – 17:30 Session 5: Where we want to go - From now to 2030
Chair: Dr. Nilambuj Sharan

Documenting policy and practice
- USA – *Dr Vijeth Iyengar*

Documenting progress on proposed Decade of Healthy Ageing 2020 – 2030
- WHO secretariat, Dr Mary Manandhar

Documenting progress on Sustainable Development Goals, Agenda 2030, inclusive of Older Adults
- National Statistical Offices, Dr Jeremiah Sixtus Dery

Discussion

18:00 Reception, WHO Cafeteria

*Day 2: 11 October*

9:00-11:00 Session 6: How are we going to get there – evidence for action
Chair: Dr Laragh Gollogly

Methods for evidence synthesis on healthy ageing
– Dr Tracy Howe

Evidence to promote and maintain Intrinsic capacities
- across life course in WHO guidelines - Dr Matthew Prina
- NCDs and older adults - Dr Shanthi Mendis

Evidence to optimize functional ability
- life-long learning - Prof Abla Mehio Sibai
- evidence gaps to support functional ability - Dr Vivian Welch

Reflection – Ms Maya Abi Chahine

Discussion

11:00-11:30 Coffee Tea Break
11:30 – 13:00  
Session 7.  Three Break out groups – share and discuss learning, improvements, gaps and next steps (structured material and group break out participants’ lists to be provided)  
- National Case studies  
- Advancing research on measuring Healthy ageing  
- Evidence to support scale up and impact on older adults' lives  

13:00 -14:00  Lunch  

14:00 – 14:30  Finalization of Break Out Groups’ Summary Presentations  

14:30 – 16:00  Session 8: Break out group presentation & status of contributions  
Chair: Dr Ritu Sadana  

Presentation and Q&A to each break out group – 20 minutes each  
- National Case studies  
- Advancing research on measuring Healthy ageing  
- Evidence to support scale up and impact on older adults' lives  

Advancing research on Healthy Ageing through joint programming - Prof Stephen McNair  

Discussion: options and priorities for improvement  

16:00 – 16:30  Coffee Tea Break  

16:30 – 17:30  Session 9: Wrap up and Next Steps  
Chair: Dr Anshu Banerjee  

Suggestions to refine report narrative  
Overview of gaps, options and priorities for improvement  
Identify opportunities to showcase collective work  
Meeting expectations of Ministries of Health and Civil Society  
Next steps & Time lines  
Close of meeting
## Annex 4. Participants’ list: WHO Consortium on Metrics and Evidence for Healthy Ageing

Peer Review Meeting of Research and Case Study Contributors to the Baseline Report for the Decade of Healthy Ageing

10-11 October 2019, WHO Headquarters, Geneva (Library Large meeting room, SS-1, Main Building)

<table>
<thead>
<tr>
<th>External Participants</th>
<th>Affiliation and Country</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ms Rachel <strong>Albone</strong></td>
<td>HelpAge International, London, UK Email: <a href="mailto:ralbone@helpage.org">ralbone@helpage.org</a></td>
<td>Civil society peer review</td>
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<tr>
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<td>National case study lead – see extended abstract</td>
</tr>
<tr>
<td>3. Dr Collins Badu <strong>Agyemang</strong></td>
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<td>National case study co-lead – see draft case study</td>
</tr>
<tr>
<td>4. Dr Joanne <strong>Allen</strong></td>
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<td>PI New Zealand Longitudinal Study on Ageing – see extended abstract</td>
</tr>
<tr>
<td>5. Dr P. <strong>Arokiasamy</strong></td>
<td>International Institute for Population Sciences, Mumbai, India Email: <a href="mailto:parokiasamy@iips.net">parokiasamy@iips.net</a></td>
<td>PI Longitudinal Ageing Study India – see draft paper</td>
</tr>
<tr>
<td><strong>Prof Steven Boker</strong>* (Oct 10, afternoon)</td>
<td>Department of Psychology, University of Virginia, USA Email: <a href="mailto:smb3u@virginia.edu">smb3u@virginia.edu</a></td>
<td>Assessing cities and environments from Google maps; - see abstract structural and construct validity of healthy ageing trajectories, US Health and Retirement Study – abstract pending</td>
</tr>
<tr>
<td>6. Ms Maya Abi <strong>Chahine</strong></td>
<td>Department of Epidemiology and Population Health American University of Beirut, Lebanon</td>
<td>Evidence review, senior learning - see draft paper</td>
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<td>Organization</td>
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<tr>
<td>7</td>
<td>Dr Jeremiah Sixtus Dery</td>
<td>Ghana Statistical Service, Accra, Ghana</td>
</tr>
<tr>
<td>8</td>
<td>Dr A. B. Dey</td>
<td>All India Institute Of Medical Sciences, New Delhi, India</td>
</tr>
<tr>
<td>9</td>
<td>Dr Hudson Fernandes Golino</td>
<td>Department of Psychology, University of Virginia, USA</td>
</tr>
<tr>
<td>10</td>
<td>Dr Lauren Griffith</td>
<td>Institute for Research on Aging, McMaster University, Canada</td>
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<tr>
<td>11</td>
<td>Dr Tracey Howe</td>
<td>City of Glasgow College, Glasgow, Scotland, UK and Cochrane Global Ageing</td>
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<tr>
<td></td>
<td>Dr Vijeth Iyengar</td>
<td>Department of Health and Human Services, Washington, D.C., USA</td>
</tr>
<tr>
<td></td>
<td>(10 October, afternoon)</td>
<td></td>
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<tr>
<td>12</td>
<td>Dr Tawanchar Jirapramukpitak</td>
<td>Institute for Population and Social Research Mahidol University, Thailand</td>
</tr>
<tr>
<td>13</td>
<td>Ms Ji Hee Kim</td>
<td>London School of Hygiene and Tropical Medicine, London, UK</td>
</tr>
</tbody>
</table>
| 14. Prof. Terry Lum | Hong Kong University, Hong Kong, China  
Email: tlum@hku.hk | Multi-country study, real time assessment of Functional Ability – see draft paper |
|-------------------|--------------------------------------------------|----------------------------------------------------------------------------------|
| 15. Prof Mike Martin | Dynamics of Healthy Ageing, University of Zurich, Switzerland  
Email: m.martin@psychologie.uzh.ch | Multi-country study, real time assessment of Functional Ability - see draft paper (same as above) |
| 16. Dr Rahul Malhotra | Centre for Ageing Research and Education, Duke-NUS Medical School, Singapore  
Email: rahul.malhotra@duke-nus.edu.sg | PI Singapore Ageing Survey – see published paper |
| 17. Prof Stephen McNair | Chair, Scientific Advisory Board, EU Joint Programming Initiative on Demography  
Email: age@stephenmcnair.uk | Approach to multi-country joint research calls addressing ageing, with current call addressing intergenerational inequality – see draft paper |
| 18. Dr Shanthi Mendis | Former WHO Coordinator for Non-Communicable Diseases  
Email: prof.shanthi.mendis@gmail.com | Evidence synthesis, NCD management in older adults – see draft paper |
| 19. Dr Anja Noro | National Institute of Public Health, Helsinki, Finland  
Email: anja.noro@thl.fi | National case study lead – see draft case study |
| 20. Dr Inder Parkash | Advisor (Public Health), Ministry of Health and Family Welfare, New Delhi, India  
Email: inderparkash55@gmail.com | Deputy Director General, Public Health – leadership and peer review |
| 21. Dr Matthew Prina | Department of Health Service and Population Research, King’s College London, UK.  
Email: matthew.prina@kcl.ac.uk | Evidence review of WHO guidelines across life stages and life-course, contributing to Healthy Ageing – see draft paper |
| 22. Prof Parminder Raina | Institute for Research on Aging, McMaster University, Canada  
Email: praina@mcmaster.ca | PI, Canadian Longitudinal Study on Ageing – see draft and published paper |
<p>| 23. Dr Nilambuj Sharan | Economic Advisor, Ministry of Health and Family Welfare, New Delhi, India | Joint Secretary responsible for Healthy Ageing in India – leadership and peer review |</p>
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<tr>
<th><strong>WHO Participants</strong></th>
<th><strong>Affiliation</strong></th>
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</table>
| Dr Jotheeswaran AMUTHAVALLI THIYAGARAJAN | Epidemiologist, MCA, advancing measurement and health estimates of healthy ageing  
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Email: banerjeea@who.int |
| Dr Laragh GOLLOGLY | Coordinator and Editor-in-Chief, Bulletin of the World Health Organization (WHO’s peer review monthly scientific journal)  
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| Ms Liying HUANG | Administrative Assistant, MCA  
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| Ms Silvia PEREL LEVIN | Consultation, MCA, supporting long term care systems  
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<table>
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<th>Position and Responsibilities</th>
<th>Email</th>
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<tbody>
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<td>Dr Tuohong ZHANG*</td>
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</tr>
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*Remote Participation

Additional WHO staff will be invited to join reception at 18:00 on 10 October 2019 at WHO.
Annex 5. Peer review and feedback for national case studies

Please use the following as a guide to provide feedback on each national case study report. As some countries may have provided an abstract, consider any additional issues or information that may be helpful to add or to highlight in the Global Baseline Report for the Decade of Healthy Ageing.

Paper Title: ___________________________________________________

Peer Reviewer: ________________________________________________

1. Does the paper address a clear question or issue from the country’s perspective?
   Comments:

2. Methods:
   a. Do the methods provide an acceptable approach to answer the main question(s)? Are these clearly explained?
      Comments:
   b. Are there any important gaps in the methods or in the description?
      Comments:
   c. Were there a wide range of stakeholders engaged within health and other sectors?
      Comments:
   d. Were a wide range of data and information sources identified?
      Comments:
   e. Was a qualitative and/or quantitative assessment performed of the available data?
      Comments:

3. Results/findings:
   a. Does the case study identify a past programmatic decision or policy which has been informed by available evidence? Is this described in sufficient detail?
      Comments:
   b. Does the report identify a programmatic decision or policy that will require evidentiary support in the future? Is this described in sufficient detail?
      Comments:
   c. Which example(s) should be highlighted in the Global Baseline Report for the Decade of Healthy Ageing?
      Comments:

4. Learning and sharing:
   a. Does this report provide insight on “how to use information to inform decisions”?
      Comments:
   b. Are the perspectives of older adults taken into consideration?
      Comments:
   c. From the learning to be shared, which ones are relevant for other countries?
      Comments:
5. Are there any additional issues that the case study should consider or clarify?

Comments:

6. What is most interesting in this report that we should clearly highlight in the Global Baseline Report for the Decade of Healthy Ageing?

Comments:

ANY OTHER COMMENTS:

BELOW IS A DETAILED CHECKLIST THAT WILL BE USED BY THE SECRETARIAT TO EVALUATE EACH NATIONAL CASE STUDY IN DETAIL AND PROVIDE FEEDBACK. FEEL FREE TO MAKE ADDITIONAL COMMENTS.
### PLEASE COMPLETE THE FOLLOWING CHECKLIST BY ANSWERING YES/NO, AND PROVIDE COMMENTS IN EACH SECTION ABOUT ITS CLARITY, COMPLETENESS, AND CAPACITY FOR FURTHER DEVELOPMENT

<table>
<thead>
<tr>
<th>Does the paper identify main sources of data and information on older adults? (Example: routine data sources, household/community/institutional surveys, administrative data, burden of disease studies, etc.)</th>
<th>Yes/No</th>
</tr>
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| Does the paper assess existing qualitative and quantitative data? For example does the paper address any of the following:  
  - How complete are the data?  
  - Can a person-centred approach to healthy ageing be described, monitored and reported on? Are the data used for description?  
  - Can the various data sources be linked?  
  - What levels of disaggregation are possible?  
  - Are there projections for the future?  
  - Do older adults use the data? | Yes/No |
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<th>Does the paper address how these data are used now? (Does it provide 1-3 examples of how information has been used to inform a policy or programmatic decision to improve context of older adults – in the past)</th>
<th>Yes/No</th>
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<th>Does the paper address how this data can be used in the future? (Does it provide 1-3 examples of a policy or programmatic decision under consideration now or in the near future (1-2 years), that could benefit from information – outlining what information is available, and what new information would be need)</th>
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| Does the paper address any practices and learning for sharing? Does it address any of the following:  
  - Building up concepts and analytical frameworks  
  - Strengthening capacities for collection, collation, linking and routine monitoring  
  - Strengthening capacities for analysis, reporting and sharing – to a wide range of stakeholders | Yes/No |
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<td>Using data to inform policies, programs, media, business, other innovation</td>
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Annex 6. Peer review and feedback for background papers

PLEASE USE THE FOLLOWING AS A GUIDE TO PROVIDE FEEDBACK ON EACH BACKGROUND PAPER; NOT ALL QUESTIONS WILL BE APPLICABLE TO ALL PAPERS

PAPER TITLE: ____________________________________________________________
PEER REVIEWER: ________________________________________________________

1. Does the paper address a clear question or issue?
   a. Is the objective clear?
      Comments:
   b. Is the link or contribution to a component of Healthy Ageing clear (e.g. intrinsic capacities, functional ability or environments)?
      Comments:

2. Methods:
   a. Are the methods clearly explained?
      Comments:
   b. Do the methods provide an acceptable approach to answer the main question(s) appropriately?
      Comments:
   c. Are there gaps in the methods or in the description?
      Comments:
   d. Should the statistical or estimation methods be described in greater detail? Or less detail?
      Comments:

3. Results/findings:
   a. Are the results justified by the data or other evidence provided?
      Comments:
   b. What is the most surprising result?
      Comments:
   c. Do results advance the research measurement questions addressing healthy ageing? which ones?
      Comments:

4. Discussion/Conclusions: Does this provide insight on the results? Within the country? For other countries?
   a. Are implications for older adults clearly identified?
      Comments:
   b. Are implications for action taken in individual countries identified (national, subnational, local)?
      Comments:
   c. Are next steps outlined?
      Comments:

5. Are there any additional issues that should be considered within the paper, or that need to be clarified?
   Comments:

6. What is the most interesting in this paper that should clearly highlight in the Global Baseline Report?
Annex 7. List of background papers

Background papers for the WHO Consortium on Metrics and Evidence for Healthy Ageing – Peer Review Meeting of Contributors to the Global Baseline Report for Decade of Healthy Ageing

A. National case studies – drafts and extended abstracts

1. National Case Study on Data, Evidence and Information for Healthy Ageing in Ghana
   **Authors:** Multisectoral effort, coordinated by Ghana Statistical Service
   **National Case study contributors:** Dr Jeremiah Sixtus Dery, Dr Collins Badu Agyemang and others.

2. Draft India Report for Global Status Report on Healthy Ageing
   **National case study lead:** Dr A.B. Dey

3. National Case Study on Data and Information on Older Adults in Qatar
   **National case study lead:** Dr Hanadi Khamis Mubarak Al Hamad

4. Knowledge management – Tackling the ageing of the population in Finland, a National Case Study
   **Author and National case study lead:** Dr Anja Noro

5. National Case Study on Data for Healthy Ageing in Thailand
   **Authors:** Tawanchai Jirapramukpitak, Jongjit Rittirong, Kanchana Thienlai, Jirawan Phuaphae, Phongsak Sakultaksin, Chirawut Punnawit
   **National case study lead:** Dr Tawanchai Jirapramukpitak

B. Research on testing methods and approaches to measure healthy ageing

6. Operationalizing Healthy Ageing: Intrinsic Capacity, Functional Ability and Environment
   **Authors:** Ritu Sadana, Jotheeswaran Amuthavalli Thiyagarajan, and WHO team and expert group

7. Analyzing the structure of intrinsic capacity, functional ability and environment using data from the HRS study: An exploratory graph analysis approach
   **Authors:** Hudson Golino, Jotheeswaran Amuthavalli Thiyagarajan, Ritu Sadana, Robert Moulder, Alexander Christensen, and Steven Boker

8. The intrinsic capacity of older adults in India from the Longitudinal Ageing Study in India (LASI) – structural and construct validity
   **Authors:** Arokiasamy Perianayagam, Ritu Sadana, Selvamani Y, Jotheeswaran Amuthavalli Thiyagarajan, David Bloom, Jinkook Lee

9. Canadian Longitudinal Study: Preliminary investigation on structural basis for Healthy Ageing
   **Authors:** Parminder Raina, Christina Wolfson, Susan Kirkland and others

10. Trajectories of Aging in the Health and Retirement Study
**Authors:** Steven M. Boker, Elena Martynova, Robert Moulder, Hudson Golino, Jotheeswaran A. Thiyagarajan, Ritu Sadana

11. **Metrics for Age Friendly Cities from Publicly Available Sources**  
**Authors:** Steven M. Boker, Elena Martynova, Robert Moulder, Jotheeswaran A. Thiyagarajan, Ritu Sadana

12. **Real-time assessment of intrinsic capacity and functional ability: Multi-country study documenting older adults’ interactions with their environment**  
**Authors:** (Consortium paper) Mike Martin, Christina Röcke, Robert Weibel, Luis Miguel Robledo, Matthias Mehl, & Terry Lum, and other key consortium members

**C. Overview or Analysis of national representative household surveys: published papers, drafts and extended abstracts**

13. **Health, Work and Retirement study - use for policy and research in New Zealand**  
**Author:** Dr Joanne Allen

14. **Intrinsic capacity as a framework for Integrated Care for Older People (ICOPE); insights from the 10/66 Dementia Research Group cohort studies in Latin America, India and China. (published paper)**  
**Authors:** Prof Martin J. Prince, Dr. Daisy Acosta, Dr. Mariella Guerra, Prof.Yueqin Huang, Dr KS Jacob, Prof. Ivonne Z Jimenez-Velazquez, Dr AT Jotheeswaran, Prof. Juan J. Llibre Rodriguez, Dr. Aquiles Salas, Dr. Ana Luisa Sosa, Dr. Isaac Acosta, Dr. Rosie Mayston, Dr. Zhaorui Liu, Dr. Jorge J. Llibre-Guerra, Dr A. Matthew Prina, Dr Adolfo Valhuerd

**Authors:** Rahul Malhotra, Mary Ann C. Bautista, Andre Matthias Müller, Su Aw, Gerald Choon Huat Koh, Yin-Leng Theng, Stephen James Hoskins, Chek Hooi Wong, Chunyan Miao, Wee-Shiong Lim, Chetna Malhotra, and Angelique Chan.

16. **Canada’s response to an ageing population: the Canadian Longitudinal Study on Ageing (published paper)**  
**Authors:** Parminder Raina, Christina Wolfson, Susan Kirkland

17. **Living environment and dementia in older people from high-, middle- and low-income countries: results from the Cognitive Function and Ageing Study II and the 10/66 study (pre-publication)**  
**Authors:** Yu-Tzu Wu, Carol Brayne, Zhaorui Liu, Yueqin Huang, Ana Luisa Sosa, Daisy Acosta, Matthew Prina

18. **Trajectories of functional ability and intrinsic capacity in Korean Longitudinal Study of Ageing**  
**Authors:** Ji Hee Kim and Hyunga Choi

**D. Evidence synthesis – methods, scoping reviews, evidence gaps**

19. **Guidance on evidence synthesis for research relevant to healthy ageing and older populations**  
**Authors:** Tracey Howe, Sue Marcus, Joanna Thompson-Coon and Vivian Welch et al.
20. Promoting cardiovascular health and managing cardiovascular disease to optimize Healthy Ageing worldwide and across the life course
   **Authors:** Shanthi Mendis and others

21. WHO recommendations on primary prevention interventions to improve intrinsic capacity across the life-course: a systematic review
   **Authors:** Prina M, Moreno-Agostino D, Co M, Daskalopoulou C, Mayston R, Lee H-y, Wu Y-T

22. Health, Social care and technological interventions to improve functional ability among older adults: A Campbell Evidence and Gap Map
   **Authors:** Vivian Welch, Tracey E Howe, Sue Marcus, Christine Mathew, Ritu Sadana, Morwenna Rogers, Lisa Sheehy, Johan Borg, Kevin Pottie, Joanna Thompson-Coon, Anne Lyddiatt, Elizabeth Kristjansson, Jason W Nickerson, Peter Walker, Peter Tanuseputro, Beverly Shea, Heidi Sveistrup, Panteha Babelmorad, Wei Zhang

   See this link for draft interactive map including more than 350 studies: https://globalageing.cochrane.org/cochrane-reviews

23. Lifelong learning and healthy ageing among older adults: A scoping review
   **Authors:** Maya Abi Chahine, Rima Abdul Khalek, Hany Hashem, Shereen Hussein, Abla Mehio Sibai, Lokman Meho, Ritu Sadana

**E. Additional contributions by Ministries of Health and regional institutions**

24. Impact of Housing Improvements on Reducing Serious Falls among Seniors in Singapore (PowerPoint presentation)
   **Authors:** Chong Soo Yuen and Lau Zheng Yi

25. Evidence-based interventions to address falls and chronic diseases: Perspectives from the United States
   **Authors:** Vijeth Iyengar and Edwin Walker

26. Coordinating research on demographic change
   **Authors:** JPI More Years Better Lives network (18 countries with EU support)
### Annex 8. Research questions to develop metrics on healthy ageing (noted in paper 6)

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<th>Metrics and Measures</th>
<th>Basic research questions</th>
<th>Implementation science questions</th>
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| **Operational standards** | • Given recommendations from Phase I, does the ICF top 2 levels require any amendments to operationalize IC and FA for comprehensive multi-domain profiles in line with healthy ageing paradigm?  
• Using existing data from multiple countries, confirm this operational approach, e.g. structure of domains and relationship with IC and FA. | • Is this valid in pooled global data and for individual countries, and by difference characteristics, such as age and sex? |
| **Measurement and data collection** | • For each domain, what set of measures (irrespective of the way data is collected) provides a stable estimate in diverse populations  
• For each domain, what should be included in a single point? For different age groups? What should be included for trajectories over time?  
• Related, what is the timing and frequency of measures – to ensure validity and sensitivity in clinical and community populations?  
• For each domain, is there a gold standard test or set of tests for clinical and community population?  
• Do data collected through different measurement approaches provide comparable results?  
• What meaningful opportunities do wearable devices/real time data collection offer to measure IC and FA? | • What measures can/should be collected at different settings (for different sub populations (e.g. clinical, community) or resource contexts?  
• Have / can these measures be collected through different measurement modes (i.e. different ways to collect data, or different types of people who administer the test) – accurately, efficiently?  
• What biomarkers can be collected in diverse settings?  
• What new reporting and information use opportunities exist with real time data collection?  
• Can post harmonization analysis approaches provide comparable results (e.g. drawing on existing data from different surveys) across countries. |
| **Metric construction (multi-domain profiles and single domain profile)** | • What is the best approach to calculate and report individual domain scores, and potentially a composite score, for IC and FA? Does the scale cover the entire | • Can consensus on how to measure “environment” in diverse settings be obtained?  
• What is the value of multi-domain scores vs an overall composite |
population (e.g. avoiding ceiling or floor effects)?
- Can meaningful patterns of trajectories over the life course, be identified? Do these differ across countries or by difference characteristics such as cohort, sex or socio-economic profile?
- Is FA measured best through IC and interaction with environments, or through direct measures of FA?

| Interpretation norms | What do different levels of IC and FA mean, whether per domain or overall scores? What thresholds of IC and FA multi domain profiles indicate care dependency, need for care, or other important milestones? What additional information does IC and FA provide in relation to other ways of measuring health in older adults (for example, by different disease or risk factor status?) Does this differ by age, sex, or other characteristics? | How is this information demanded and used by different stakeholders? What is the added value of IC and FA in comparison to disease rates and across life stages/critical phases? What are meaningful approaches to visualise population trajectories of IC and FA (for example, akin to child development growth chart)? |