WHO clinical consortium on healthy ageing 2022

Report of consortium meeting, 5–6 December 2022
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Acknowledgements

The World Health Organization (WHO) Ageing and Health Unit of the Department of Maternal, Newborn, Child and Adolescent Health and Ageing would like to extend warm thanks to everyone who attended the meeting online and made contributions to the work of the Clinical Consortium on Healthy Ageing (CCHA) through 2022.

Matteo Cesari and Yuka Sumi (CCHA Secretariat), both of the WHO Ageing and Health Unit, gave technical direction and guidance for this report, which was drafted alongside Markus MacGill, who independently documented the meeting.

See Annex 2 for the full list of meeting participants.

The work of the CCHA is supported by the Government of Kanagawa Prefecture, the Government of Japan, the Government of Germany and the Universal Health Coverage Partnership (Belgium, Canada, the European Union, France, Germany, Ireland, Japan, Luxembourg, the United Kingdom of Great Britain and Northern Ireland and WHO).

WHO gratefully acknowledges the in-kind partnering support of a number of WHO collaborating centres and international professional and academic organizations, in particular the WHO Collaborating Centre for Frailty, Clinical Research and Geriatric Training, Gérontopôle, Toulouse University Hospital and the WHO Collaborating Centre for Public Health Aspects of Musculoskeletal Health and Ageing, University of Liège.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADLs</td>
<td>Activities of Daily Living</td>
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<tr>
<td>CCHA</td>
<td>WHO Clinical Consortium on Healthy Ageing</td>
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<tr>
<td>COVID-19</td>
<td>Coronavirus disease 2019</td>
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<td>GDS</td>
<td>Geriatric Depression Scale</td>
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<td>IADLs</td>
<td>Instrumental Activities of Daily Living</td>
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<td>IC</td>
<td>Intrinsic capacity</td>
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<td>ICOPE</td>
<td>Integrated Care for Older People</td>
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<td>MMSE</td>
<td>Mini Mental State Examination</td>
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<tr>
<td>MNA</td>
<td>Mini Nutritional Assessment</td>
</tr>
<tr>
<td>SPPB</td>
<td>Short Physical Performance Battery</td>
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<td>TAG4MHA</td>
<td>Technical Advisory Group for Measurement, Monitoring and Evaluation of the United Nations Decade of Healthy Ageing</td>
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<tr>
<td>the Decade</td>
<td>The United Nations Decade of Healthy Ageing (2021–2030)</td>
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<tr>
<td>UI</td>
<td>Urinary incontinence</td>
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<td>WHO</td>
<td>World Health Organization</td>
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The 2022 annual meeting of the World Health Organization (WHO) Clinical Consortium on Healthy Ageing (CCHA) was the group’s eighth gathering. It was held virtually on December 5–6, 2022. Six panels of presentation and discussion took place across the two days: (i) monitoring the integrated continuum of care, (ii) validation of the Integrated Care for Older People (ICOPE) screening tool, (iii) care pathways for urinary incontinence (UI), (iv) advancing the measurement of intrinsic capacity (IC), (v) validation of functional ability and (vi) the economic case for healthy ageing. The final session of the meeting then discussed the way forward for the next year of the CCHA’s activities.

The United Nations Decade of Healthy Ageing (2021–2030), led by WHO, includes four action areas:

1. Change how we think, feel and act towards age and ageing.
2. Ensure that communities foster the abilities of older people.
3. Deliver person-centred integrated care and primary health services that are responsive to older people.
4. Provide access to long-term care for older people who need it.

In this context, the CCHA Secretariat continued to prioritize ICOPE implementation in 2022, to better support countries and to expand the discussions on ICOPE care pathways, the measurement of IC and the economic aspect of healthy ageing. The ICOPE pilots and implementation sites are yielding significant learning and experience to achieve meaningful results in this action area, including the validation of the ICOPE screening tool and the understanding of IC trajectories in clinical and community settings.

**Executive summary**

**Monitoring the integrated continuum of care**

Action area 3 aims to increase the coverage of integrated health and social care services as part of universal health coverage and to optimize IC and functional ability by 2030. The framework for monitoring and evaluating this action area is central to ICOPE and the activities of the CCHA.

This panel identified several actions. For the Consortium, further studies should document the monitoring of IC across settings and explore the use of telehealth to support the ICOPE approach. For WHO, the piloting of the programme indicators with CCHA participants and the showcasing of the potential of telehealth and self-screening for the delivery of care become important.

**Validation of the ICOPE screening tool**

The panel heard from three pilot sites – Chaoyang, China; Toulouse, France; and Catalonia, Spain – on their experiences of validating the ICOPE screening tool and particularly the sensitivity and specificity of the tool.

From these discussions, various actions were identified. For the CCHA, these include further consideration of the ICOPE screening tools and the validity of their results. More validation studies in different contexts should also be conducted. It is also important to continue searching for opportunities to engage different stakeholders. For WHO, a key action is to explore the characteristics of the ICOPE screening tool as a whole, not only through the adoption of a monodimensional, independent approach to the specific domains of IC.
Care pathways for urinary incontinence
This panel considered the potential development of care pathways for preventing, diagnosing and managing UI in older people. The condition influences all domains of IC and places a burden on individuals and society. Thus, it was important for the CCHA to consider whether a specific care pathway can become part of the ICOPE approach.

The panel identified actions for the CCHA, which include the establishment of a CCHA working group on UI for piloting the care pathways for older people with UI in the primary care setting. For WHO, it was to prioritize the drafting of UI care pathways to share with CCHA participants and the engagement of stakeholders to raise awareness on UI and related issues.

Advancing the measurement of intrinsic capacity
If powerful, robust, reliable data sets to implement and monitor healthy ageing through IC can be created, the trajectories of health will be visible and potentially better intervenable. This panel considered a set of systematic reviews that ask – and answer – the question, “What are the measurement gaps for IC?”

The key action for the CCHA is to engage in a pilot study on the validation of evidence-based measures of IC. Actions for WHO include drafting evidence-based recommendations on valid, reliable and responsive measures to monitor IC and developing guidance for a testing measurement model for IC for use in clinical practice.

Validation of functional ability
The goal of healthy ageing is to maintain functional ability – the health-related attributes that enable people to be and to do what they have reason to value. Functional ability can also be defined as the interaction of an individual’s IC and the environment. While recent annual meetings of the CCHA were particularly focused on IC as a core component of the healthy ageing framework, this panel considered the functional ability and its validation.

The panel identified various actions. The CCHA should conduct a pilot study to validate a questionnaire aimed at measuring functional ability, also to support further research on the relationships and interactions between IC, functional ability and environment. On the other hand, WHO should validate the definitions of the functional ability domains across countries and settings.

The economic case for healthy ageing
Investing in a healthier trajectory in later life can lift the contributions made by everyone in our ageing populations. With this in mind, the final panel of the CCHA discussed the importance of healthy ageing for a robust and vibrant economy and heard how two countries (Cambodia and France) are preparing for the future of their ageing populations.

Including health economic assessment in the protocols for ICOPE pilots and documenting economic data and analysis to support ICOPE implementation are two key actions for the CCHA. WHO will focus on formulating an economic argument and developing a narrative on the value of implementing the ICOPE approach.

The way forward
Upcoming technical products in 2023 include guidelines on chronic primary low back pain, indicators on monitoring and evaluation of the Decade, the draft of a second edition of the ICOPE guidance and an ICOPE training programme for health and care workers. Implementation tools for long-term care and services are also in the pipeline. The publication of the 2023 Progress Report for the Decade is planned and a national toolkit on monitoring the Decade’s progress should also become available over the year.
The 2022 annual meeting of the World Health Organization (WHO) Clinical Consortium on Healthy Ageing (CCHA) was the eighth gathering, held virtually in 2022, of an international multidisciplinary group representing clinical experts, academics, policy-makers and civil society. It drew from the full breadth of the field of ageing to progress the work agreed by Member States under the 2016 WHO Global strategy and action plan on ageing and health (1) and United Nations (UN) Decade of Healthy Ageing (2021–2030) (2). The following six panels of presentation and discussion took place across two days (5–6 December 2022):

1. Monitoring the integrated continuum of care
2. Validation of the Integrated Care for Older People (ICOPE) screening tool
3. Care pathways for urinary incontinence (UI)
4. Advancing the measurement of intrinsic capacity (IC)
5. Validation of functional ability
6. The economic case for healthy ageing.

A closing session discussed the way forward for the next year of the CCHA’s activities.

Since the adoption of the Decade, more countries and partners have an interest in healthy ageing and what they can do to achieve it. One of the four action areas of the Decade is to “deliver person-centred integrated care and primary health services that are responsive to older people”. The piloting and implementation sites for the ICOPE approach are yielding much learning and experience to support action in this area.

The insights include findings on the validation of the ICOPE screening tool and on the trajectories of IC in clinical and community settings. The CCHA Secretariat continued to prioritize ICOPE implementation in 2022 – to better support countries and to expand the discussions on ICOPE care pathways, the measurement of IC and the economic aspect of healthy ageing. Focused on these themes, the 2022 meeting had five objectives and six expected outcomes.

<table>
<thead>
<tr>
<th>Meeting objectives</th>
<th>Expected outcomes</th>
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<tr>
<td>To discuss findings on the trajectories of IC.</td>
<td>To learn how the trajectories of IC can inform interventions and care pathways.</td>
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<tr>
<td>To evaluate the ICOPE screening tool and the possible inclusion of UI care pathways in the ICOPE handbook.</td>
<td>To revise the ICOPE screening tool.</td>
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<tr>
<td>To develop the measurement of IC and functional ability at the population level.</td>
<td>To discuss care pathways to manage UI.</td>
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<tr>
<td>To discuss the economic aspect of healthy ageing and the value of an investment case.</td>
<td>To advance the measurement of IC and functional ability.</td>
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<tr>
<td>To design the continuum of integrated care along the life course.</td>
<td>To identify the methodology to address the economic aspect of healthy ageing.</td>
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<td></td>
<td>To plan the priority work for the CCHA in 2023.</td>
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1 See https://www.who.int/initiatives/decade-of-healthy-ageing.
Consortium activities over the past year

The 2022 meeting started with an overview of recent activities involving the CCHA. WHO has published the report of the November 2021 meeting (3). This is available alongside those of all the previous meetings, at the CCHA’s dedicated webpages.2

With the continued support and expertise of the CCHA over the past year and alongside partners, WHO:

- published the Framework for countries to achieve an integrated continuum of long-term care (4) – see Panel 1 (on page 3);
- established the Technical Advisory Group for Measurement, Monitoring and Evaluation of the United Nations Decade of Healthy Ageing (TAG4MHA) (5) – see Panels 1, 4 (on page 18) and 5 (on page 21);
- announced the Healthy Ageing 50 (6) – Congratulations to these 50 leaders from diverse sectors (some of whom are also participants of the CCHA) who are transforming the world to be a better place in which to grow older;
- published the findings from the ‘ready’ phase of the ICOPE implementation pilots (7);
- engaged, across different WHO regions, with several countries interested in further piloting the ICOPE approach;
- made more progress with the evidence-based guidelines for chronic primary low back pain;3 and
- advanced the work to validate the concept of IC – see Panel 4 (on page 18).

At the end of day two, the meeting closed with an overview of the ongoing technical products being produced by WHO with the technical support of the CCHA, before exploring the priorities for the year ahead (see ‘The way forward’ on page 30).

The team at the WHO Ageing and Health Unit was strengthened in 2022 by welcoming, as a member of staff, Matteo Cesari, who has been one of the key contributors to healthy ageing and the CCHA since 2014. The meeting extended a warm welcome to both the longstanding Consortium attendees participating again in 2022 and to those who are new to the group of around 70 people (see Annex 2 for all meeting participants).

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2 See https://www.who.int/groups/clinical-consortium-on-healthy-ageing.

The United Nations General Assembly adopted the United Nations Decade of Healthy Ageing (2021–2030) in December 2020. WHO was tasked with the leadership of the Decade, which is aligned with the Sustainable Development Goals. The global initiative brings together governments, civil society, the private sector, the media and United Nations agencies to improve the lives of older people, their families and communities around four interlinked action areas – to do the following.

1. Change how we think, feel and act towards age and ageing.
2. Ensure that communities foster the abilities of older people.
3. Deliver person-centred integrated care and primary health services that are responsive to older people.
4. Provide access to long-term care for older people who need it.

The objective of action area 3 is to increase the coverage of integrated health and social care services as part of universal health coverage and to optimize IC and functional ability by 2030. The framework for monitoring this action area is central to ICOPE and the activities of the CCHA.

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4 Older people are aged 60 years and over for the purposes of the monitoring and evaluation framework of the Decade.
• Financial resources – the data on these, including the number of ICOPE interventions included in the universal health coverage package, informed by the ICOPE readiness assessment – i.e., the ICOPE implementation scorecard (9) as well as the process evaluation survey.
• Geriatric workforce – including capacities of workforce, national programme in geriatric care and ICOPE training for health and care workers.
• Data, research and innovation – such as the availability of age- and sex-disaggregated data on older people in routine health information systems.
• Infrastructure – including indicators for availability of space and a referral network for full ICOPE care pathways implementation.

▶ Output indicators:
• availability of integrated health and care services;
• affordability of integrated health and care services;
• accessibility of integrated health and care services;
• quality of integrated health and care services.

▶ Outcome indicators:
The short-term outcome indicators are for the coverage of services (e.g., screening, assessment and interventions for common health conditions in older age) and for risk factors and behaviours (e.g., physical activities, dietary, harmful habits, emergency visits).

The medium-term outcome indicators reflect IC and functional ability:
• Averages or proportions of older people with high, declining or significant loss in IC (i.e., six domains of IC: cognitive capacity, psychological capacity, locomotor capacity, hearing capacity, vision capacity and vitality capacity).
• Averages or proportions of older people with high, declining or significant loss in functional ability (i.e., five domains of functional ability; abilities to meet basic needs, to learn and grow and make decisions, to be mobile, to build and maintain relationships and to contribute to society).

The long-term (impact) outcome indicators cover the areas of (i) life and healthy life expectancy (i.e., healthy life expectancy at the age of 60), (ii) care dependence and (iii) well-being.

Trajectories of intrinsic capacity

Since the start of the ICOPE pilots in 2020, the accumulating data have enabled preliminary results for the trajectories of IC over time. The meeting heard results from three studies describing these trajectories and how they may be monitored to identify declines and inform interventions.
• Hong Kong Special Administrative Region, China: the study has unveiled trajectories using self-reported data collected in four time points linked to determinants such as age, sex and different levels of financial resources and chronic diseases.
• Toulouse, France: this pilot programme has yielded at least two sets of follow-up data on the implementation of ICOPE in part of the French healthcare system – from Step 1 for screening and from Step 2 for assessment.
• Chaoyang, China: this pilot has reported follow-up data for three and six months against a randomized controlled implementation of ICOPE, identifying the trajectories of IC among older people in the five domains of cognition, mobility, vision, nutrition and mood.

Results from secondary analysis conducted in Hong Kong SAR

The objectives of this secondary analysis, conducted in 1,371 people living in the community aged 60 years or over, were to identify the different patterns of IC trajectories and examine their determinants and associations with Instrumental Activities of Daily Living (IADLs) (10). Self-reported data collected in four time points between 2016 and 2021 were examined using a bifactor model and latent class growth analysis. Since the analysis relied on an existing database, some of the items measuring the domains of IC were adapted (Table 1) and slightly differed from those proposed in the ICOPE handbook (11).

The bifactor model of the IC domains achieved a good fit to the data used to generate scores at the four time points. The analysis identified the following three distinct groups of participants:
• class 1: persons with the highest baseline level of IC showing the least decline;
• class 2: persons following a trajectory similar to participants in class 1 but starting from a lower level of IC;
• class 3: persons presenting the most declining trajectory and starting from the lowest point.
As shown in Figure 1, the three trajectories of IC were associated with the probability of preserving IADLs. In particular, class 3 notably diverged from the other groups over time and presented a higher probability of worsening function. The subsequent logistic regression model found that participants in class 3 were more likely to be older, be women, perceive financial inadequacy, live in public or subsidized housing and present with chronic diseases. Consistent results were obtained after adjustment for potential confounders.

Table 1. Items used to build a measure of IC in the secondary analysis from Hong Kong SAR

<table>
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<tr>
<th>Intrinsic capacity domain</th>
<th>Items</th>
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<tr>
<td>Cognitive</td>
<td>• Five-item Abbreviated Memory Inventory for Chinese (AMIC; 12)</td>
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| Locomotor                 | • “Do you have any difficulty walking up 10 steps alone without resting and without aids?” (Yes/no)  
• “Do you have any difficulty walking several hundred yards [about 640 metres] alone and without aids?” (Yes/no) |
| Vitality                  | • “Have you had any weight loss of 5% or more within the past six months?” (Yes/no)  
• “How much difficulty do you have in lifting and carrying 10 pounds [4.5 kg]?” (0 = none, 1 = some, 2 = a lot or unable) |
| Sensory                   | • Vision capacity: “Do you see things clearly?” (1 = very poor capacity to 6 = very good)  
• Hearing capacity: “Do you hear things clearly?” (1 = very poor capacity to 6 = very good) |
| Psychological             | • Evaluative well-being: “Are you satisfied with your life?” (Yes/no)  
• Hedonic well-being: “Are you happy with your life?” (0 = the most unhappy to 8 = the happiest)  
• Eudemonic well-being: “Do you find purpose or meaning in your life?” (Yes/no) |

Source: Courtesy of Ruby Yu, Derek Lai, Grace Leung and Jean Woo, Jockey Club Institute of Ageing, The Chinese University of Hong Kong

Figure 1. Trajectories of IC associated with the probability of preserving IADLs

IADLs = Instrumental Activities of Daily Living

- Highest baseline level of IC and least decline (class 1)
- A parallel group in trajectory but with a lower IC starting point (class 2)
- Most declining trajectory and starting from the lowest point – and associated with a large and growing gap in healthy ageing (class 3)
- Self-reported data collected in four time points between 2016 and 2021

Source: Courtesy of Ruby Yu and colleagues
Gaining an understanding of risk factors and verifying them for declining trajectories of IC is critical for early identification of the most vulnerable individuals and prompt implementation of preventive strategies against adverse health outcomes.

**Pilot in Toulouse, France**

This implementation research provides valuable information on feasibility and acceptability in a health care system. The research team described the real-life implementation of the ICOPE approach in the primary health care system of a high-income country (i.e., the Occitania region of France). The work was conducted through the involvement of primary care physicians and community nurses. It involved more than 21,000 persons aged 60 years and older, who were reached by health workers trained in the ICOPE approach, using adaptations of the WHO resources (i.e., the ICOPE MONITOR app and ICOPEBOT). A detailed description and findings from this implementation study were published recently in a peer-reviewed article, which concluded “that the large-scale implementation of ICOPE in clinical practice is feasible” (13).

The presentation to the CCHA initially showed data from a subgroup of 5,054 older people who had been screened with the ICOPE questionnaire (Step 1) twice (average time interval between the two Step 1 assessments: about 5.5 months) over a 21-month period. The incidence, persistence and reversibility of the positive results for each IC domain were reported, demonstrating different behaviours across IC domains.

The CCHA then heard results from exploratory analyses based on the use of the Step 1 screening questionnaire as a monitoring tool in a smaller sample of participants (n=2,246) who had been screened three times over 15 months. It was presented that these participants experienced fluctuations between normal and abnormal findings for all the IC domains (Table 2). However, some domains appeared to be less susceptible to changes than others. For example, the screening for hearing impairment reported more consistent results across the three evaluations – always positive or always negative in around 72% of the cases. By comparison, for vision impairment, consistent results over time were observed in about 42% of cases.

| Trajectory of positive (Yes) or negative (No) results at the three screenings over 15 months of follow-up | Percentage of participants following each trajectory, by domain |
|---|---|---|---|---|---|---|
| | Cognitive impairment | Limited mobility | Malnutrition | Depressive symptoms | Vision impairment | Hearing impairment |
| No, No, No | 23.5 | 28.2 | 69.5 | 50.3 | 4.2 | 10.4 |
| Yes, Yes, Yes | 30.7 | 36.8 | 1.7 | 10.5 | 38.4 | 62.3 |
| No, No, Yes | 3.9 | 8.9 | 5.3 | 4.5 | 1.2 | 3.7 |
| No, Yes, Yes | 4.0 | 6.2 | 1.7 | 2.4 | 6.1 | 7.3 |
| Yes, No, No | 11.9 | 5.7 | 10.6 | 14.2 | 8.8 | 4.6 |
| Yes, Yes, No | 13.4 | 6.4 | 3.3 | 8.1 | 32.6 | 5.5 |
| No, Yes, No | 8.1 | 3.4 | 5.4 | 4.5 | 5.5 | 2.4 |
| Yes, No, Yes | 4.5 | 4.3 | 2.5 | 5.5 | 3.4 | 3.7 |

N=2,246, mean age = 77.6 years (standard deviation, 8.1), 64.6% women

*Source:* Courtesy of Philipe de Souto Barreto and colleagues
Analyses using data from ICOPE Step 2 (i.e., person-centred in-depth assessment) from a smaller group of participants (around 150) were conducted to monitor IC over the 15 months. In particular, the analyses focused on the following domains:
- locomotion (measured using the Short Physical Performance Battery, SPPB; 14);
- cognition (Mini Mental State Examination, MMSE; 15);
- vitality (Mini Nutritional Assessment-Long Form, MNA; 16);
- psychological (4-item Geriatric Depression Scale, GDS; 17).

For each of these domains, the participants were divided into three groups according to the trajectory followed by that domain over time (i.e., stable, slight decline, steeper decline).

The results showed that declining capacities in the domains of cognition and vitality were significantly associated with worsening ability to perform Activities of Daily Living (ADLs), independently of age, sex, body mass index and education. A trend of association was found for declining locomotion and worsening ADL performance (p=0.056). These findings demonstrate the close relationship between IC (and its components) with an adverse health-related outcome of primary interest to older people (i.e., physical dependency). Acknowledging the limitations of these secondary analyses, the results are still relevant and suggest that preserving people’s IC may reduce the risks of disabling conditions.

Pilot in Chaoyang, China

The presenter of the results from the first phase of piloting in Chaoyang referred to the report of the “ready” phase of implementation reported in 2022. Policy-makers had been convinced of the case to introduce the ICOPE pilot, they said, so that China would not need to approach older people’s care “in the traditional way, for more than 100 million seniors”. Ensuring the feasibility of ICOPE implementation was thus an important step to take. The presenter added that adapting the ICOPE care pathways, screening and assessment tools to the local context was also critical. This means the pathways are then able to “empower the integrated care managers to do the intervention”. Integrated care managers in this intervention were a cadre first introduced in

Discussion points

With respect to the comparative study in Chaoyang with data from almost 2,500 persons, the discussion sought to clarify the difference between the intervention and control arms. In fact, the control group was also exposed to part of the intervention as it received a care plan recommendation after the ICOPE Step 2 at the baseline assessment. However, for the intervention group, there was relevant additional care in following up the initial assessment and reviewing how the care plan

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6 Due to the access to this care being via telehealth only during COVID-19 restrictions, hearing could not be included.
was implemented. One of the CCHA participants commented that, in the control group, the IC trajectory should be expected to decline over time. The study team answered that the data were indeed showing a declining trajectory: "The ICOPE intervention is making some difference. There are some improvements, even during this short period of time." This led to the discussion on the importance of identifying and validating clinically meaningful changes in the IC trajectories that could be used to promptly activate preventive strategies.

The mix of remote and digital technology-supported delivery versus face-to-face delivery of ICOPE screening and monitoring was identified and covered briefly as a good topic to explore in greater depth for the next CCHA meeting. There might be some limitations, such as being able to test some capacities. However, "for some populations, particularly in remote areas, telehealth might be less expensive". Also stressed was the importance "of developing locally available resources that we could coordinate and integrate in, for example, certain communities or rural villages". There has been a lot of learning from the recent and ongoing pandemic-restricted contexts and insights to inform the CCHA’s work in this field.

A number of points in this first panel’s discussions looked at the sensory domain of IC trajectories. For example, on vision, there was the question of how Step 1 may be affecting ICOPE screening tool sensitivity because of optometrically corrected vision – a discussion that would be picked up further in the closely related Panel 2. Another contribution considered the high prevalence of cataracts as well as the presbyopia corrected by glasses/spectacles. The trajectory of this domain can indeed be affected by access to ophthalmological care and the organization of the local healthcare system, especially during the COVID-19 restrictions. In this context, some CCHA participants felt that, in well-resourced settings, vision impairment may have only a marginal role in the definition of IC trajectories given the relatively “easy” possibility of correction.

Clarity was added by the discussion of how confounding or contributory factors, such as gender and socioeconomic status, may affect the trajectories of IC in the pilots – influencing both the baseline levels and directions of the curves. This discussion reflected a robustly and expertly informed set of inputs.

### Action points

**Actions for the CCHA**

- **Further study:**
  - how to improve the monitoring of IC across settings (e.g., through follow-up assessment of ICOPE Step 1 and/or Step 2);
  - how to estimate the clinical relevance of changes in IC.
- Document the use of telehealth to deliver ICOPE, exploring both advantages and disadvantages (e.g., acceptability, feasibility, accessibility, quality of care, effect on the digital divide).
- Validate self- and informal caregiver-administered ICOPE screening compared with that conducted by a health and care worker.

**Actions for WHO**

- Develop meta-data for the ICOPE programme indicators to evaluate impact.
- Pilot the programme indicators with CCHA participants for feasibility and acceptability and to estimate the cost of data collection.
- Showcase the potential of telehealth and self-screening towards the delivery of care and the effective implementation of ICOPE programmes.
Panel 2.
Validation of the ICOPE screening tool

When the WHO team and partners engage with countries on healthy ageing and implementing ICOPE, they are often asked about the sensitivity and specificity of the ICOPE screening tool. As part of beginning to understand how well the ICOPE outreach can be validated, the meeting heard from three pilot sites on their experiences of validating these means of detecting declines in IC and identifying the needs for integrated care.

Chaoyang, China

The analyses considered over 33,500 persons living in the community, reached through a wide media campaign and communications. After excluding people younger than 70 and/or with severe disability or dementia, the study included nearly 7,500 older people who then self-screened their domains of IC (i.e., Step 1 – Screening) using a locally adapted app. Those who screened negative were offered health education (i.e., informative material on healthy ageing, promoting a healthy lifestyle [in particular, on nutrition and physical activity] and recommendations about self-screening IC). Almost 2,150 persons were screened positive for impaired IC:

- 537 entered the intervention group consisting of a person-centred comprehensive assessment and care plan conducted by an integrated care manager; and
- the remaining 1,611 constituted the control group, which received the same service-level provision of care but without the active engagement of the project team in the planning, management and follow-up of the ICOPE care plan.

As sub-analysis of the ICOPE pilots, the validation of the screening tool was conducted with 1,402 participants giving a complete set of data (572 males, 830 females, mean age 76.6 years). For 449 participants, the older persons used the tool themselves; for 344, it was used by family members; for 457, by health and care workers; and for 152, this screening was administered by “others”. Table 3 shows a summary of the data collected by the ICOPE screening tool and the validity results.

Except for vision, the current screening items are good for identifying people who are not at risk of IC decline. The levels of specificity were above 80% for two items (cognition and hearing), above 70% for another two (depressive mood and nutrition) and above 65% for mobility, but relatively poor for vision. The results were substantially consistent across levels of education (less than 5 years of schooling and more than 12 years), cognitive status and sex.

The eligibility criteria of the study might have influenced the results. It could not, therefore, be excluded that different findings could be obtained if the instruments are used in a more heterogeneous population.

In the second phase of the pilot, questions on oral health and macular degeneration will be added to the local-adapted screening tool for malnutrition and vision impairment, respectively.

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7 The broad set of tools is introduced in a handy guide with visual presentation of the full care pathways for the most relevant domains of IC – see the 2019 ICOPE handbook, available at https://www.who.int/publications/i/item/WHO-FWC-ALC-19.1 (11).
Table 3. Screening assessment tools in the Chaoyang pilot, with validity data

<table>
<thead>
<tr>
<th>Domain of IC</th>
<th>Cognition</th>
<th>Mobility</th>
<th>Nutrition</th>
<th>Mood</th>
<th>Hearing</th>
<th>Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening tool</td>
<td>3 ICOPE questions: time, place, orientation and memory</td>
<td>Chair rise test 5 times ≤14s</td>
<td>2 ICOPE questions: unintentional weight loss, loss of appetite</td>
<td>2 ICOPE questions: negative emotions and no interest</td>
<td>Whisper test / wearing hearing aids</td>
<td>WHO simple vision / any eye problems</td>
</tr>
<tr>
<td>Screening negative</td>
<td>All correct</td>
<td>Can</td>
<td>Both negative</td>
<td>Both negative</td>
<td>Pass/No</td>
<td>Pass/No</td>
</tr>
<tr>
<td>Reference assessment</td>
<td>MMSE</td>
<td>SPPB</td>
<td>MNA-SF</td>
<td>5-item GDS</td>
<td>Professionally trained community or nurse check-up</td>
<td>Comprehensive eye and vision examination / professional checkup</td>
</tr>
<tr>
<td>Threshold</td>
<td>&lt;27</td>
<td>&lt;10</td>
<td>&lt;12</td>
<td>≥ 2</td>
<td>&gt;35 dB</td>
<td>Not normal</td>
</tr>
<tr>
<td>Sensitivity (TP/TP+FN)</td>
<td>18.22% (41/225)</td>
<td>58.27% (317/544)</td>
<td>40.74% (44/108)</td>
<td>53.48% (46/86)</td>
<td>56.58% (189/334)</td>
<td>72.38% (734/1014)</td>
</tr>
<tr>
<td>Specificity (TN/TN+FP)</td>
<td>86.15% (1014/1177)</td>
<td>65.73% (564/858)</td>
<td>73.41% (950/1294)</td>
<td>73.25% (964/1316)</td>
<td>82.39% (880/1068)</td>
<td>42.01% (163/388)</td>
</tr>
<tr>
<td>Positive predictive value (TP/TP+FP)</td>
<td>20.09% (41/204)</td>
<td>51.88% (317/611)</td>
<td>11.34% (44/388)</td>
<td>11.55% (46/398)</td>
<td>50.13% (189/377)</td>
<td>76.53% (734/959)</td>
</tr>
<tr>
<td>Negative predictive value (TN/TN+FN)</td>
<td>84.64% (1014/1198)</td>
<td>71.03% (564/791)</td>
<td>93.68% (950/1014)</td>
<td>96.01% (964/1004)</td>
<td>85.85% (880/1025)</td>
<td>36.79% (163/443)</td>
</tr>
</tbody>
</table>

MMSE: Mini Mental State Examination (15), SPPB: Short Physical Performance Battery (14), MNA-SF: Mini Nutritional Assessment – Short Form (16), GDS: Geriatric Depression Scale (19), TP: true positive, FN: false negative, TN: true negative, FP: false positive.
Catalonia, Spain

This analysis was drawn from 207 older people (mean age 76.7 years; 81 males, 126 females) living in five rural and urban areas of Catalonia (20). To be recruited at primary care centres and outpatient clinics, participants had to:

- live in the community and be 70 years of age or older; and
- score at least 90 on the Barthel Index.

The assessments were completed by healthcare professionals from April to September 2021, with a follow-up evaluation in 2022. See Table 4 for these assessments and validity results.

The following were the concluding remarks about the performance of ICOPE Step 1:

- The tool performs reasonably well in detecting a decrease in cognitive capacity.
- It fairly performs against the standard diagnostic instruments, with modest sensitivity and good specificity for detecting declining IC in this sample of community-dwelling older people.
- A larger validation study in different countries should be conducted.

The team made the following suggestions to improve the performance of the instrument: (i) repeat the ICOPE screening every six months, (ii) screen out people with corrected vision, (iii) explore the sensitivity of the gait speed test if larger studies confirm a modest sensitivity for the chair rise test and (iv) add a question to the psychological domain from the five-item GDS (19).

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Table 4. Screening assessment tools in the Catalonia pilot, with validity data

<table>
<thead>
<tr>
<th>Domain of IC</th>
<th>Cognition</th>
<th>Mobility</th>
<th>Nutrition</th>
<th>Mood</th>
<th>Hearing</th>
<th>Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening tool</td>
<td>3 ICOPE questions: time, place, orientation and memory</td>
<td>Chair rise test 5 times ≤14s</td>
<td>2 ICOPE questions: unintentional weight loss, loss of appetite</td>
<td>2 ICOPE questions: negative emotions and no interest</td>
<td>Whisper test</td>
<td>Any eye problems</td>
</tr>
<tr>
<td>Screening negative</td>
<td>All correct</td>
<td>Can do it</td>
<td>Both negative</td>
<td>Both negative</td>
<td>Pass</td>
<td>No</td>
</tr>
<tr>
<td>Reference assessment</td>
<td>MMSE</td>
<td>SPPB</td>
<td>MNA-SF</td>
<td>5-item GDS</td>
<td>Hearing test audiogram (21)</td>
<td>Visual acuity &lt;6/60 in tumbling E chart</td>
</tr>
<tr>
<td>Threshold</td>
<td>&lt;24</td>
<td>&lt;10</td>
<td>&lt;12</td>
<td>≥2</td>
<td>&lt;6</td>
<td>Not normal</td>
</tr>
</tbody>
</table>

| Sensitivity (TP/TP+FN) | 88.89% (8/9) | 51.51% (51/99) | 44.12% (15/34) | 47.06% (16/34) | 45.19% (47/104) | 43.75% (14/32) |
| Specificity (TN/TN+FP) | 73.06% (141/193) | 95.28% (101/106) | 95.95% (166/173) | 95.96% (166/173) | 81% (81/100) | 68.21% (118/173) |
| PPV (TP/TP+FP) | 13.3% (8/60) | 91.07% (51/56) | 68.18% (15/22) | 32.65% (16/49) | 71.21% (47/66) | 20.29% (14/69) |
| NPV (TN/TN+FN) | 99.3% (141/142) | 67.8% (101/149) | 90.22% (166/184) | 88.39% (137/155) | 58.70% (81/138) | 86.76% (118/136) |

MMSE: Mini Mental State Examination (15), SPPB: Short Physical Performance Battery (24), MNA-SF: Mini Nutritional Assessment – Short Form (16), GDS: Geriatric Depression Scale (19), TP: true positive, FN: false negative, TN: true negative, FP: false positive, PPV: positive predictive value, NPV: negative predictive value.

---

8 The ICOPE handbook’s proposed question, which should be locally adapted appropriately, is: “Do you have any problems with your eyes?” (difficulties in seeing far, reading, eye diseases, or currently under medical treatment, e.g., for diabetes, high blood pressure)
Andorra’s health service agreed with the city council of Escaldes-Engordany to assess the IC of people aged 65 years and older. The mean age of the 269 participants (80 males, 189 females) in the study was 77 years. Participants were residents of the municipality and had been recruited at primary care centres and outpatient clinics. They had to score at least 90 on the Barthel Index.

The data were collected from February to May 2022 by nurses specialized in geriatrics (Table 5). The ICOPE Step 1 was electronically administered and Step 2 was completed to provide reference results on the same day.

The screening for limited mobility reported the highest validity in this study sample, with a sensitivity of 88% and a specificity of 96%. The poorest performance in sensitivity was observed for the screening of depressive symptoms. The team proposed adding the frequency of specific events to improve the detection and accuracy of possible mood abnormalities. Also, as suggested by the team in Spain, the vision question might be improved by considering only those people with acuity problems that have not been corrected with glasses.

### Table 5. Screening assessment tools in the Escaldes-Engordany pilot, with validity data

<table>
<thead>
<tr>
<th>Domain of IC</th>
<th>Cognition</th>
<th>Mobility</th>
<th>Nutrition</th>
<th>Mood</th>
<th>Hearing</th>
<th>Vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening tool</td>
<td>3 ICOPE questions: time, place, orientation and memory</td>
<td>Chair rise test 5 times ≤14s</td>
<td>2 ICOPE questions: unintentional weight loss, loss of appetite</td>
<td>2 ICOPE questions: negative emotions and no interest</td>
<td>Whisper test</td>
<td>Any eye problems</td>
</tr>
<tr>
<td>Screening negative</td>
<td>All correct</td>
<td>Can</td>
<td>Both negative</td>
<td>Both negative</td>
<td>Pass</td>
<td>No</td>
</tr>
<tr>
<td>Reference assessment</td>
<td>GPCOG</td>
<td>SPPB</td>
<td>MNA-SF</td>
<td>PHQ-9</td>
<td>Hearing test app (Audición test audiograma)</td>
<td>Snellen’s test</td>
</tr>
<tr>
<td>Threshold</td>
<td>&lt;9</td>
<td>&lt;10</td>
<td>&lt;12</td>
<td>≥ 5</td>
<td>&lt;25 dB</td>
<td>Not normal*</td>
</tr>
<tr>
<td>Sensitivity (TP/TP+FN)</td>
<td>70.9% (95/134)</td>
<td>88% (22/25)</td>
<td>59.26% (16/27)</td>
<td>28.95% (44/152)</td>
<td>64.40% (85/132)</td>
<td>50% (1/2)</td>
</tr>
<tr>
<td>Specificity (TN/TN+FP)</td>
<td>54.9% (73/133)</td>
<td>95.9% (234/244)</td>
<td>90.5% (219/242)</td>
<td>98.25% (112/114)</td>
<td>91.24% (125/137)</td>
<td>27.34% (73/267)</td>
</tr>
<tr>
<td>PPV (TP/TP+FP)</td>
<td>61.3% (95/155)</td>
<td>68.75% (22/32)</td>
<td>41.03% (16/39)</td>
<td>95.65% (44/46)</td>
<td>87.63% (85/97)</td>
<td>0.5% (1/195)</td>
</tr>
<tr>
<td>NPV (TN/TN+FN)</td>
<td>34.82% (39/112)</td>
<td>98.73% (234/237)</td>
<td>95.21% (219/230)</td>
<td>50.2% (112/233)</td>
<td>72.67% (125/172)</td>
<td>98.65% (73/74)</td>
</tr>
</tbody>
</table>

GPCOG: General Practitioner Assessment of Cognition (22), SPPB: Short Physical Performance Battery (14), MNA-SF: Mini Nutritional Assessment – Short Form (16), PHQ-9: Patient Health Questionnaire-9 (23), NPV: negative predictive value, PPV: positive predictive value, TP: true positive, FN: false negative, TN: true negative, FP: false positive.

*The letters on the Snellen’s chart are designed to be visible at a distance of 20 feet (or 6 metres) to a person with normal visual acuity, which is considered 20/20 vision. The threshold is a result of less than 20/20.
Discussion points

The piloting so far has documented relatively low sensitivity of the items composing the ICOPE Step 1 screening tool. Some discussions explored the reasons for these findings and proposed possible solutions. The most immediate example was related to the sensitivity of the vision impairment question, which should better consider possible correction with glasses. “Just the reframing of the question may actually help to pick up a lot more people, a lot more accurately,” as one participant put it among many agreeing.

Regarding the complexities of the other domains of IC, there was fruitful discussion to inform a detailed scientific understanding of these validation results and how to further refine piloting scale-up and implementation. An important concern in the validation of the ICOPE screening tool’s sensitivity was related to the identification of the so-called gold standards (i.e., reference assessment). How good are the available diagnostic instruments to date and what does the validation of ICOPE against these tell us?

The validation process for the ICOPE screening tool is designed to iterate comparisons between the conceptually novel approach provided by ICOPE (i.e., the promotion of integrated care to support the capacities for healthy ageing) while necessarily drawing on the existing assessment tools originally designed for different purposes.

Although the screening tool is based on validated instruments assessing specific capacities, its use in primary care and following a holistic approach is still limited. Indeed, to advance ICOPE implementation and dissemination, it has been necessary to build on the existing evidence and well-established tools, monitoring their responses to the specific needs and priorities that this innovative framework is presenting. It is also important to consider that the “main purpose of the ICOPE Step 1 is to make sure we do not go further with those who are not at risk and so limit the assessment to only those with a clear need”.

The high specificity of the ICOPE screening tool means that fewer cases of older people with declines in IC are missed. The balance also still needs to be struck in using the tools at Step 1 for simplicity of outreach – “at really low or even no cost, easily and quickly”. The observations that the Step 1 questions are not more detailed does not “really trouble us”, one expert said; otherwise, the increased effort for small gains in sensitivity might disrupt cost-effectiveness.

Other discussion points, on the contextual explanations for some of the quantitative results, included a mention of certain measurements being affected by pandemic restrictions, which led to self-screening, or evaluations conducted by a family member or a proxy. Also, there was discussion on the existence of a possible selection bias for some data sets due to the healthy status of participants, which may not be “fully representative of the overall health status of all older people”.

As the following action points emerging from these discussions show, more scientific studies supported by policy-making engagement and qualitative learning will continue to advance the answers for the validity of the ICOPE Step 1 screening tool.

Action points

Actions for the CCHA

- Further look at the ICOPE screening tools and the validity of their results (in particular, for sensitivity, specificity, positive predictive value, inter- and intra-assessor reliability, sensitivity to change, target population and optimal cut-off points in relationship to reference tests).
- Run more validation studies in different contexts, including low- and middle-income countries.
- Look for opportunities to engage stakeholders, including government officials, to support the further study and validation of ICOPE screening tools.
- Share examples and the lessons learned from considering different domains and tests in the ICOPE screening (e.g., oral health).

Actions for WHO

- Improve the ICOPE screening question for vision to better identify persons with unmet care needs by adding “with glasses if normally worn”.
- Explore the characteristics of the ICOPE screening tool as a whole, in particular to provide a global measure of IC, going beyond the monodimensional approach to the specific domains.
Panel 3.
Care pathways for urinary incontinence

The final panel on the first day presented the potential care pathways for preventing, diagnosing and managing UI in older people. Given the relevance of the condition in terms of prevalence, its influence on all the domains of IC and the burden on individuals and society, it was important for the CCHA to consider whether a specific care pathway can be developed and become part of the integrated care approach.

Urinary incontinence

UI – the involuntary loss of urine – can affect people of any age, but it is more common in older people, especially women and can often be bothersome and burdensome (24,25). Even though it can also become a disabling condition that affects older people in both community and institutional settings, it is an under recognized and underreported issue – including because of the stigma and taboo attached to it.

There are a number of subtypes of UI:
- urgency incontinence – uncontrolled urine leakage; most common in older people;
- stress incontinence – due to abrupt increases in intra-abdominal pressure (e.g., coughing, lifting); associated with obesity;
- mixed incontinence – a combination of stress and urgency incontinence.

People can also be affected by overflow incontinence (leakage from a full bladder, which can especially affect men) and functional incontinence. The latter is a disability-associated, multifactorial condition due to cognitive and/or physical impairments or comorbidities.

The ICOPE guidelines of 2017 (26) recognized the importance of UI (see Box 1, ‘Urinary incontinence care’). It can represent the consequence of a declining capacity (e.g., limited mobility, cognitive decline or reduced vitality) as well as be the trigger of a declining trajectory of health (e.g., a decline caused by the psychological issues complicating UI).

Box 1. Urinary incontinence care

The WHO evidence-based guidelines to manage declines in IC (2017) include two recommendations on UI care:
- **Prompted voiding** for the management of UI can be offered for older people with cognitive impairment.
  - recommendation 7
- **Pelvic floor muscle training**, alone or combined with bladder control strategies and self-monitoring, should be recommended for older women with UI (urge, stress or mixed).
  - recommendation 8

**Assessment and diagnosis**

The guidelines drew from the available evidence for interventions against UI, but it was not within the scope to look at care pathways. The work to formulate
the final guideline recommendations, however, produced a number of considerations, including the following (26).

- UI in older people is multifactorial and needs evaluation and treatment not focused solely on the lower urinary tract.
- Although non-specialized healthcare workers can assess UI, a referral to specialists (e.g., geriatrician, urologist) might be needed for the full assessment because of its multifactorial nature.
- A full assessment includes:
  - fluid intake
  - medications
  - mobility and cognitive capacity
  - previous urological surgeries
  - stool impaction
  - reversible causes of UI (e.g., delirium, infections, atrophic vaginitis, pharmaceutical causes, psychological disorders, hyperglycaemia).

In weighing up the evidence, the following diagnostic questions are currently proposed in the ICOPE guidelines.

- The single best question to ask when diagnosing urgency UI is: “Do you have a strong and sudden urgency to void that makes you leak before reaching the toilet?”
- A good question to ask when diagnosing stress UI is: “Is your incontinence caused by coughing, sneezing, lifting, walking or running?”

The feasibility of pelvic floor muscle training might be affected by cognitive impairment, challenging implementation of this intervention for some older people.

A Cochrane systematic review published in 2022 supports these two statements with a high level of certainty about the evidence of effectiveness, especially for the most intensive forms of these conservative treatments (such as the combination of pelvic floor muscle training and bladder training, compared with bladder training alone). Treatment to include pelvic floor muscle training, this Cochrane review concludes, can cure symptoms and improve the quality of life in all three main subtypes of UI (27).

Care pathways for UI

Case-finding questions

The second presentation on UI focused on potential options for a specific UI care pathway within ICOPE. It began by making a point about the language given to describe any recommended initial question(s) to assess UI. For example, these questions can be clarified as not being part of a “screening” tool for population screening. They might be merged into a more straightforward case-finding question, such as:

- “Do you have any problems with your bladder control that bother you, such as accidental leakage of urine?”

The presenter showed that there are around 15 such initial questions available for picking up cases of UI, with varying levels of validation (28,29).

Assessment

Define the subtype of incontinence

Once the answer is yes to the case-finding question, there are then more than 40 questionnaires, some with a high grade of validation (30,31), that are designed to explore the symptoms and the degree of bother.

While there is a lot of research evidence for how to explore symptoms in women, there is a lack of it for men and – again on the question of language – the presenter made a note about how the terms used are understood (and misunderstood) by people being asked about their continence (see Box 2, Talking about incontinence).
WHO clinical consortium on healthy ageing 2022

Reversible contributors to UI

The presentation highlighted the presence of several reversible contributors to UI, such as those behind the acronym DIPPERS (i.e., Delirium, Infection [acute cystitis], Pharmaceuticals, Psychological, Excess urine output, Reduced mobility, Stool impaction and loading). There was also a reminder to avoid the treatment of asymptomatic bacteriuria and that the genitourinary syndrome of menopause is not a cause of UI.

Conditions associated with worsening UI

A range of conditions is associated with worsening UI (e.g., diabetes, obesity, dementia, normal pressure hydrocephalus, cerebrovascular disease, Parkinson’s disease). UI has rarely been used as a primary outcome of treatment for specific diseases (i.e., limited information on how treating the underlying or associated conditions improves continence). However, some data are available for treating the UI itself in specific diseases. Some medications might exacerbate UI and medications should be reviewed as a potentially reversible cause of UI. Moreover, polypharmacy (i.e., the simultaneous use of five or more medications by persons for their condition [28,29], potentially due to concurrent frailty and/or multimorbidity, represents an additional (reversible) cause of UI to consider carefully.

Clinical examination

The part of the presentation on assessment continued with the examinations and tests for men and women with UI. That includes rectal examination, urinalysis (where possible), abdominal examination for palpable bladder, external genitalia and incontinence-associated dermatitis.

Management

On treatment, in addition to the pelvic floor muscle training and bladder training that are recommended for all adults, considerations and evidence were presented on normalizing fluid balance, preventing constipation, promotion of weight loss where relevant, maintenance or improvement of mobility (27,32,33,34), environmental modifications for access to the toilets, as well as the option of aids (e.g., containment products, sanitary pads) in case of need.

The last part of the overview focused on presenting the medical management of UI as part of a complete care pathway, introducing trials of drug treatments, citing failures to respond to management and discussing ‘red flags’ indicating the need for specialist care.

Box 2. Talking about incontinence

The terms “urgency” and “stress” used for types of UI may be misunderstood by non-English speakers. (Such concerns are one of the reasons why WHO encourages local implementers to use its guidance and tools with local adaptation.)

At the level of care, with respect to talking in terms that people can easily understand – especially when they are in the often vulnerable position of needing healthcare – care pathways and health and care workers need to be able to respond in a person-centred way.

The plenary discussion about UI and its care pathways to reach people with the condition also brought up the related problems of the taboo and stigma surrounding UI as a topic prone to euphemism.

Participants considered how marketing by the hygiene/sanitary industry in many settings might be influencing the way people experiencing UI view this condition – and may be influencing their health-seeking behaviours. One participant suggested the sector could be engaged in an effort to improve the attitudes and reduce the stigma towards UI.
Discussion points

Many participants contributed the inputs responding to the many opportunities and complexities of both developing a care pathway for UI and mapping it into the ICOPE approach. These were documented and will help to inform the activities of a working group on UI to be formed within the CCHA.

A strong theme of discussion emerged from many participants concerning language, classification and terminology and the populations targeted for UI care. All the concerns were related to the understanding of how older people with UI can be reached and how those who are reached are adequately assessed and managed. The presentation highlighted, for example, how UI is well served in women but less so in men. Similarly, sex-specific differences might require adaptations in the care pathway. There were inputs about the semantics used for the different types of UI and how to ask about the symptoms and when and how to go into a more detailed clinical assessment. For some coverage of the points raised about taboo, stigma and euphemism (35,36), see Box 2, ‘Talking about incontinence’. Further, the discussion raised the important related issue of the social isolation associated with UI.

Assuming the case-finding question for the start of a care pathway is used as effectively as possible for the older people targeted, how many nonetheless would be missed by this Step 1? And how many of them might have been picked up by the same question if only asked during the assessment (i.e., Step 2) for impairments in other domains? There may be a high prevalence of symptoms, but many people do not consider them bothersome enough to seek healthcare. Some people may answer at Step 1: “Yes, I do have a bladder symptom, but I do not want an assessment.” Those actively seeking healthcare might typically fall into Step 2 of the pathway by virtue of their self-selection and more specific questions would have to be used. Finally, delays in seeking medical help for UI are commonly reported, especially in women (37,38).

The feasibility of implementing a developed UI care pathway was also raised in this discussion about Step 1 versus Step 2. A small, “pre-pilot” study was suggested for the implementation work – to check whether people “really don’t mind adding another screening question that goes into UI-related issues”. The study should also explore if the existing screening step and the present pathways can “already help us to include anyone that may have UI issues” for conducting a person-centred assessment and developing a personalized care plan.

Another participant added that the ICOPE approach was designed to detect declines in IC in the community and enable people to be comprehensively assessed in a primary care setting.

There was clearly much discussion and refinement to follow on the questions of a care pathway for UI – to be addressed by the CCHA working group, including finding the options for a UI care pathway that would be used in lower resource settings.

The participants raised points about other issues relevant to urological conditions, particularly dehydration and urinary tract infections. On the latter, the issue of avoidable hospital admissions was mentioned. In the presentation about the clinical management of UI, the overtreatment of asymptomatic bacteriuria and the overuse of antibiotics were also addressed. Another participant added that a “poorly thought out” bias towards diagnosing urinary tract infections in older people was leading to “huge misdiagnosis and over-prescription of antibiotics” and complications. On dehydration, it was also stressed how clinically meaningful this condition is in older people.

Action points

**Actions for the CCHA**

- Engage in a CCHA working group on UI.
- Pilot the feasibility of care pathways for older people with UI in the primary care setting.

**Actions for WHO**

- Support the engagement of CCHA participants in a working group on UI.
- Draft possible UI care pathways to be shared with CCHA participants.
- Consider engaging different stakeholders to raise awareness about UI and address related issues (e.g., stigma and social isolation).
Panel 4.
Advancing the measurement of intrinsic capacity

When a picture speaks a thousand words, Figure 2 does this with the goal of being able to measure IC. If powerful, robust, reliable sets of data to implement and monitor healthy ageing through IC can be put into operation for individuals and populations, the trajectories of health will be visible and potentially intervenable.

**Figure 2.** Monitoring change within and between individuals over time. An illustrative graphic of how large data sets might look.

Systematic reviews on the measurement of intrinsic capacity

The first presentation was about a set of systematic reviews that answer the question: “What are the measurement gaps for IC?” In particular, the following points were addressed:

- conceptual and operational definitions of the IC domains
  - these are yet to be developed for each domain;
- standard set of assessment tools for monitoring IC
  - as valid, reliable and responsive measures are yet to be determined;
- appropriate measurement model
  - consensus is needed on the reflective versus the formative measurement models for developing composite scores.

Thanks to the invaluable partnership, expertise and effort from four teams of collaborators, reviews are in progress on: (i) measures of locomotor capacity (a systematic review), (ii) measures of vitality capacity (systematic reviews), (iii) measures of psychological capacity (a systematic review) and (iv) measures of cognitive capacity (a review).
The following are examples of the instruments and biomarkers for potential use in the measurement of IC.

- **Cognitive capacity** – orientation tests, object naming tests, 10-word Recall (immediate and delayed) (39), Animal Naming (40), counting backwards tests, Symbol Digit Substitution (41), digit span, logical memory (immediate and delayed) (42), following instructions, Raven’s matrices (43), CERAD (The Consortium to Establish a Registry for Alzheimer’s Disease) praxis (44).

- **Psychological capacity** – Brief Resilience Scale (45), Sense of Coherence scale/ Orientation to Life Questionnaire (46,47), Herth Hope Index (48), mindfulness scales (49), Optimism scale (50), Valuation of Life (51), Emotional Regulation (52), mood scales (under discussion).

- **Vitality capacity** – self-perceived fatigue instruments, hand grip strength, forced expiratory volumes, immune function (biomarkers/questionnaires), body composition.

- **Locomotor capacity** – Four-Square Step Test (53), Tandem Gait (54), One leg standing (55), 30-second sit-to-stand muscle power test (56), 6-minute walk test (57).

- **Sensory capacity** – self-reported questionnaires, audiometry tests, near and distant vision tests.

The systematic literature reviews aimed to identify the available tools (including but not limited to those listed above) that were validated in older people for specific domains of IC and to assess the measurement properties of these tools, according to the COSMIN guideline (58).

The CCHA meeting enjoyed presentations on behalf of two WHO working groups, about locomotor capacity and vitality.

**Locomotor capacity**

The working group on locomotor capacity formulated a provisional or working definition of this domain: “A state (static or dynamic over time) of the musculoskeletal system that encompasses endurance, balance, muscle strength, muscle function, muscle power and a joint function of the body.” Learn more about this in the open-access publication of an editorial by the working group that appeared in *Aging Clinical and Experimental Research* in early 2022 (59).

Pertaining to the next steps after the first meeting of this working group, a systematic literature review of measures of locomotor capacity was to be undertaken with the objective of identifying all the available tools that were validated to measure the specific attributes of locomotor capacity in older people and to assess the measurement properties of these tools. The outcomes of this systematic review are expected to help develop conceptual and operational definitions of locomotor capacity in older people. Further meetings of the locomotor capacity working group are planned to elaborate these definitions.

**Vitality**

A working definition of vitality capacity was agreed by the specific working group: “A physiological state (due to normal or accelerated biological ageing processes) resulting from the interaction between multiple physiological systems, reflected in (the level of) energy and metabolism, neuromuscular function and immune and stress response functions of the body” (60).

The next step for this working group is to produce a literature review of the potential biomarkers based on a shortlist and develop an operational definition of vitality capacity.

**Discussion points**

- The discussion started with clarifying the measures of IC, to answer a couple of common queries. What is a good measure at the population and the individual levels in terms of clinical meaningfulness? How can systematic reviews inform this? The experts doing the reviews answered that they would be examining the measurement properties of all the available tools for specific IC domains that were validated in older people. Then, extracted/retrieved data would help know which studies have looked at the measurement properties of tools at the population versus the individual levels, with the aim of identifying the most useful tools for population-based surveys and clinical purposes. The data will probably present different levels of quality of evidence, but the WHO evidence-to-recommendations framework will allow an overall judgement to be structured.

- One of the most important aims of the systematic review is to review the measurement properties of existing tools to assess the IC of older persons and understand the best way to detect changes. Again, this should be at the population level of monitoring IC trajectories but also at the individual one. Another point was that community-based measures are likely more
relevant than some specialist-care tools, which may experience a ceiling effect when applied to the general population.

About the position of vitality within IC, a discussion was given in the previous CCHA meeting in 2021. (See the relevant sections on validating IC and examining its biomarkers in the 2021 meeting report.9) In terms of the continuing work in 2022, to advance the measurement of IC, the question of vitality continues to be informative. It is not an easy one to answer, though, confirmed the chair – yet one of the systematic review teams did expand. Conceptually, the measurement model proposed in 2018 considered vitality capacity to be at an equivalent level with the other domains. “Theoretically,” however, “we are trying to see where vitality may be an underlying, background, biological process.” Vitality “may be capturing all the biological processes that older people experience”, but this theoretical model has yet to be demonstrated with real data. The work over the coming year would test whether there is a hierarchy among the domains of IC and how they may causally relate to one another. For this, analyses of longitudinal data are needed. Further studies should answer the question: “Is vitality a determinant of the other domains in the model of IC, or is it just interacting at the same level?”

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9 Pages 10–20: https://www.who.int/publications/i/item/9789240055254.

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**Action points**

**Actions for the CCHA**

- Engage in a pilot study on the validation of evidence-based measures of IC, for monitoring changes within and among individuals over time (e.g., in a community or clinical setting).

**Actions for WHO**

- Draft evidence-based recommendations on valid, reliable and responsive measures to monitor IC (with the support of the WHO TAG4MHA).
- Start developing guidance for a testing measurement model for IC for use in clinical practice.
The goal of healthy ageing is to maintain functional ability – the health-related attributes that enable people to be and to do what they have reason to value (61). Functional ability results from the combination and interaction of the individual’s IC with the environment.

Recent annual meetings of the CCHA have focused on IC as the core of healthy ageing. Developing a scientific, clinical, operational and public health understanding of IC is central – and the CCHA has been contributing much of the evidence (26,62–68). But Panel 5 now turned to the validation of functional ability – to ensure it can be measured reliably and validly to monitor achievements in healthy ageing. Validated measures of functional ability also need to capture environmental interactions and determinants.

Systematic reviews on the measurement of functional ability

Five domains of functional ability were identified when the construct was introduced (61):

1. Ability to meet basic needs
2. Ability to learn, grow and make decisions
3. Ability to be mobile
4. Ability to build and maintain relationships
5. Ability to contribute.

But what are the instruments to measure these abilities and which are their psychometric properties? These questions will be answered by a number of systematic reviews. Several academic teams around the world have offered to contribute to this task. They are conducting systematic reviews of the measurement properties of tools to assess each of the five domains of functional ability proposed by WHO. Some very preliminary findings were shared with the CCHA in 2022. In general, functional ability is a relatively new concept and no instrument is currently available for measuring each of the five domains as defined. Nevertheless, different validated scales and questionnaires may support its assessment or the measurement of its specific domains. Furthermore, not all the available (partial) instruments have been fully assessed for their psychometric properties. Finally, the potential conceptual ambiguity in the wording of the WHO definition of functional ability was highlighted, especially in the use of the "ability" term (e.g., referring to “ability to do if the person wants”, “ability to actually do”, or “ability to do as judged by others”). The completed systematic reviews are set to be submitted for publication in 2023 in a special issue of *Age and Ageing* on the measurement of healthy ageing.

Validation studies on functional ability

**Longitudinal data on functional ability: Japan**

This presentation first contextualized previous work to take advantage of cross-sectional data. Then it described results from a longitudinal study aimed to investigate the predictive validity of functional ability against healthy ageing/well-being.

The data were from the Japan Gerontological Evaluation Study, a collaborative initiative involving nearly 40 municipalities across the country to investigate the living conditions of around 300 000 adults aged 65 and over.10 The analysis looked at self-reported data relevant to functional ability collected in over 35 000 participants. This retrospective longitudinal analysis is based on data describing:

- functional ability in 2016; and
- two measures of well-being collected in 2019 (i.e., happiness, as a continuous variable and subjective health, as dichotomous one).

10 More on the study at https://www.jages.net/About-Jages.
The analysis relied on the variables available in the database, which only allowed the measurement of three domains of functional ability. The first domain aligned conceptually with the ability “to build and maintain relationships”; the second combined the ability “to meet basic needs” with that “to move around” and the third one was a combination of the abilities “to learn, grow and make decisions” and “to contribute”.

The study concluded that all three domains predicted happiness and subjective health after three years of follow-up, supporting the hypothesis that functional ability is critical for healthy ageing (Table 6).

Along with further data shared with the CCHA, a couple of limitations were noted, such as the non-generalizable predictive capacity of the measure for people with severely reduced function (they were not included in the study).

Reported personal concerns related to functional ability: preliminary results from six countries

A research network that spans 25 countries with around 35 centres has been using a tool to ask people about their personal concerns. What are the major concerns and priorities related to the functional ability for the person?

The preliminary findings presented to the CCHA come from the use of the digital tool in a subgroup of older people living in six countries (Australia, Canada, India, Malaysia, Pakistan and the United Kingdom) with different resources and sociocultural backgrounds. A possible 56 items of concern were investigated in a sample of 604 people (males 230, females 374), who had a mean age of around 71 years (males 71.7, females 70.6).

Some items relate to IADLs. As seen in Table 7, of notable high prevalence was the reported level of loneliness. The presenter described this finding as “very common with all the projects conducted with this tool and its predecessors” over three decades. One of the fundamental concerns that older people reported was not wanting to be a burden to their families and closest ones. Finally, two items from the study may relate to functional ability but might not be picked up in its current construct: lack of sleep and bodily pain.

This study also offers data for the prevalence of what might be considered for screening purposes in the ICOPE approach and potentially triggering further assessment. The presenter said this resonated with the discussion in Panel 2 (see page 9) about the need for more work on sensitivity, specificity and positive predictive values. The presentation rounded off by referring to the concept of the five domains of functional ability proposed by WHO and the CCHA, saying that the construct is important for its relevance to older people “being able to do the things that give their life purpose and meaning”.

Table 6. Associations with happiness and subjective health for functional ability

<table>
<thead>
<tr>
<th></th>
<th>Happiness (rated on a scale 0–10; 2016 data)</th>
<th>Good subjective health (versus not good; 2019 data)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>β (95% CI)</td>
<td>Relative risk (95% CI)</td>
</tr>
<tr>
<td>Ability to build and maintain relationships</td>
<td>0.05 (0.04–0.06)</td>
<td>1.03 (1.02–1.04)</td>
</tr>
<tr>
<td>Ability to meet basic needs and ability to move around</td>
<td>0.05 (0.04–0.06)</td>
<td>1.05 (1.03–1.06)</td>
</tr>
<tr>
<td>Ability to learn, grow and make decisions and ability to contribute</td>
<td>0.07 (0.05–0.08)</td>
<td>1.03 (1.03–1.04)</td>
</tr>
</tbody>
</table>

CI: confidence interval
β: regression coefficient. Both multiple linear regression and modified Poisson regression models were adjusted for potential confounders in 2013, namely gender, age, education, equivalized income, comorbidities, marital status, living status, functional ability score and well-being

Source: Courtesy of Naoki Kondo and colleagues

11 See https://agecaretechnologies.org/international-research-network.
12 See page 21.
In the domains of functional ability, how could the values of “contribution” and “purpose” in people's lives be included? How could our need to be acknowledged, for who we are and what we do, fit well? Might this need be represented, for example, in the domain of “ability to learn and grow and make decisions”? Such questions raised conceptual conundrums for the CCHA, with some participants presenting a contrary argument. The discussion asked if there would be more value instead in achieving the goal of healthy ageing in a less multifactorial way than to include all the presently proposed domains and even to refine new ones. Could functional ability be understood, one question asked, by using a unitary construct rather than breaking it down into different domains?

Whichever direction between the two approaches is taken, it is “easier said than done”, participants admitted. It is an “empirical question”, perhaps, said another and it may be that the five domains used to structure the review of the measures of functional ability would “cluster” around each other in ways that make the task of summing up the overarching idea of functional ability easier anyway. Finally, another participant asked to what extent functional ability is so different from scales assessing the capacity to perform ADLs and IADLs. In particular, it could be important to clarify the level of novelty of the construct of functional ability compared with some of the standards already used in clinical practice. This question was addressed by explaining that functional ability is designed to cover the second half of life, whereas ADLs and IADLs are substantially related to clinical manifestations occurring during the very last phase of life. The five domains constituting the functional ability construct were derived from the literature on specifically asking older people what was relevant for them. Given that there was an absence of this literature specifying functional ability, though, relying on it could mean the decisions about the domains of functional ability might have been imperfect and may need further work. To advance the field, however, there has been the need to describe how the construct was formed.

Discussion points

In the domains of functional ability, how could the values of “contribution” and “purpose” in people's lives be included? How could our need to be acknowledged, for who we are and what we do, fit well? Might this need be represented, for example, in the domain of “ability to learn and grow and make decisions”? Such questions raised conceptual conundrums for the CCHA, with some participants presenting a contrary argument. The discussion asked if there would be more value instead in achieving the goal of healthy ageing in a less multifactorial way than to include all the presently proposed domains and even to refine new ones. Could functional ability be understood, one question asked, by using a unitary construct rather than breaking it down into different domains?

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Finally, the circle of making leading academic efforts to define new concepts such as functional ability might have started out with a simple term – and it may be well suited to a powerful conceptual framework – but with points of departure into less than perfectly defined domains. But that simplicity of an overall concept can survive as one that continues to prove easy to use after also now being supported by a robust effort to uncover some of the relevant and useful domains and measures. This conceptually complex work is beginning in earnest, scientifically, through the use of systematic reviews.

The “simplest way to go” though, another argument says, could be to decide that, because functional ability is still a novel concept – but one that has become integral to the healthy ageing agenda – experts and researchers should build and validate a new instrument to meet it. It may be that a systematic review of the functional ability to meet basic needs finds very limited results, given the relative novelty of the construct. “Should you go back to the definition of functional ability and redefine the instruments such as ADLs and IADLs – or should you simply start to build and validate a new instrument? What are the things that are really crucial to understand?” This suppositional argument then concluded with the suggestion that, if this last
question should be investigated, “then we have to construct a new instrument that will actually measure functional ability”.

In wrapping up this impassioned discussion, which needed to take place within the limited available time, another participant agreed that it would be nice to have one simple question about functional ability, but the different domains are still important. This echoes the development of the earlier concept known as the capability approach. The functions that people need for capability “depend on the individual person’s life”, the participant said and depend on the overall structure of the most relevant domains as a whole. Another agreed strongly with these points and, in doing so, appeared to appreciate them as a good way to sum up the whole framework of this CCHA discussion – to focus on holistic, integrated approaches to improve and transform existing health, medical and care models.

Action points

Actions for the CCHA

- Engage in a pilot study to validate a questionnaire for measuring functional ability (e.g., in a community or clinical setting).
- Further research on the relationships and interactions between IC, functional ability and environment.
- Further research on the role of ADLs and IADLs in quality of life within the functional ability’s construct.

Actions for WHO

- Further define the domains of functional ability – to also progress in the identification of the optimal instruments for measuring them as practical, concrete outcomes.
- Validate the operational definitions of the domains of functional ability across countries and settings, especially by using longitudinal data.
- Start developing guidance for a measurement model for functional ability.

13 The capability approach – first developed in the 1980s by Amartya Sen (69) – also underpins the regular reports on human development by the United Nations Development Programme (70).
Enjoying healthy ageing should not be a luxury but a human right. The choice to invest in a healthier trajectory into later life improves the quality on offer and lifts the level of contribution made by everyone in our ageing populations. The following demographic reality is clear (71).

- All countries face major challenges to ensure that their health and social systems are ready to make the most of the demographic shift.
- In 2050, 80% of older people will be living in low- and middle-income countries.
- In 2020, the number of people aged 60 and older outnumbered children younger than 5 years.
- Between 2015 and 2050, the proportion of the world’s population over 60 will nearly double from 12% to 22%.

Healthy ageing for a healthy economy

In the final panel of the 2022 CCHA meeting, there was first a presentation about the importance of healthy ageing for a robust and vibrant economy. This was a brief although comprehensive overview of the wide-ranging global issues in the “what, so what and now what?” of ageing populations viewed through an economic lens. In short, it covered the facts of the “force” of population ageing, the social, health and economic challenges of it and “the options we have to address these myriad challenges”.

The questions of “now what?” and the options available are of particular interest to the CCHA as well as to WHO and its partners, including other United Nations agencies. The answers in the presentation started with the point that “attainable goals for demographic preparedness could enable us to go beyond simply adding more years to life, also to add more life to years”. A key strategy to do this is to ensure labour and capital markets function well and realize people’s productive potential, equipping them with “the human and physical capital and opportunities to be life-long productive members of society”.

One major policy solution, the presenter said, involves allowing more choice regarding the ages for retirement and pension eligibility. The heterogeneity in the needs and capacities of same-aged older people means that “age is not monolithic” – and this should inform efforts to build choice into retirement decisions. To promote greater labour participation, productivity and income, more investment should be made in human capital – “through education and training and, of course, health”. Schools, communities, workplaces, health systems and governments could, for example, provide incentives and safe spaces for promoting physical activity.

The presentation concluded with an inspiring note about the technological innovations that are also holding “exciting potential for addressing the challenges of population ageing”. Safe and effective vaccines, wearable health monitoring, assistive robots and interoperable electronic medical records are just some examples. Finally, the ability to use more and higher-quality population-level data should also help us “to better understand the experience of ageing and develop policies to improve it”.

These compelling arguments had been invited to outline for the CCHA the strong case for investment in healthy ageing. This set the tone for the presentations and discussions to reflect on and respond to the efforts needed to confirm this societal investment case for integrated care while generating the health economic evidence to make it happen at the level of health service delivery. The keynote contribution also inspired much exchange in the discussion points below.

Methodologies to assess the economics of ICOPE

At the level of empirical health economics to add weight to the higher investment case for healthy
ageing and the ICOPE approach, two presentations revealed the potential for a wealth of findings.

**Cambodia**

This presentation outlined the unique demographics and health economy in Cambodia, as a lower middle-income country. On the demographics, the presenter showed that the country presently has a young population, with just 8.9% of people aged 60 years or above (1.38 million). This is set to shift around the mid-2030s, when the shape of the population pyramid will be much less skewed by the presently large proportion aged 30 and under and will move to a higher median age and more people in the older age groups (72).

A special need to prepare for healthy ageing

The presenter reported that the government “is really on the front foot” in seeing how to prepare for this demographic shift. It is looking at how to invest in health and education to reap the present demographic dividend, but also preparing for the ageing population of the future by “stressing continued participation, opportunities and the life-course approach”.

Added to the rapidly growing older population is a uniquely large ratio of women to men in Cambodia as a result of the recent history of conflict in the country. There are a lot of older female single households that are particularly vulnerable in Cambodia. Partly because of this, there are social and health protection schemes and health financing instruments in the country being extended over the next two or three years to older people as one of the particularly vulnerable groups (72).

The Health Equity Fund covers the estimated fifth of the overall population with the greatest financial vulnerability and this also applies to older people living with very low incomes. Yet, this protection covers healthcare in the public sector only and two-thirds of health visits are in the private sector. Cambodia also has the highest out-of-pocket cost percentage in the Western Pacific region and “quite a number of households – around 18% – are experiencing catastrophic costs”.

**New national health strategy is an opportunity to transform care and gather economic evidence**

Added to the demographics and the healthcare finance structure in the country, the model of healthcare has been centred on a facility-based and disease-focused approach – as it has across the globe. The healthy ageing agenda led by WHO to steer such models towards integrated primary healthcare based on a life-course approach aims to shift such a focus globally. In the case of Cambodia, the Minimum Package of Activities for primary healthcare has been focused on public healthcare centres. Community outreach, perceived as a high-cost activity, occurs only for priorities (such as tuberculosis active case-finding and maternal child health). Moreover, the CCHA participants learned, “there is no focus on older populations in the care package delivered” with very little integration of services.

Now and “very much driven by the preventive medicine department of the Ministry of Health in Cambodia”, the pilot of the ICOPE approach is being started. The WHO country team is partnering with the ministry on a review of both the primary and secondary healthcare packages and policy-makers are keen to support restructuring along the life-course and continuum-of-care approach. “There’s a lot of buy-ins”, the presenter said, at a time of great focus on integrated care as a core part of the next national health strategic plan being developed.

In the promising yet challenging context for Cambodia, this favourable enabling environment has presented an opportunity to gain lessons from a lower middle-income country about the value and economics of implementing ICOPE.

With WHO support, the pilot has started rolling out in 2022, with the tools translated into Khmer. The capacity-building of healthcare workers is being prioritized to pilot ICOPE. The training of trainers on the ICOPE approach, including for oral health (see Box 3), has been conducted. This targeted healthcare professionals in the three provinces of Kampong Cham, Kampong Speu and Kampot in 2022.
ICOPE pilot with economic analysis to guide scale-up

As a part of the ICOPE pilot in Cambodia, a comparative analysis of the cost-efficiency and equity is proposed in three provinces (i.e., Kampong Cham, Kampong Speu and Kampot). Initially, it focuses on people presenting at health centres. Among the next steps are to adapt further the care pathways to the local context (nationally, but also to rural and single households) and to see engagement across sectors, or with key civil society organizations working with older people or their associations. A monitoring and evaluation framework for the ICOPE implementation programme is also to be developed. Some of the learning points to date include whether national-level hospital specialists in the field are appropriate for training people at health centres.

The economic results will come from a natural experiment because of the timing before and after ICOPE financing incentives and the widened health equity fund coverage. A three-arm implementation analysis will also yield data, by examining:

- the current standard approach
  - health centre training only – a passive approach where ICOPE care pathways are used only if and when an older person presents to a health centre
  - this is likely to give the lowest cost but also the lowest coverage – and by far the lowest equitable coverage
  - it may yield a seemingly high proportion of people receiving ICOPE, but this would be a percentage only of those people presenting
  - it would potentially give the lowest number overall for people receiving and enacting a care plan they need;
- health centre plus outreach
  - based on the screening of older people by health centre staff with some help from the Volunteer Health Support Group (on
mobilization, awareness, etc., but not with the screening itself);
• training and support to community health workers (in the Volunteer Health Support Group)
  – to deliver the screening in the home for older people and refer them to the health centre for a care plan.

Key outcomes relevant to the older population include:

• service coverage of older people (% of older population);
• the reach to households (as a percentage of all coverage) of single older women;
• the cost per older person reached with ICOPE screening and whole care pathways, including follow-up.

The CCHA heard about an array of other insights to be gained from the work. The evidence to be generated, the learning shared and the example of policy-making engagement in a lower middle-income country should all help with understanding the enabling environments, constraints and enablers along with the policy evidence for ways to get ICOPE scaled up in similar settings.

France

The Ministry of Health in France is supporting the scale-up of the ICOPE pilot in five regions, targeting 50,000 persons aged 60 years and older and providing three years of follow-up (77).

This presentation shared some details of the methodology for a health economic analysis with a multicentre, randomized, open-label, controlled study of ICOPE implementation. It will involve 1,000 people 70 years and over, living independently in the community with at least one impairment detected at ICOPE Step 1. Participants are randomized to usual primary care (led by general physicians) versus the ICOPE assessment and personalized care plan. Four annual visits (baseline, 12, 24 and 36 months) are planned. The study design also includes an additional 24-month extension phase during which all participants (both usual care and ICOPE intervention arms) will receive the ICOPE intervention, according to the presented declines in IC.

As well as generating evidence of the effectiveness of the ICOPE approach as a personalized preventive and care plan, the study will include the health economic analysis to assess:

• direct medical and non-medical costs and informal care costs;
• cost-effectiveness – incremental ratio in cost per number of persons gaining a lower risk of decline in IC at 3 and 5 years;
• cost utility – cost per Quality-Adjusted Life Year, with data collected at the 3- and 5-year time points;
• any effect of socioeconomic status on these three outcomes.

Discussion points

The plenary discussion on the economic aspect of ICOPE kicked off with a question from the chair. “Have we anticipated what to do if the research to establish the economic evidence is not persuasive enough for the wider support needed to implement and deliver ICOPE?" As ICOPE interventions are evidence-based, providing ICOPE is, they said, “common sense and good care”. Yet, planning an impact study can still risk a negative result – because of the complexity of ensuring, for example, that the control group is truly controlled and the limited capacity to blind the study arms. It is difficult to predict, for instance, if there will be a change in the behaviour of the participants in the control arm. ICOPE, by definition, integrates a wide net of health and social care while aiming to offer some simplicity and efficacy in the improvement of a complex set of clinical and social domains. The health economic benefit may be hard to prove on this level.

Among the points raised in response, one participant said such research still had to be done, but it must “really prove the cost-effectiveness and the cost-utility of ICOPE”. The risk of failing to find the health economic benefits could be minimized by “really measuring all the factors that create cost” when comparing the potential return on investing in ICOPE versus no integrated care being delivered. The economic research needs a “holistic assessment of direct and indirect healthcare”, including using proxies of the costs and evaluating the roles of supported helpers or volunteers for community delivery. The societal and opportunity costs of family caregiving, in the absence of ICOPE implementation to help to reduce this burden, could also be examples to weigh up in making the investment case.
A meeting participant working in a low-income country said that, for settings with few resources, the question of whether ICOPE is cost-effective is much less relevant. Here, delivering any care for older people – “who are a particularly vulnerable group benefiting from some attention from the government” – is a necessity.

It is not possible to identify a unique standard of care for older people to use as a reference in the evaluation of ICOPE cost-efficiency. Instead, the question can be about how cost-efficiently ICOPE can be delivered, rather than how cost-effectively. This starts with the assumption, from the compelling evidence to date, that ICOPE “is a good thing” – but how do we get more people covered and what are some of the facilitating or constraining factors?

Keying into the heterogeneity among different national levels of economic development and the fact that individual countries have distinct health economies, a participant cited the example of his high-income setting. Part of the problem illustrated in the country is a reliance on expensive hospital care for older people who cannot be discharged to the community because of a lack of capacity. So, it is not only about convincing policy-makers to spend more money to introduce integrated care for older people. Instead, it is more about showing how to allocate present budgets differently, with less having to go into the existing inefficiencies and knock-on effects. ICOPE is designed partly to avert the hospital admissions of older people for problems that “could be prevented very easily or are amenable to treatment outside of a hospital setting”.

Such considerations of efficient delivery and new ways of spending existing budgets in high-income countries were seconded by another participant who cited the example of Accountable Care Organizations in the United States of America, whereby the goal is to minimize admissions and ensure a pathway into “a transitional care facility or a senior living in the community as opposed to in the hospital”.

Understanding the societal investment in healthy ageing and ICOPE, as well as the service-level health economics, represent strong themes. As important as they may prove – especially at the service efficiency level – health-centric cost measures may not be as powerful to adequately capture the more relevant and higher-level benefits that investments may bring to society as a whole.

**Action points**

**Actions for the CCHA**
- Include health economic assessment in the protocols for local ICOPE pilots.
- Document economic data and analysis to support ICOPE implementation.
- Develop research on the allocation of resources according to the results of ICOPE health economic assessments.
- Engage in the development of an economic argument and narrative on healthy ageing and ICOPE.

**Actions for WHO**
- Formulate an economic argument and develop a narrative on the value of ICOPE implementation.
- Promote and lever incentives for ICOPE implementation and dissemination by convincing policy-makers, also on a wider health economics ground.

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17 These are groups of doctors, hospitals and other healthcare providers who voluntarily work together to give coordinated high-quality care under a model innovated by the government’s Centers for Medicare & Medicaid Services Innovation Center (see https://innovation.cms.gov/about).
The way forward

The final panel of the 2022 annual meeting of the CCHA looked to ongoing work and the year ahead. The CCHA Secretariat shared a summary of the technical products presently being led by the WHO team. The following technical products are aimed for 2023:

- guidelines on chronic primary low back pain;
- indicators on measurement, monitoring and evaluation of the Decade;
- the draft of the second edition of the ICOPE guidance (including improvements to facilitate the ICOPE adoption in low-resource settings);
- an ICOPE training programme for health and care workers.

Implementation tools for long-term care services are also in the pipeline.

Finally, the publication of the 2023 Progress Report for the Decade has been scheduled and a national toolkit on monitoring the Decade’s progress is also due to become available over the year.

Priorities for the Consortium in 2023

The meeting heard a brief summary of the action points identified from the panels of discussion over the two days of the meeting. The action points are collaborative efforts by WHO and the CCHA. They are listed at the end of the relevant report sections (see Panels 1 to 6).

Discussion points

At the end of the 2022 CCHA meeting, the participants reflected on the instructive action points they had helped to generate over the two days across the panels of experts. The discussions that took place for this closing part on the way forward are reflected in those action points.

With no further questions to raise or burning contributions to add – to what was, once again, a stimulating and productive two days of CCHA effort to steer, support and inform the participants’ shared goal of healthy ageing – the second day ended with final notes of thanks shared between all who enjoyed contributing to the 2022 virtual meeting.
References


WHO clinical consortium on healthy ageing 2022


68. WHO clinical consortium on healthy ageing 2020: report of consortium meeting, held


WHO Clinical Consortium on Healthy Ageing
Annual meeting, 5–6 December 2022

Monday, 5 December 2022 (day 1)

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<td>13:00 – 13:20</td>
<td>Introduction and meeting objectives</td>
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<tr>
<td>13:00 – 13:08</td>
<td>Welcoming remarks</td>
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<td>13:08 – 13:20</td>
<td>Update since 2021 and meeting objectives</td>
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<td>13:20 – 14:20</td>
<td>PANEL 1: Monitoring the integrated continuum of care</td>
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<td>ICOPE programme indicators</td>
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<td>13:28 – 13:35</td>
<td>Questions and answers</td>
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<td>Trajectories of intrinsic capacity (five minutes each)</td>
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<td>13:50 – 14:20</td>
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<td>Break</td>
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<tr>
<td>14:30 – 15:05</td>
<td>PANEL 2: Validation of the ICOPE screening tool</td>
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<tr>
<td>14:30 – 14:35</td>
<td>China</td>
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<tr>
<td>14:35 – 14:40</td>
<td>Spain</td>
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<tr>
<td>14:40 – 14:45</td>
<td>Andorra</td>
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<tr>
<td>14:45 – 15:05</td>
<td>Plenary discussion</td>
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<tr>
<td>15:05 – 15:55</td>
<td>PANEL 3: Care pathways for urinary incontinence</td>
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<tr>
<td>15:05 – 15:13</td>
<td>Urinary incontinence</td>
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<tr>
<td>15:13 – 15:23</td>
<td>Care pathways to manage urinary incontinence</td>
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<tr>
<td>15:23 – 15:55</td>
<td>Plenary discussion</td>
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<tr>
<td>15:55 – 16:00</td>
<td>Wrap up day 1</td>
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Chair: John Beard
Chair: Leocadio Rodriguez Manas
Chair: Finbarr Martin

Ruby Yu
Philipe De Souto Barreto
Ninie Wang
Amy Xi Song
Sergi Blancafort Alias
Eva Heras Muxella
Matteo Cesari
Adrian Wagg
Matteo Cesari
### Tuesday, 6 December 2022 (day 2)

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Chair/Presenter</th>
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<tr>
<td>12:45 – 13:00</td>
<td>Welcome</td>
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<tr>
<td>13:00 – 13:45</td>
<td>PANEL 4: Advancing the measurement of intrinsic capacity</td>
<td>Jean-Yves Reginster</td>
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<tr>
<td>13:00 – 13:08</td>
<td>Systematic review on the measurement of intrinsic capacity</td>
<td>Jotheeswaran Amuthavalli Thiyagarajan</td>
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<tr>
<td>13:08 – 13:13</td>
<td>Locomotor capacity</td>
<td>Germain Honvo</td>
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<td>13:13 – 13:18</td>
<td>Vitality</td>
<td>Ivan Bautmans</td>
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<td>13:18 – 13:45</td>
<td>Plenary discussion</td>
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<tr>
<td>13:45 – 14:35</td>
<td>PANEL 5: Validation of functional ability</td>
<td>Zeea Han</td>
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<tr>
<td>13:45 – 13:53</td>
<td>Systematic review on the measurement of functional ability</td>
<td>Christopher Mikton</td>
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<tr>
<td>13:53 – 14:00</td>
<td>Questions and answers</td>
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<tr>
<td>14:00 – 14:10</td>
<td>Validation of functional ability (five minutes each)</td>
<td>Naoki Kondo, Ian Philp</td>
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<tr>
<td>14:10 – 14:35</td>
<td>Plenary discussion</td>
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<tr>
<td>14:35 – 14:45</td>
<td>Break</td>
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<tr>
<td>14:45 – 15:30</td>
<td>PANEL 6: The economic case for healthy ageing</td>
<td>Bruno Vellas</td>
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<td>14:45 – 14:53</td>
<td>Healthy ageing for a healthy economy</td>
<td>David Bloom</td>
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<tr>
<td>14:53 – 15:05</td>
<td>Methodology to assess the economics of ICOPE (five minutes each)</td>
<td>Sandrine Andrieu, Debbie Muirhead</td>
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<tr>
<td>15:05 – 15:30</td>
<td>Plenary discussion</td>
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<tr>
<td>15:30 – 15:55</td>
<td>The way forward</td>
<td>Yuka Sumi, Luis Miguel Gutierrez Robledo</td>
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<tr>
<td>15:30 – 15:55</td>
<td>Plenary discussion on way forward: consortium priorities for 2023</td>
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<tr>
<td>15:55 – 16:00</td>
<td>Closure of the meeting</td>
<td>Yuka Sumi</td>
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</tbody>
</table>
Annex 2.
Meeting participants

EXPERTS

Miguel Angel ACANFORA
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## OTHER INVITEES

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Constance DE SEYNES</td>
<td>Institute on Aging, Gérontopôle, Toulouse University Hospital Toulouse, France, WHO Collaborating Centre for Frailty, Clinical Research, Geriatric Training and Geroscience</td>
</tr>
<tr>
<td>Markus MACGILL</td>
<td>Science Writer and Editor, Green Ink, United Kingdom</td>
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## WHO COLLEAGUES

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Jotheeswaran AMUTHAVALLI THIYAGATAJAN</td>
<td>Technical Officer, Ageing and Health, Department of Maternal, Newborn, Child and Adolescent Health &amp; Ageing, WHO HQ, Geneva, Switzerland</td>
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<tr>
<td>Rachel ALBONE</td>
<td>Consultant, Ageing and Health, Department of Maternal, Newborn, Child and Adolescent Health &amp; Ageing, WHO HQ, Geneva, Switzerland</td>
</tr>
<tr>
<td>Anshu BANERJEE</td>
<td>Executive Director a.i., Division of Universal Health Coverage / Life Course, Director, Department of Maternal, Newborn, Child and Adolescent Health &amp; Ageing, WHO HQ, Geneva, Switzerland</td>
</tr>
<tr>
<td>Christina BRANDES BARBIER</td>
<td>Assistant to Team Department of Maternal, Newborn, Child and Adolescent Health &amp; Ageing, WHO HQ, Geneva, Switzerland</td>
</tr>
<tr>
<td>Matteo CESARI</td>
<td>Scientist, Ageing and Health, Department of Maternal, Newborn, Child and Adolescent Health &amp; Ageing, WHO HQ, Geneva, Switzerland</td>
</tr>
<tr>
<td>Samar ELFEKY</td>
<td>Regional Advisor, Health of Older Persons, WHO Regional Office for the Eastern Mediterranean, Cairo, Egypt</td>
</tr>
<tr>
<td>Suvajee GOOD</td>
<td>Regional Advisor, Health Promotion and Social Determinants of Health, WHO Regional Office for South-East Asia, New Delhi, India</td>
</tr>
<tr>
<td>Yuriko HARADA</td>
<td>Junior Professional Officer, Communicable and Noncommunicable Diseases, WHO HQ, Geneva, Switzerland</td>
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Enrique VEGA GARCIA  
Unit Chief, Healthy Life Course, Pan American Health Organization/WHO, Washington, United States

Maria VARLAMOVA  
Consultant, Epidemiology, Monitoring and Evaluation, Department of Maternal, Newborn, Child and Adolescent Health & Ageing, WHO HQ, Geneva, Switzerland