



# Start measuring and comparing what matters

- ICHOM's role in the future healthcare ecosystem



# ICHOM

3<sup>rd</sup> MedTech Europe Conference  
March 2022, Brussels

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Partnership Manager, ICHOM



# Agenda

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- About ICHOM
- Standardization of Outcomes
- Areas for collaboration



# ICHOM a neutral, non-profit founded to create a new definition of success in health care

Three healthcare experts and founders of ICHOM:

INSTITUTE for STRATEGY  
and COMPETITIVENESS



**Michael E. Porter**  
Board Member and Founder of ICHOM

BCG  
THE BOSTON CONSULTING GROUP



**Stefan Larsson, MD, PhD,**  
Senior advisor in healthcare. Co-founder of ICHOM

Karolinska  
Institutet



**Martin Ingvar**  
Board Member and Co-Founder of ICHOM

Mission:

Unlock the potential of value-based health care by defining global **outcome measures** that matter most to patients and by driving adoption and reporting of these measures across regions, nations and worldwide to create better value for all patients and other health care stakeholders



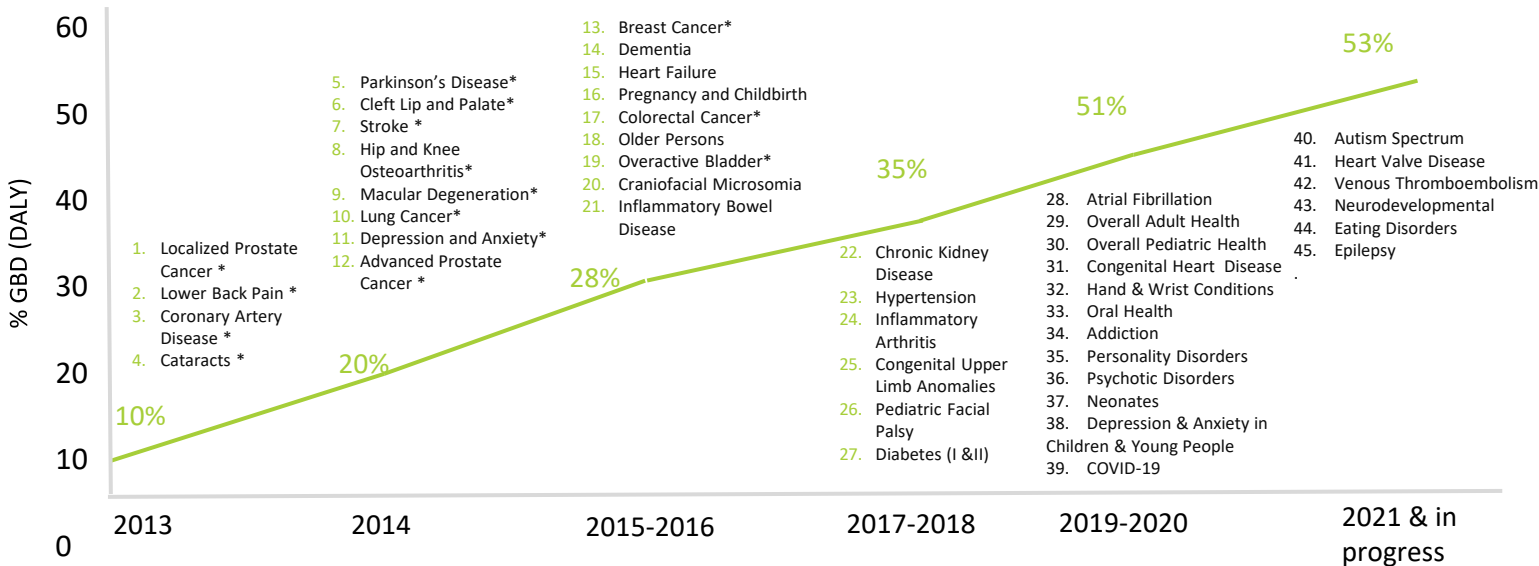
ICHOM exists to transform health care. **Worldwide.**



# ICHOM's Patient-Centered Outcome Measures cover >50% of disease burden

- Global standards for measurement of outcomes that matter to patients, defined for specific patient groups or populations segments.
- Available open source with development of new sets financed by patient advocacy groups or other non-commercial sponsors
- Estimated ~45k downloads globally since launch in 2012

Global burden of disease covered by ICHOM Patient-Centered Outcome Measures



Source: Percentage of global disease burden coverage is based on average from Global Burden of Disease Study 2019 (IHME) and World Health Organization GHO 2019.

Published in peer-reviewed and most respected medical journals



# Our Patient-Centered Outcome Measures fully digitized for easier implementation

## Harmonization of ICHOM Sets

1. 3,000 measures defined by working groups across 28 conditions

2. Measures with identical ID but clearly different meaning were split

3. Measures with identical ID and less profound differences were merged

4. Unique measures that aim to capture the same clinical concept were clustered

5. Standard data structures and reference terminology were defined for 4 prioritized sets

6. Harmonized measures were arranged in a machine-readable ICHOM measure repository

## Standardized digital term bank for all metrics

Term Bank

Set No.: BRC

Keywords: [Search]

set no	term id	definition	supporting definition	timing	keywords	Loinc code	Snomed Code	Acti
BRC0	concept_69	indicate date patient started with chemotherapy	refers to start of first cycle in case of multiple cycles	update at least annually	Chemotherapy; Date of chemotherapy	80989-7	439272007	[x]
BRC1	concept_70	indicate date patient stopped with chemotherapy	refers to stop of last cycle in case of multiple cycles	update at least annually	Chemotherapy; Date of chemotherapy		413947000	[x]
BRC2	concept_94	indicate whether the patient has a documented history of any of the following comorbidities	based upon the self-administered comorbidity questionnaire sangha et al 2003 phrased as a patient-reported measure but information can be abstracted by other means if patient is unable to answer	baseline and after 5 years	Comorbidities; Self-Administered	75618-9		[x]
BRC3	concept_107	please state the impact of the complication experienced by the patient	complications while on treatment or up to 90 days after initiation of treatment quality	updated at least 6 months after treatment completion except for	Complications; Impact of complications		116224001	[x]

## Aligned with all key digital standards

SNOMED International

HL7 FHIR

LOINC from Regenstrief

- Harmonization of 40 published Patient-Centered Outcomes Measures Sets.
- Benefits
  - Ensures the reduction the implementation challenges in health information systems
  - Decreases the registration burden for patients with multimorbidity.

- Digital term bank codifies the harmonization of measures.
- OMOP used as common data model
- Benefits
  - Reduces interpretation challenges
  - Decreases programming time for extraction of set variables from the EHR or other data repositories.

- Annual releases of updated sets.
- All metrics mapped to SNOMED/LOINC
- HL7-FHIR profiles work in progress.
- Benefits
  - Supports easier maintenance of data collection
  - Helps benchmark outcomes nationally and internationally.

# Example of using ICHOM Sets as a common language for VBP stakeholders

**ESC** European Heart Journal (2019) 40, 422–440  
 European Society of Cardiology doi:10.1093/eurheartj/ehy668

**CLINICAL REVIEW**  
 Clinical update

## Transcatheter heart valve interventions: where are we? Where are we going?

**Bernard D. Prendergast<sup>1</sup>, Helmut Baumgartner<sup>2</sup>, Victoria Delgado<sup>3</sup>, Olivier Gérard<sup>4</sup>, Michael Haude<sup>5</sup>, Anders Himmelmann<sup>6</sup>, Bernard Jung<sup>7</sup>, Matthew Leafstedt<sup>8</sup>, Jasmine Lennartz<sup>8</sup>, Francesco Maisano<sup>9</sup>, Elena Andreassi Marinelli<sup>10</sup>, Thomas Modine<sup>11</sup>, Markus Mueller<sup>12</sup>, Simon R. Redwood<sup>1</sup>, Olaf Röric<sup>13</sup>, Cherif Sahyoun<sup>14</sup>, Erika Saillant<sup>4</sup>, Lars Søndergaard<sup>15</sup>, Martin Thoenes<sup>16</sup>, Karen Thomitzek<sup>17</sup>, Marion Tschernich<sup>4</sup>, Alec Vahanian<sup>7</sup>, Olaf Wendler<sup>18</sup>, Evelyn Julia Zemke<sup>13</sup>, and Jeroen J. Bax<sup>3\*</sup>**

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Transcatheter heart valve interventions have transformed the outcomes of patients with valvular heart disease (VHD) who are unfavourable candidates for surgery. Technological advances have allowed extension of these interventions to younger or lower risk patients and those with other forms of VHD and may in the future permit earlier treatment of VHD in less symptomatic patients or those with moderate disease. The balance of risks and benefits is likely to differ between lower and higher risk patients, and more evidence is needed to evaluate the net benefit of transcatheter technology in these groups. As academic researchers, clinicians, industry, and patient stakeholders collaborate to research these broader indications for transcatheter valve interventions, it is essential to address (i) device durability and deliverability, (ii) specific anatomical needs (e.g. bicuspid aortic valves, aortic regurgitation, mitral and tricuspid valve disease), (iii) operator training, and (iv) the relative importance of the multidisciplinary Heart Team.

**Keywords** Heart valve disease • Transcatheter aortic valve replacement • Aortic valve • Mitral valve • Tricuspid valve

### Introduction

Transcatheter valve interventions have transformed the management of valvular heart disease (VHD), especially for elderly patients at high surgical risk, and the European Society of Cardiology (ESC) and European Association of Cardiothoracic Surgery (EACTS) issued guidelines in 2017<sup>1</sup> for their application in clinical practice. The field has rapidly evolved since introduction of the first CE marked transcatheter aortic valve implantation (TAVI) devices in 2007<sup>2</sup> (Figure 1)<sup>3,4</sup> and ongoing studies are exploring extension of this technology to lower risk aortic stenosis (AS) patients and other forms of VHD.

Leaders in the field must consider unmet clinical needs, device safety, and optimal research approaches to address the desired outcomes of patients with VHD. Collaboration among researchers, clinicians, industry partners (including device, imaging and pharmaceutical companies), regulators, payers, and patient organizations is critical. Accordingly, the ESC Cardiovascular Round Table (CRT) convened a dedicated workshop in October 2017 to (i) discuss the innovations and successes of transcatheter valve intervention, (ii)

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Using ICHOM Set across stakeholders brings the standardization of measurements and creates the base for a meaningful comparison.

Multistakeholder collaboration of academic researchers, clinicians, industry, and patient stakeholders gathered to research broader indications for transcatheter valve interventions.

Using ICHOM Global Benchmarking Platform for validated and standardized comparison within the network of providers and (inter)nationally.

**ICHOM**

**The heart valve society**

This work will be facilitated with coordinating with the following multi societies:

**COLLECT**  
 Data is collected and stored by the provider as defined by Patient-Centered Outcomes Measures – outcomes already approved by global experts.

**VALIDATE**  
 MRDM processes data according to ICHOM's working group calculation rules. Validated reports are sent to you – the data owners.

**REPORT**  
 Access interactive dashboards based on ICHOM Sets and risk adjustment algorithms.

**IMPROVE**  
 Visibility of benchmarked outcomes against best practices allows providers to make informed choices to improve patient care pathways.

**ICHOM**

## How ICHOM could add value to VBP stakeholders ?



Suppliers – ICHOM could provide guidance on outcomes to measure when choosing therapeutic areas of interest and/or solutions that target to demonstrate improved patient reported outcomes.



Providers – ICHOM could collaborate on pilot projects (exp. without real buying decision) to test the procurement process based on outcomes. ICHOM could advise on benchmarking potential for certain conditions.



Accelerate partnership program – ICHOM could facilitate discussions and connect suppliers and providers to accelerate the implementation, data collection and the visualization of patient reported outcomes (ICHOM Sets).

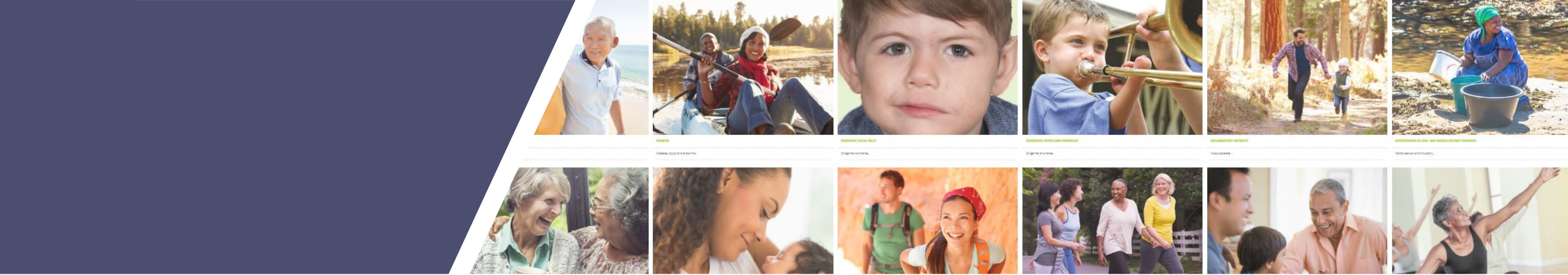


Public (procurement) authorities – ICHOM could engage in assessment of applicable ICHOM Sets for tender process for suppliers to use, to demonstrate improved patient outcomes of their solutions. ICHOM could participate in competitive dialogues to discuss potentials for outcomes improvement for a given condition.



Payers – ICHOM could connect payers that use our Sets to compare outcomes relevant to new payment models so payers can negotiate contracts based on results and encourage innovation to achieve those results.





Let's measure and compare what matters to patients !



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