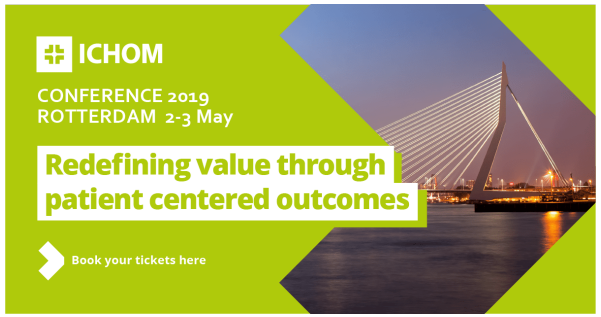

Measuring the value of lung cancer care in practice

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Kennis / Ervaring / Zorg

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Disclosures

- https://www.betransparent.be/en/search

- Advisory member of All.Can board
- Board member of All.Can Belgium

Measuring the value of lung cancer care in practice

- Implementing the standard set: from drawing board to real world
- Implementing VBHC: the All.Can Lung Cancer project
- Challenges
  - Generic
  - Lung cancer specific

Lung cancer in EU: the size of the health problem

1. High incidence: 1 new case every minute

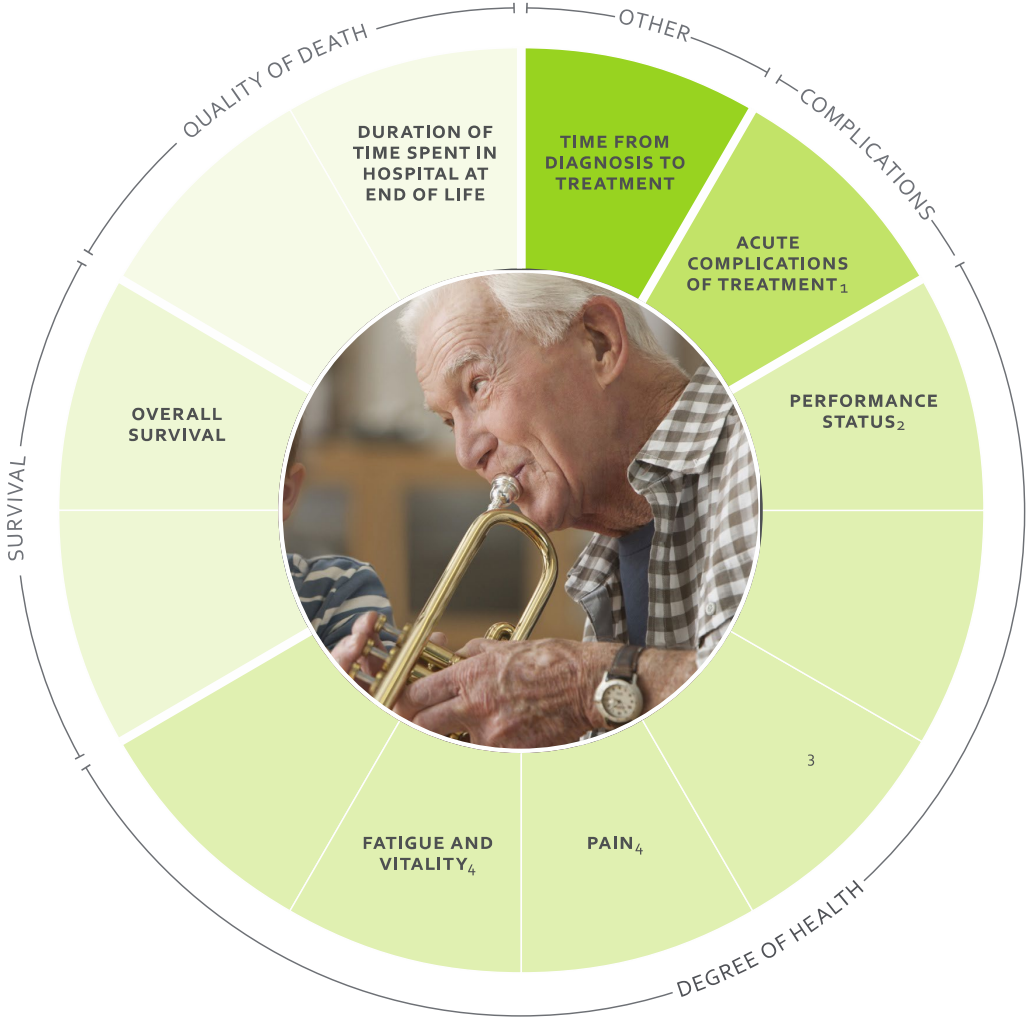
2. High mortality: 3% of all causes of death and increasing

3. Poor outcome: average 5 year survival: 13%

4. High economic burden: direct cost
   - 3,35 billion € in 2011
   - Increases + 50% between 2006-2016, regardless of the costs of novel targeted and immunotherapies

5. Largely preventable: smoking avoidance and cessation; low dose CT-scan screening

ICHOM Standard Set for Lung Cancer: 12 outcomes



Treatment approaches covered

- Surgery
- Radiotherapy
- Chemotherapy
- Targeted therapy
- Immunotherapy
- Other

Outcome details

[1]Includes major surgical complications, major radiation complications, and major systemic therapy complications. Recorded via the Common Terminology Criteria for Adverse Events (CTCAE), version 4.0
[2]Recorded via the Eastern Cooperative Oncology Group (ECOG) score
[3]Recommended to track via European Organization for Research And Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-LC13)
[4]Recommended to track via the EORTC QLQ-C30
[5]Includes physical, emotional, cognitive & social function and well-being
[6]Includes treatment-related mortality and cause of death

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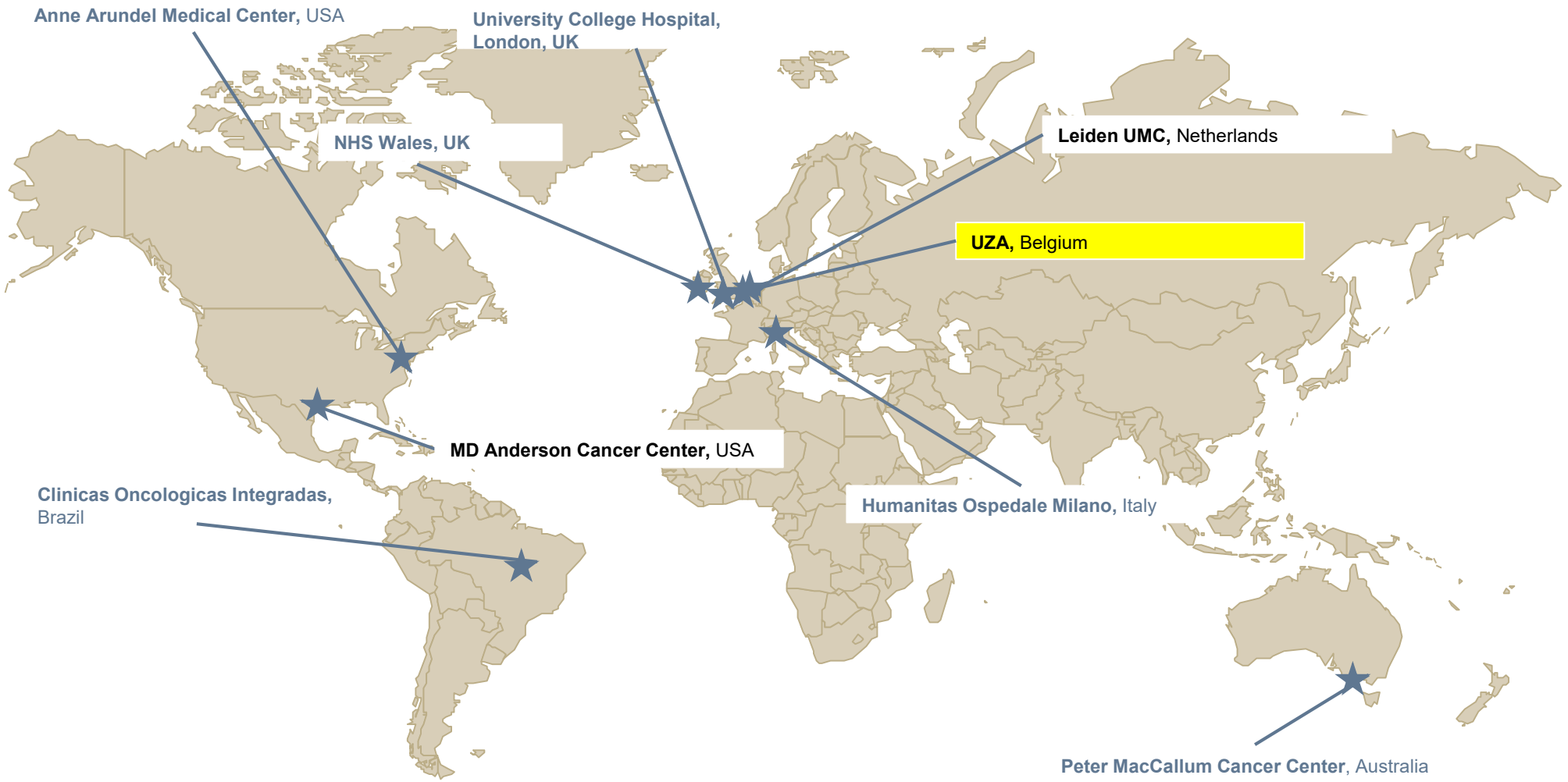
Implementation of the Lung Cancer Standard Set



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Pilot: background & rationale

- Aim:
  - Mapping of incident population
  - Establish an operational workflow
  - Identify troubleshooting and barriers
  - Estimate compliance of PROMs collection

- Preconditions:
  - Minimal extra workload for physicians
  - Maximally linked to existing routine care pathway and databases

Methods

- Pilot project over 12 months
- Log of all incident patients presenting at UZA

- ELIGIBILITY CRITERIA
  - Dutch speaking
  - 18+
  - Incident diagnosis of lung cancer, treatment naive
  - Diagnostic workup and main treatment at UZA
  - Histologically confirmed diagnosis
  - Informed consent

- Cloud-based database via external ICT-provider

Expected sources for data collection

Manual entry

- Smoking status
- Performance status
- Treatment intent
- Complications
- Cause of death

No e-link allowed between EPF and cloud database: manual re-entry!

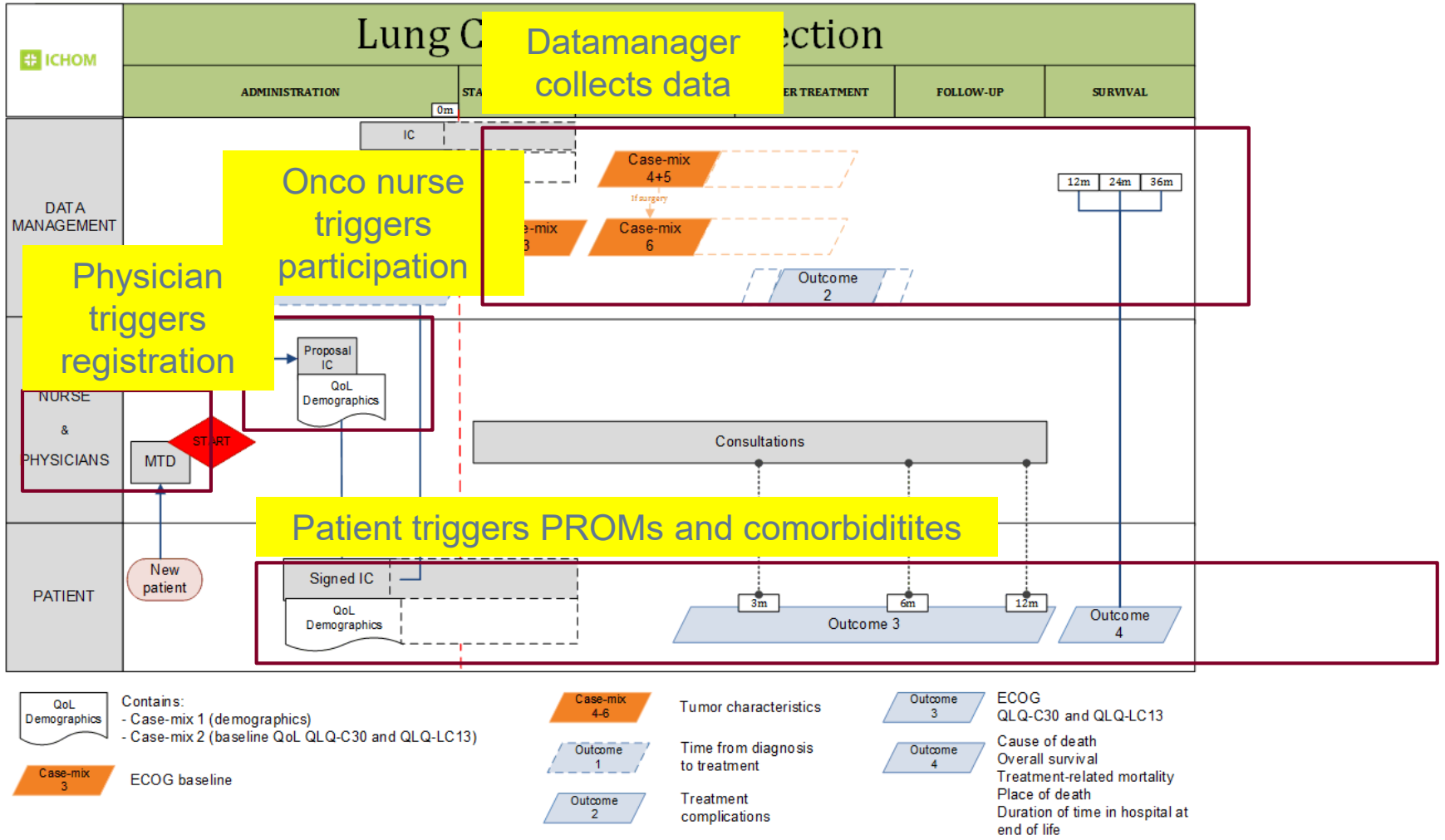
Pull from existing EPF

- Demographics
- Cancer registry minimal data: stage, morphology, 1st treatment
- Pulmonary function tests
- Time from diagnosis-1st treatment
- Treatment completion date
- Survival, cause and place of death
- Time in hospital @ EoL

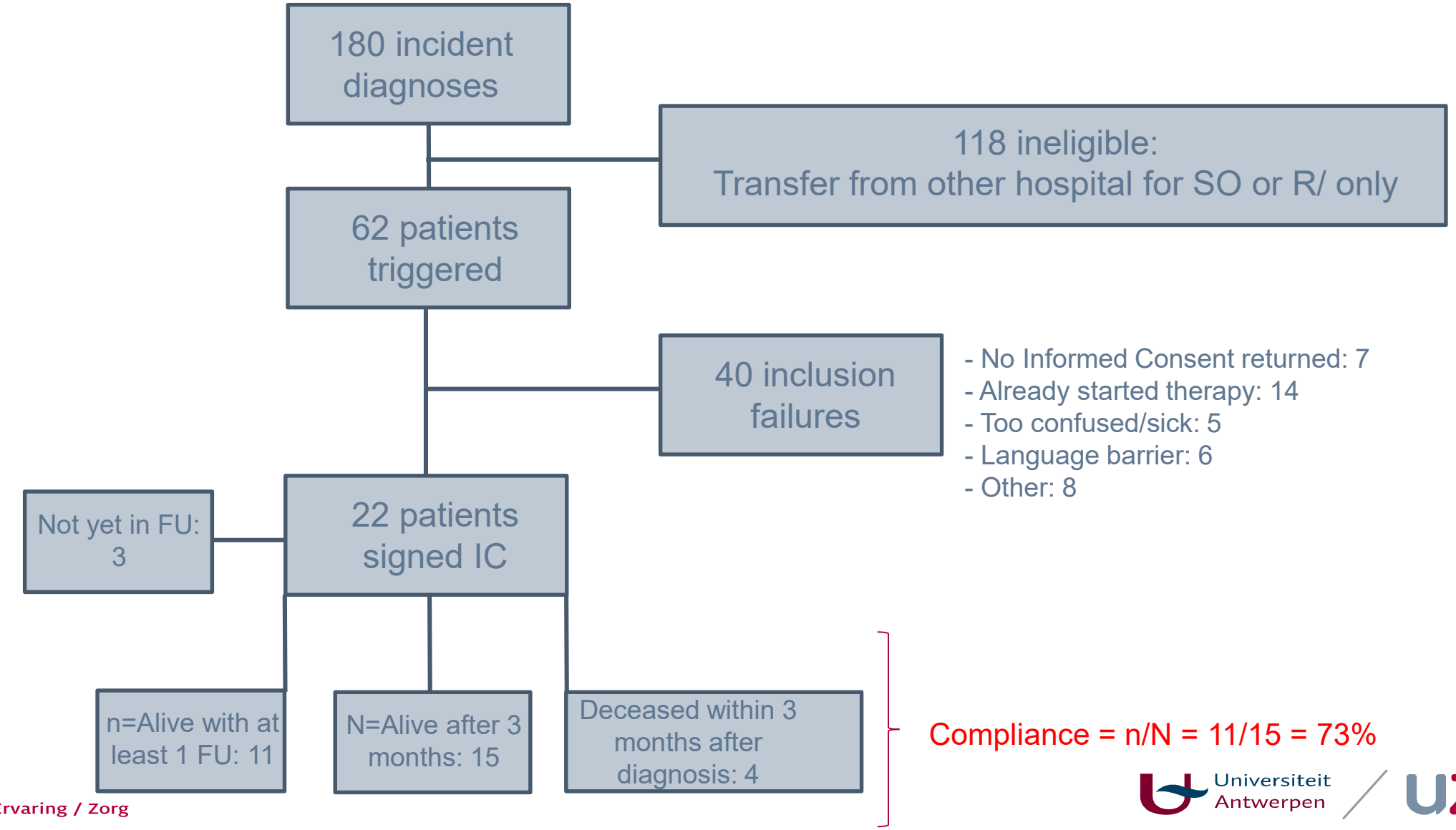
e-POC collection

- PROMs
- Comorbidities
- Educational level

Results: workflow



Patientflow February 2016 - January 2017



Compliance = n/N = 11/15 = 73%

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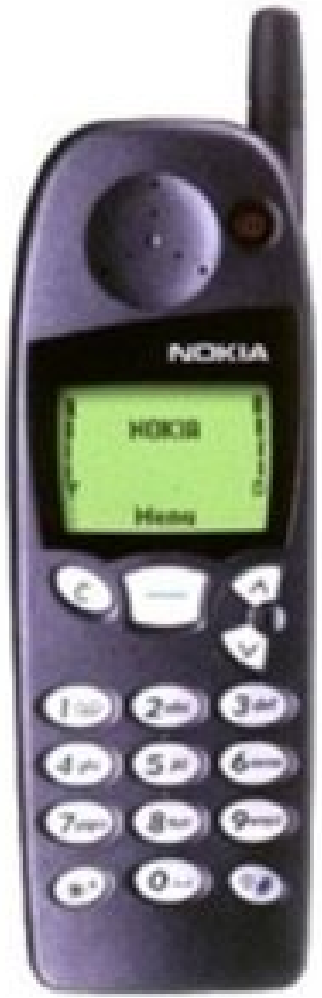
Digital environment & PROM's



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Conclusions from pilot

- The proposed workflow allows easy triggering of incident patients and avoids extra workload for MD's
- Automatic pulling of data from existing e-Db's hampered by limitations of EPF and privacy regulations
  - *Need for dedicated 'high end' intra muros ICT platform compliant with privacy and accreditation requirements*
- Compliance for follow-up acceptable
- Bottlenecks for compliance and their remedies identified
  - Low inclusion and eligibility rate
    - Many incident, but short transiting patients reflecting academic setting => EXCLUSION
    - Many ineligible cases for poor general condition, mental state, language barrier or digitally analphabetic
    - No histological confirmed diagnosis before first (surgical) treatment
      - *R/ Start inclusion when high suspicion of lung cancer, and exclusion thereafter of FP cases*
- Low rate of online participation: time consuming collecting and entering paper-based data
  - R/ Use of tablet pc at outpatient clinic

All.Can Lung Cancer project

Project Vision

Provide **practical support to a community of hospitals** to measure value (outcomes and costs) in a standardized and sustainable way.

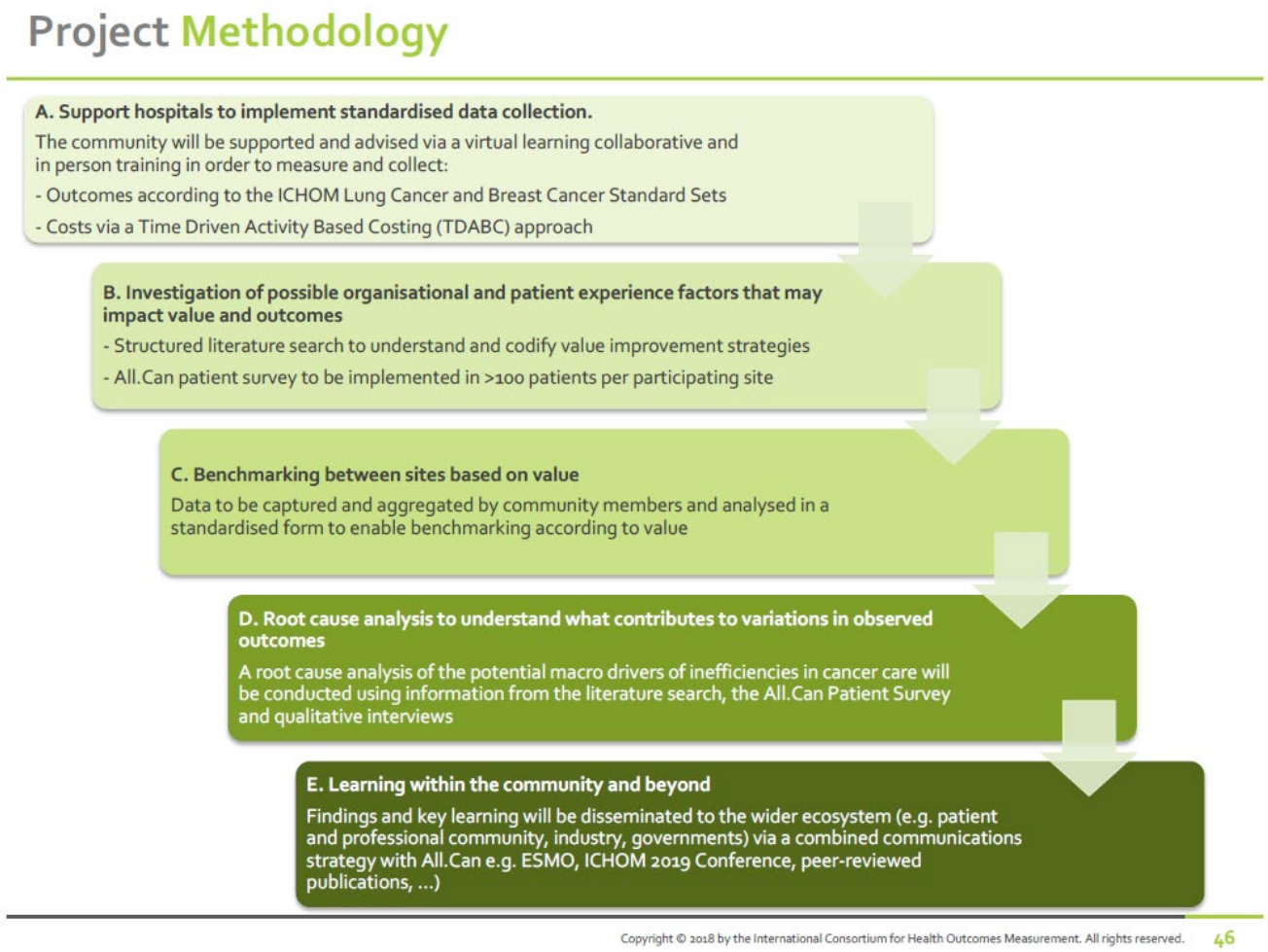
Enable this community of providers to understand what contributes to variations in **value (outcomes and costs)**, and hence efficiency in **lung and breast cancer care delivery.**

Draw from findings to offer the oncology community and policymakers concrete avenues to improve the efficiency of lung and breast cancer care.

Project Scope

1. A community of 12 providers – public or private hospitals with a lung and/or breast cancer clinic,
2. Hospitals recruited in Europe only.
   - Portugal: IPO/Porto
   - Spain: 12Octubre/Madrid & Donostia/Basque
   - Belgium: AZ Delta /Roeselare, OLV Aalst, UZAntwerp
4. Adult patients (men and women) with new, primary diagnosis of lung cancer, palliative and curative intent.

Methodology



Real world generic challenges

- European regulatory environment for an observational trial
  - Country-specific requirements
  - Accordance to GDPR-era
- Digital extraction of ‘hard outcomes’ only possible with ‘high end’ EPF
- Lack of uniform coding of outcome variables between data sources prone to error
- Collection of PROM’s
  - Preferably channelagnostic collection: portal, ipad, texting, paper, tablet
  - Point of care application in EPF requires dedicated patient portal
  - Participants’ long term PROM-tiredness and compliance
- Updates in outcomes definitions: how to cope with their increasing granularity?
  - New staging, pathology classification, new PROM questionnaire
- Segmentation in intramural care pathway vs. holistic VBHC pathway

Lung cancer specific challenges

- Lung cancer is heterogenous disease at diagnosis
  - Chameleon presentation difficult to capture in a single diagnostic pathway
  - Comorbidity and devastating neurological symptoms
  - Risk of selection bias of the fittest
- Vastly different prognosis: from cure to death within days of diagnosis
- Increasingly complex and rapidly changing treatment landscape
  - Curative: resection and radical radiotherapy w/wo chemo- or immunotherapy
  - Palliative: chemo-, immuno- and targeted therapy; radiotherapy, supportive care

Costs of lung cancer care

- Largely different care pathways in order to capture TDABC at individual patient level

- Large variations in cost/QALY according to stage and treatment modality

Early stage	Lobectomy	10,000 €/QALY
Locally advanced	Chemoradiotherapy	16,000 €/QALY
Advanced stage	1st line chemotherapy	20,000 €/QALY
	Targeted agents	25,000 €/QALY
	Immunotherapy	100,000 €/QALY

- Will TDABC capture enough of the variation in costs in lung cancer care?

Decisions taken

- Conduct project as an observational multicenter trial according to GCP/IHC
  - EU regulatory environment e.g. sponsorship, data handling
  - Obtain informed consent from participant
- Exclude diagnostic pathway of lung cancer
  - Heterogenous
  - Unfit for TDABC
- Allow participants to add center specific inclusion criteria
  - E.g. include only patients in a curative or palliative pathway
  - Exclude digitally-naïve patients
- Harmonisation of definitions and coding across standard sets and with other databases
- Gapanalysis between existing/required data bases

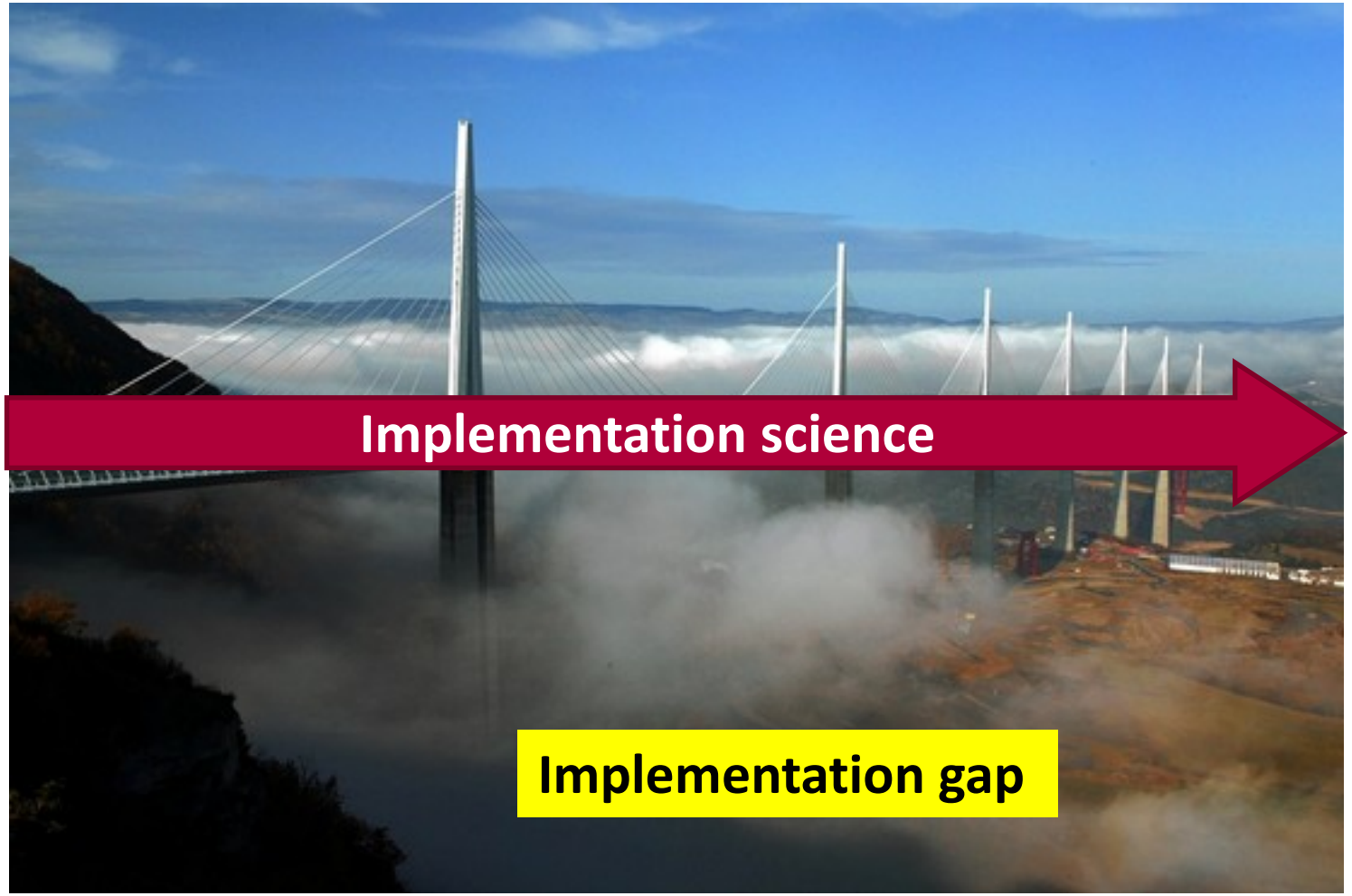
All.Can lung cancer project

Project Plan Overview: Process Map

1. Study Design & Community Set-Up	2. Implementation	3a. Benchmarking & Observation 3b. Root Cause Analysis	4. Learning & Dissemination
Jan '18 – Jun '18	Jul '18 – Dec '18	Jan '19 – Sep '19	Oct '19 – Dec '19
• Provider recruitment & onboarding • Study plan & standard set readiness preparation • Launch meeting 18th June Madrid	• TDABC training and costing of care pathways • Deployment of data capture solutions • Deployment of **All.Can Patient Survey** • Value measurement embedded into organisation • Literature review of value improvement and efficiency strategies	• Data collection of outcomes variables commenced • Root cause analysis of variation drivers commenced at sites using Literature Search and All.Can Patient Survey insights	• Cost and outcomes data shared with community • Findings shared with wider sector via joint communications plan • Summation event

Implementation

TRIAL WORLD



REAL WORLD