MYIA

Dr. Andre Dias
A deep dive into outcomes
Agenda

What is an outcome set

How will outcomes collection impact you
There are lots of things to measure in healthcare

- **Patient initial conditions**
- **Patient experience/engagement**
- **Indicators**
  - Protocols/guidelines
    - *E.g.*, staff certification, facilities standards
  - PSA
    - Gleason Score
    - Surgical margin (...)
  - Survival
    - Continence
    - Erectile function (...)

Source: Michael Porter, Institute of Strategy and Competitiveness, Harvard
The outcomes hierarchy

Tier 1
Health status achieved or retained

- Survival
- Degree of health achieved or maintained

Tier 2
Process of Recovery

- Time to recovery and return to normal activities
- Disutility of the care or treatment process (e.g., diagnostic errors and ineffective care, treatment-related discomfort, complications, or treatment errors)

Tier 3
Sustainability of health

- Sustainability of health/recovery and nature of recurrences
- Long-term consequences of therapy (e.g., care-induced illnesses)

Source: Michael Porter, Institute of Strategy and Competitiveness, Harvard
“Outcomes are the results people care about most when seeking treatment, including functional improvement and the ability to live normal, productive lives.” – ICHOM
Deep dive on a outcomes standard set
What kind of outcomes are in the set

Tier 1

Tier 2

Tier 3

Source: ICHOM
But how do you measure these outcomes objectively?

<table>
<thead>
<tr>
<th>Patient Population</th>
<th>Measure</th>
<th>Supporting Information</th>
<th>Timing</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient-Reported Health Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All patients</td>
<td>Hip or knee functional status</td>
<td>Tracked via either the HOOS-PS or KOOS-PS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain in the hips, knees, or lower back</td>
<td>Tracked via numeric or visual analog rating scales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td></td>
<td>Tracked via either the EQ-5D-3L, VR-12, or SF-12</td>
<td>Baseline;</td>
<td>Patient-reported</td>
</tr>
<tr>
<td>Work status</td>
<td></td>
<td>Indication of patient’s ability to work</td>
<td>Annually</td>
<td></td>
</tr>
<tr>
<td>Satisfaction with results</td>
<td></td>
<td>Patient’s overall satisfaction with the results of their care</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acute Complications of Treatment**

| Surgical patients          | Death                                        | All cause 30-day mortality                                                                    | Post-surgery    | Administrative data    |
|                            | Admissions                                   | All cause 30-day readmissions                                                                 |                 |                         |
| Reoperation                |                                              | All reoperations                                                                            | Continuous      | Clinical or administrative data |

HOOS-PS: Hip Disability and Osteoarthritis Outcome Score – Physical Function; KOOS-PS: Knee Injury and Osteoarthritis Outcome Score - Physical Function; EQ-5D-3L: EuroQol 5 Dimension 3 Levels; VR-12: Veterans RAND 12; SF-12: Short Form 12 Health Survey
The following questions concern your level of function in performing usual daily activities and higher level activities. For each of the following activities, please indicate the degree of difficulty you have experienced in the last week due to your hip problem.

<table>
<thead>
<tr>
<th>Activity</th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Extreme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Descending stairs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Getting in/out of bath or shower</td>
<td></td>
<td></td>
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<tr>
<td>3. Sitting</td>
<td></td>
<td></td>
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<tr>
<td>4. Running</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Twisting/pivoting on your loaded leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
On a scale of 0 to 10, with 0 being no pain at all and 10 being the worst pain imaginable, please indicate your average pain in each of the following locations on your body over the last 7 days.

<table>
<thead>
<tr>
<th>Location</th>
<th>No pain</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>right hip</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>left hip</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>right knee</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>left knee</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>lower back</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Quality of life – EQ5D

Please indicate which statements best describe your own health state today.

**Mobility**

[MOBILITY]
- I have no problems in walking about
- I have some problems in walking about
- I am confined to bed

**Self-Care**

[SELF-CARE]
- I have no problems with self-care
- I have some problems washing or dressing myself
- I am unable to wash or dress myself

**Usual Activities** (e.g. work, study, housework, family or leisure activities)

[ACTIVITY]
- I have no problems with performing my usual activities
- I have some problems with performing my usual activities
- I am unable to perform my usual activities

**Pain/Discomfort**

[PAIN]
- I have no pain or discomfort
- I have moderate pain or discomfort
- I have extreme pain or discomfort

**Anxiety/Depression**

[ANXIETY]
- I am not anxious or depressed
- I am moderately anxious or depressed
- I am extremely anxious or depressed
Quality of life – EQ5D

To help people say how good or bad a health state is, we have drawn a scale (rather like a thermometer) on which the best state you can imagine is marked 100 and the worst state you can imagine is marked 0.

We would like you to indicate on this scale how good or bad your own health is today, in your opinion. Please do this by drawing a line from the box below to whichever point on the scale indicates how good or bad your health state is today.

[EQ_VAS]
Satisfaction and employment

How satisfied are you with the results of your treatment?

[TREATSATE]

☐ Very satisfied
☐ Satisfied
☐ Neither satisfied nor dissatisfied
☐ Unsatisfied
☐ Very unsatisfied

What is your work status?

[EMPLOYMENT]

☐ Unable to work due to a condition other than osteoarthritis
☐ Unable to work due to osteoarthritis
☐ Not working by choice (student, retired, homemaker)
☐ Seeking employment (I consider myself able to work but cannot find a job)
☐ Working part-time
☐ Working full-time
When to measure

Example 1:
- Begin data collection
- Change in treatment
- 1 year
- 2 years
- 3 years

Example 2:
- Begin data collection
- Surgery
- 30 days
- 1 year
- 2 years

Source: ICHOM
Who is the data applicable to?

## Treatment Variables

<table>
<thead>
<tr>
<th>Patient Population</th>
<th>Measure</th>
<th>Supporting Information</th>
<th>Timing</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients</td>
<td>Treatment progression</td>
<td>Indication of the treatments undergone for osteoarthritis in the past year</td>
<td>Baseline; Annually</td>
<td>Patient-reported</td>
</tr>
<tr>
<td></td>
<td>Care utilization</td>
<td>Indication of the health care providers consulted for treatment of osteoarthritis in the past year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgical patients</td>
<td>Date of procedure</td>
<td>N/A</td>
<td>Clinical or administrative data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operative joint</td>
<td>Joint on which procedure was performed</td>
<td>Post-surgery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Orthopedic procedure</td>
<td>Type of procedure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Case-Mix Factors

<table>
<thead>
<tr>
<th>Patient Population</th>
<th>Measure</th>
<th>Supporting Information</th>
<th>Timing</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic Factors</strong></td>
<td>Date of birth</td>
<td>N/A</td>
<td></td>
<td>Patient-reported</td>
</tr>
<tr>
<td>All patients</td>
<td>Patient sex</td>
<td>Sex at birth</td>
<td>Baseline</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Education level</td>
<td>Level of education completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Baseline Clinical Status</strong></td>
<td>Joint specific history</td>
<td>History or finding of trauma or injury, congenital or developmental disorders, or other joint disorders in the hips or knees</td>
<td>Baseline</td>
<td>Clinical or administrative data</td>
</tr>
<tr>
<td>All patients</td>
<td>Joint specific surgical history</td>
<td>History of previous surgery on hips or knees</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Case-Mix Factors</strong></td>
<td>Body mass index</td>
<td>Height and weight</td>
<td>Living alone, with family, or in a nursing home or other facility</td>
<td>Patient-reported or clinical data</td>
</tr>
<tr>
<td>All patients</td>
<td>Living condition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Laterality of affected joint(s)</td>
<td>Indication of which joint(s) is(are) affected at baseline</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>History of surgery on the hip or knee</td>
<td>Patient reported history of previous surgery on hips or knees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All patients</td>
<td>Physical activity*</td>
<td>Physical activity</td>
<td>Baseline; Annually</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tobacco smoking status</td>
<td>Use of cigarettes, cigars, or other tobacco products</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Co-morbid conditions</td>
<td>Presence of: Cancer, depression, diabetes, disease of the nervous system, heart disease, hypertension, kidney disease, liver disease, lung disease, peripheral vascular disease, rheumatoid arthritis or other arthritis, spinal disease</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Done!!!
So what do you get out of this data?
Recall yesterday – Daily Activities

Total Knee Replacement: Performance of Daily Activities

Patients have considerable limitations to their daily activities before surgery.

These limitations improve rapidly in the first few months after surgery.

Our patients' physical limitations are nearly completely resolved over the course of the year.

0 = Day of Surgery
Days From Procedure

Score (Higher is Better)
Pain

Total Knee Replacement: Relief from Knee Pain

Number of Surveys: 647

Patients have considerable knee pain before surgery.

Although our patients see an improvement in knee pain, some pain is still present during the healing process.

Knee pain continues to improve and after one year many of our patients are nearly pain free.

Source: caredecisions.partners.org
Symptom Severity

Total Knee Replacement: Severity of Symptoms

Many people with knee problems also suffer from swelling and stiffness of their knee.

Just like with knee pain, our patients see a quick improvement of related symptoms after surgery.

Symptoms continue to steadily improve until they are often completely gone one year after surgery.

Source: caredecisions.partners.org
What happens when you rank hospitals against one another

RIKS-HIA Quality index

Source: Swedish National Patient Register, ICHOM
What happens when you rank hospitals against one another

RIKS-HIA Quality index

- **All hospitals (n=69)**
- **Bottom half 2007 (n=34)**

**Source:** Swedish National Patient Register, ICHOM
MYIA

Thank You!
Questions?