Where have we been?
Where are we going?
OHDSI OKR mid-year review

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OHDSI’s mission

To improve health by empowering a community to collaboratively generate the evidence that promotes better health decisions and better care
EasyWater Rafting
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>24</td>
<td>To collaborate with other researchers around the world</td>
</tr>
<tr>
<td>19</td>
<td>I want to generate evidence</td>
</tr>
<tr>
<td>16</td>
<td>To develop open source solutions to public health problems</td>
</tr>
<tr>
<td>11</td>
<td>For the data network</td>
</tr>
<tr>
<td>7</td>
<td>To be part of a community trying to make a positive impact</td>
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<tr>
<td>6</td>
<td>improve the quality of epidemiological studies using observational data</td>
</tr>
<tr>
<td>5</td>
<td>To improve the way in which medical evidence is generated!</td>
</tr>
</tbody>
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An organizing framework

• Objective: Ambitious goal of what is to be achieved
• Key Result: Specific measurable to benchmark and monitor how we get to the objective
Writing effective OKRs

• Objectives are the ‘Whats’. They:
  – Express goals and intents
  – Are aggressive yet realistic
  – Must be tangible, objective, and unambiguous; should be obvious to a rational observer whether an objective as been achieved
  – The successful achievement of an objective must provide clear value to the organization

• Key results are the ‘Hows’. They:
  – Express measureable milestones which, if achieved, will advance objective(s) in a useful manner to their constituents
  – Must describe outcomes, not activities
  – Must include evidence of completion. This evidence must be available, credible and easily discoverable.
## What should be OHDSI's 2021 Objectives?

<table>
<thead>
<tr>
<th>Rank</th>
<th>Objective</th>
</tr>
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<tbody>
<tr>
<td>21</td>
<td>Generate and disseminate real-world evidence about the 3 substantial public health issues: COVID-19, type 2 diabetes, and health inequalities</td>
</tr>
<tr>
<td>18</td>
<td>Enable a community to generate real-world evidence using OHDSI tools and scientific best practices</td>
</tr>
<tr>
<td>10</td>
<td>Build an international medical product safety surveillance system that provides evidence about the incidence and risk of outcomes associated with drug exposure</td>
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<tr>
<td>3</td>
<td>I'd like to see OHDSI science impacting policy</td>
</tr>
<tr>
<td>0</td>
<td>Getting CDM v6 into broad use.</td>
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<tr>
<td>Score range</td>
<td>Question to ask</td>
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<td>-------------</td>
<td>---------------------------------</td>
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<tr>
<td>9.5 - 10</td>
<td>Are we being ambitious enough?</td>
</tr>
<tr>
<td>6.5 - 9.4</td>
<td>What have we learned?</td>
</tr>
<tr>
<td>4.0 - 6.4</td>
<td>How can we focus/help?</td>
</tr>
<tr>
<td>1.5 - 3.9</td>
<td>What do we need to change?</td>
</tr>
<tr>
<td>0 - 1.4</td>
<td>Should this remain a priority objective?</td>
</tr>
</tbody>
</table>
What are your reflections on OHDSI's progress towards its 2021 objectives and key results (OKRs)?

1. We should continue with our objective, "Build an international medical product safety surveillance system that provides all stakeholders access to evidence abo..."

1. We should continue with our objective, "Enable a community to generate real-world evidence using OHDSI tools and scientific best practices"

1. We should continue with our objective, "Generate and disseminate real-world evidence about the 3 substantial public health issues: COVID-19, type 2 diabetes,..."
OHDSI in 2021

Objective: Generate and disseminate real-world evidence about the 3 substantial public health issues: COVID-19, type 2 diabetes, and health inequalities.

Key Results:
- 3 fully-reproducible study packages executed across at least 20 OHDSI data partners
- 10 publications accepted in journals with impact factor > 10
- 10 uses of OHDSI results by external stakeholders that demonstrate influence in policy or clinical decision-making
Key result 1: 3 fully-reproducible study packages executed across at least 20 OHDSI data partners

Evaluating Use of Methods for Adverse Event Under Surveillance (for vaccines)
Key result 2: 10 publications accepted in journals with impact factor > 10

Use of repurposed and adjuvant drugs in hospital patients with covid-19: multinational network cohort study

Key result 3: 10 uses of OHDSI results by external stakeholders that demonstrate influence in policy or clinical decision-making.

CBER Surveillance Program

COVID-19 Vaccine Safety Surveillance: Active Monitoring Master Protocol

February 10, 2021

AstraZeneca’s COVID-19 vaccine: EMA finds possible link to very rare cases of unusual blood clots with low blood platelets

News 07/04/2021

EMA confirms overall benefit-risk remains

Thrombosis with Thrombocytopenia: Post-Authorization Cases Reported after Janssen Vaccine and Background

- Incidence proportion (cases/million people)

- Reported Thrombosis with Thrombocytopenia
  - 15 cases/100 million people vaccinated
  - 1.9 cases/million people
Objective:
Generate and disseminate real-world evidence about the 3 substantial public health issues: COVID-19, type 2 diabetes, and health inequalities.

COVID-19: 6.5
Type 2 diabetes: 3
Health inequalities: 0
OHDSI in 2021

Objective:
Enable a community to generate real-world evidence using OHDSI tools and scientific best practices

Key Results:
– 100 organizations have a fully-operational technical infrastructure (CDM + ATLAS + HADES) sufficient to perform local analyses
– 1000 researchers complete RWE curriculum through EHDEN Academy
– 100 publications generated using and citing OHDSI tools
EHDEN Academy Marks One-Year Anniversary with 1,000th Enrollee

26th April 2021

EHDEN

1000 Enrollees!

ACADEMY.EHDEN.EU
Objective:
Build an international medical product safety surveillance system that provides all stakeholders access to evidence about the incidence and risk of outcomes associated with drug exposure

Key Results:
– Population-level effect estimation and characterization results generated for 500 drugs and 500 outcomes across 20 databases
– 100 organizations with at least 1 active user
– 10 regulatory actions taken as a result of OHDSI system
Key results: Population-level effect estimation and characterization results generated for 500 drugs and 500 outcomes across 20 databases.
However, we argue that using OMOP-CDM as a reference data model to integrate EHR data for PV purposes entails significant benefits. First, given that OMOP-CDM is a widely accepted data model, it provides a potential gateway to a big data sharing ecosystem. Furthermore, OMOP-CDM could be used to integrate other kinds of data (e.g., claims databases). Finally, the statistical and analytics tools developed by OHDSI are supported by an ecosystem of widely recognized experts, with a proven record of highly valuable results on observational studies. Although these tools are not explicitly developed for PV purposes, there is significant merit in repurposing them towards PV due their analytical prowess. This repurposing approach could be an important next step, providing significant value for both the drug safety and OHDSI ecosystem.
OHDSI MSTeams Work groups, Chapters, and Studies Registration

OHDSI is using MSTeams to further encourage active collaboration within the community. Within the OHDSI organization, there are separate teams for work groups, chapters, and studies, as well as OHDSI community activities (such as the OHDSI2020 Symposium). All teams are open to all collaborators. Below please indicate which teams you would like to join and the OHDSI coordinating center team will grant access.

5. Select the workgroups you want to join (you can refer to the WIKI for work group objectives)

- ATLAS
- Clinical Trials
- Common Data Model
- Data Quality Dashboard Development
- Early-stage Researchers
- Education Work Group
- Electronic Health Record (EHR) ETL
- Geographic Information System (GIS)
- HADES Health Analytics Data-to-Evidence Suite
- Latin America
- Medical Devices
- Natural Language Processing
- OHDSI APAC
- OHDSI APAC Steering Committee
- OHDSI Steering Committee
- Oncology
- Patient-Generated Health Data
- Pharmacovigilance Evidence Investigation
- Phenotype Development and Evaluation
- Population-Level Effect Estimation / Patient-Level Prediction
- Psychiatry
- Registry (formerly UK Biobank)
- Surgery and Perioperative Medicine
- Vaccine Safety
- Vaccine Vocabulary
- Women of OHDSI
Common Data Model Workgroup OKRs

- Develop and promote community adoption of CDM v6.x
  - KR1: A list of all changes and additions to be made fully communicated to all stakeholders (Q1)
  - KR2: 100% agreement from all affected workgroups by Q2
  - KR3: Release of DDLs by Q3

- Establish clear by-laws dictating the CDM change process and versioning
  - KR1: Draft initial guidelines for use cases and use case ownership by Q1
  - KR2: Draft initial guidelines for CDM model extension and versioning by Q2
  - KR3: 100% agreement from the community on proposed guidelines by Q4
Population-level Estimation / Patient-level Prediction
Methods Research Agenda

• Methods for vaccine effect estimation
  – Vaccine safety surveillance overall method evaluation (EUMAEUS)
  – Effect of outcome definition operating characteristics on vaccine safety surveillance
  – Comparative vaccine effectiveness in RWD

• Phenotype research
  – Validation of methods for establishing phenotype operating characteristics (e.g. PheValuator, guided patient profile review).

• Prediction
  – Investigate the impact that target and outcome definitions have on prediction models (i.e., are the models stable or unstable to small definition changes)
  – Investigate the use of proxy targets when developing models
  – Establishing a prediction model library

• Small-databases challenges
  – Few exposed: evaluation of balance metrics when counts are low
  – Few exposed: methods for addressing confounding when counts are low (e.g. cardinality matching, dimensionality reduction before PS fitting, informed priors for our PS models)
HADES OKR

• **Objective:** Enable the OHDSI community to perform observational research following OHDSI best practices for characterization, population-level estimation, and patient-level prediction by providing a cohesive set of open-source analytic software

  – **Key result 1:** To reduce dependency on a small number of developers, reduce the maximum number of packages per maintainer to 5
  
  – **Key result 2:** Increase the unit test coverage to > 80% for all packages

  – **Key result 3:** Release 4 study package skeletons, and make sure they are directly available to users
KR1: Expand package ownership:
- 11 different developers maintaining HADES packages

KR2: Test coverage > 80%:
- Great job for the progress!
- Adam Black (Andromeda)
- Chris Knoll (Circe)
- Gowtham Rao (CohortDiagnostics)
- Jamie Gilbert (SelfControlledCohort)
- Martijn Schuemie (SqlRender)

KR1: Expand package ownership:
- Martijn still owns 10 packages
- We need broader support from community to distribute workload

KR2: Test coverage > 80%:
- 14 of 20 packages still don’t meet the HADES target
- More community support in developing test cases is needed
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Top

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Additional resources about OKRs

• Google page: https://rework.withgoogle.com/guides/set-goals-with-okrs/steps/set-objectives-and-develop-key-results/

• Measure What Matters, John Doerr: https://www.whatmatters.com/