Reference Death Archive

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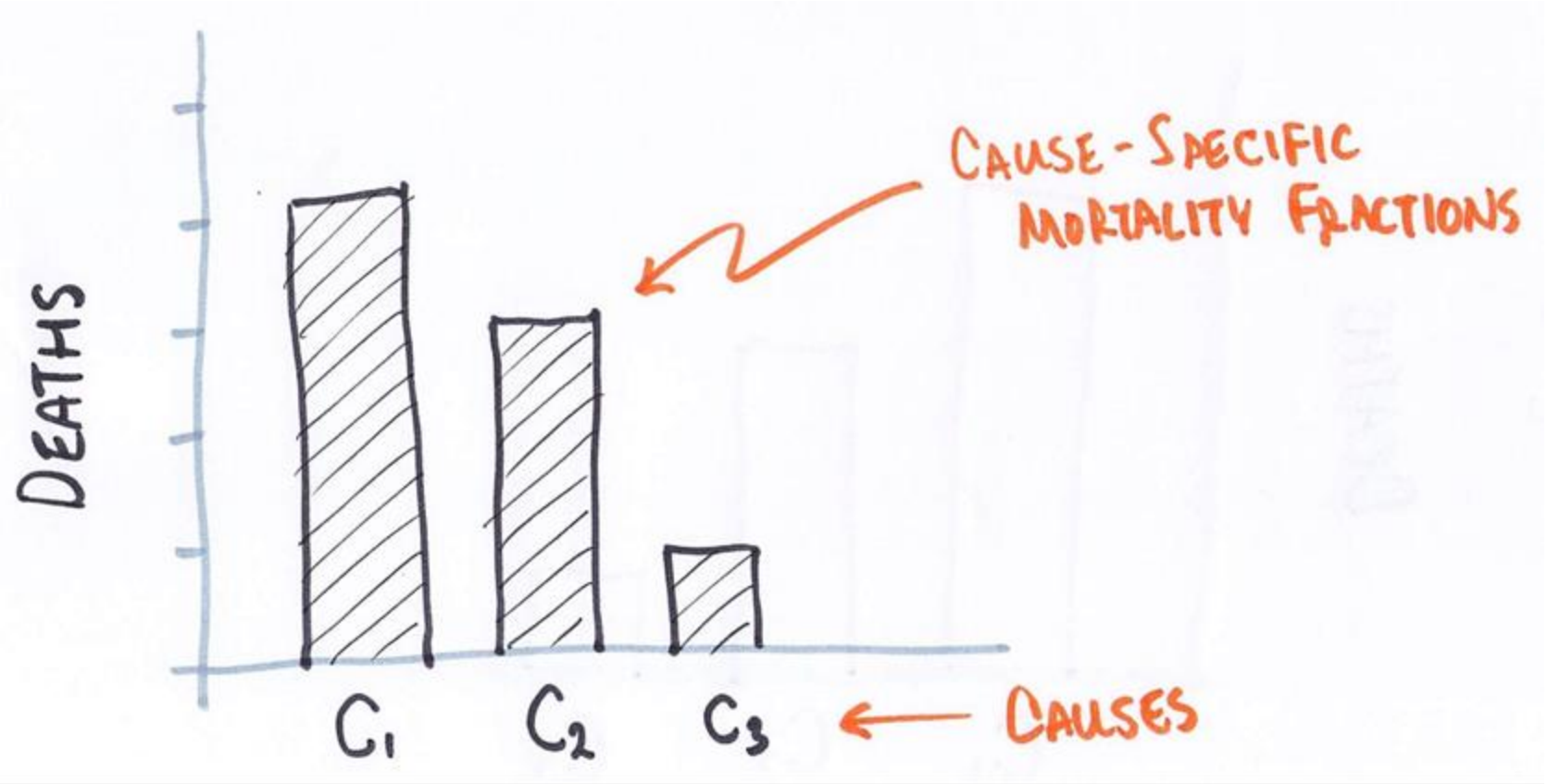
Overview

- Reference Death Archive
  - Verbal autopsy
  - Symptom-cause information
  - Reference Death Archive
- Progress
- Expectations for MITS Alliance Sites

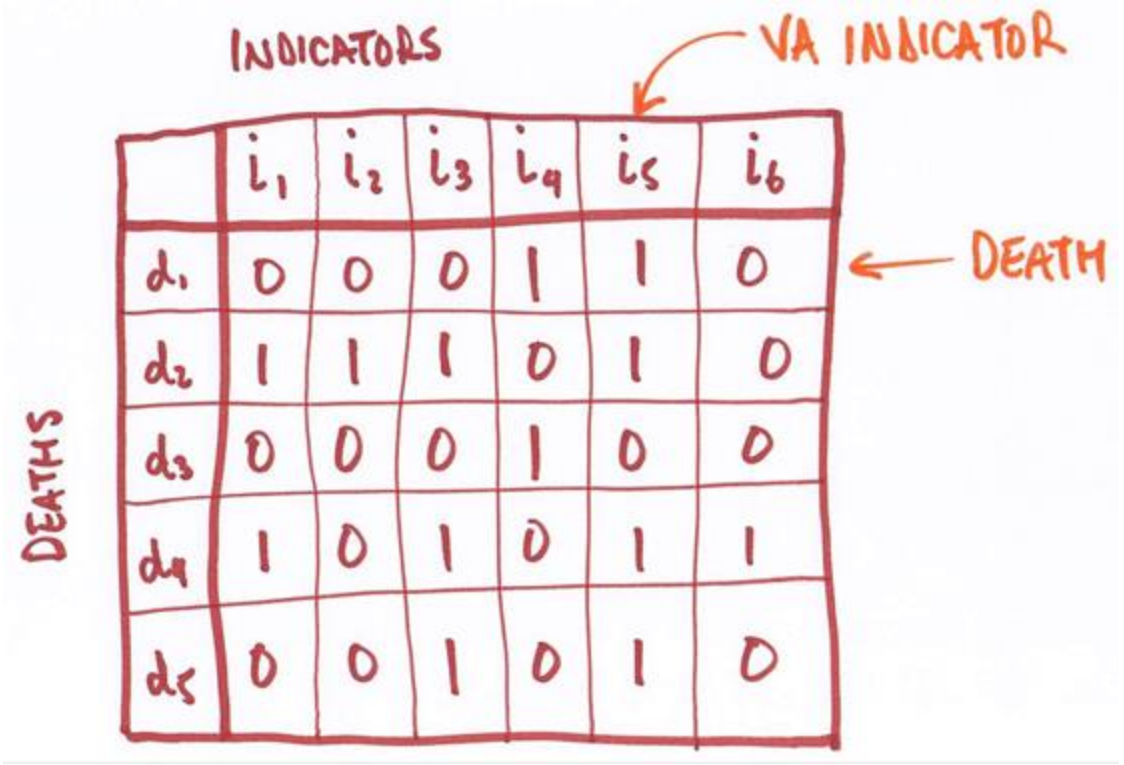
Burden of disease - **BOD**



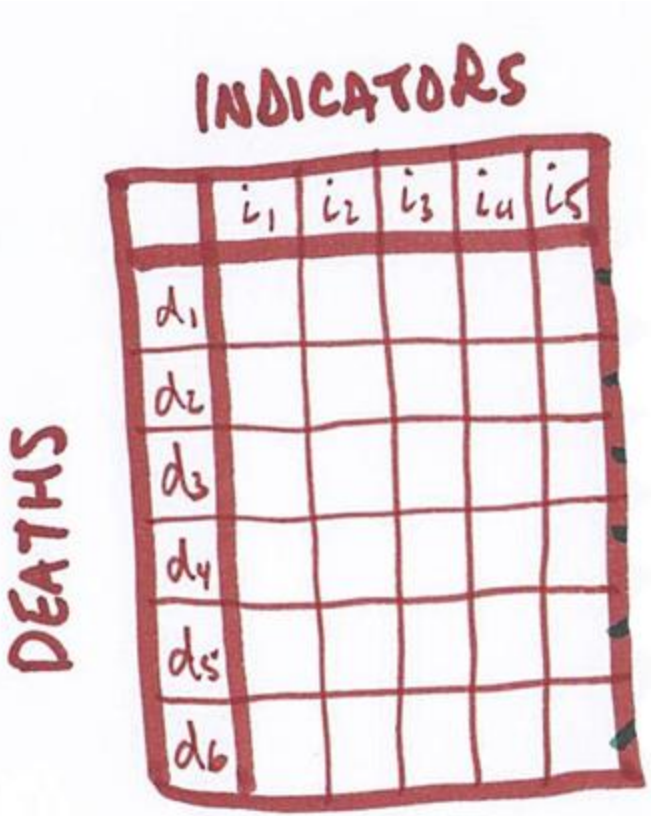
Verbal autopsy - **VA**

- Interview with carers of decedent
- Closed questions and free-form account (narrative)
- Results in VA **indicators**
- **Feasible for at-scale, routine mortality surveillance**

- **How do we move from VA indicators to BOD**



VA cause classification



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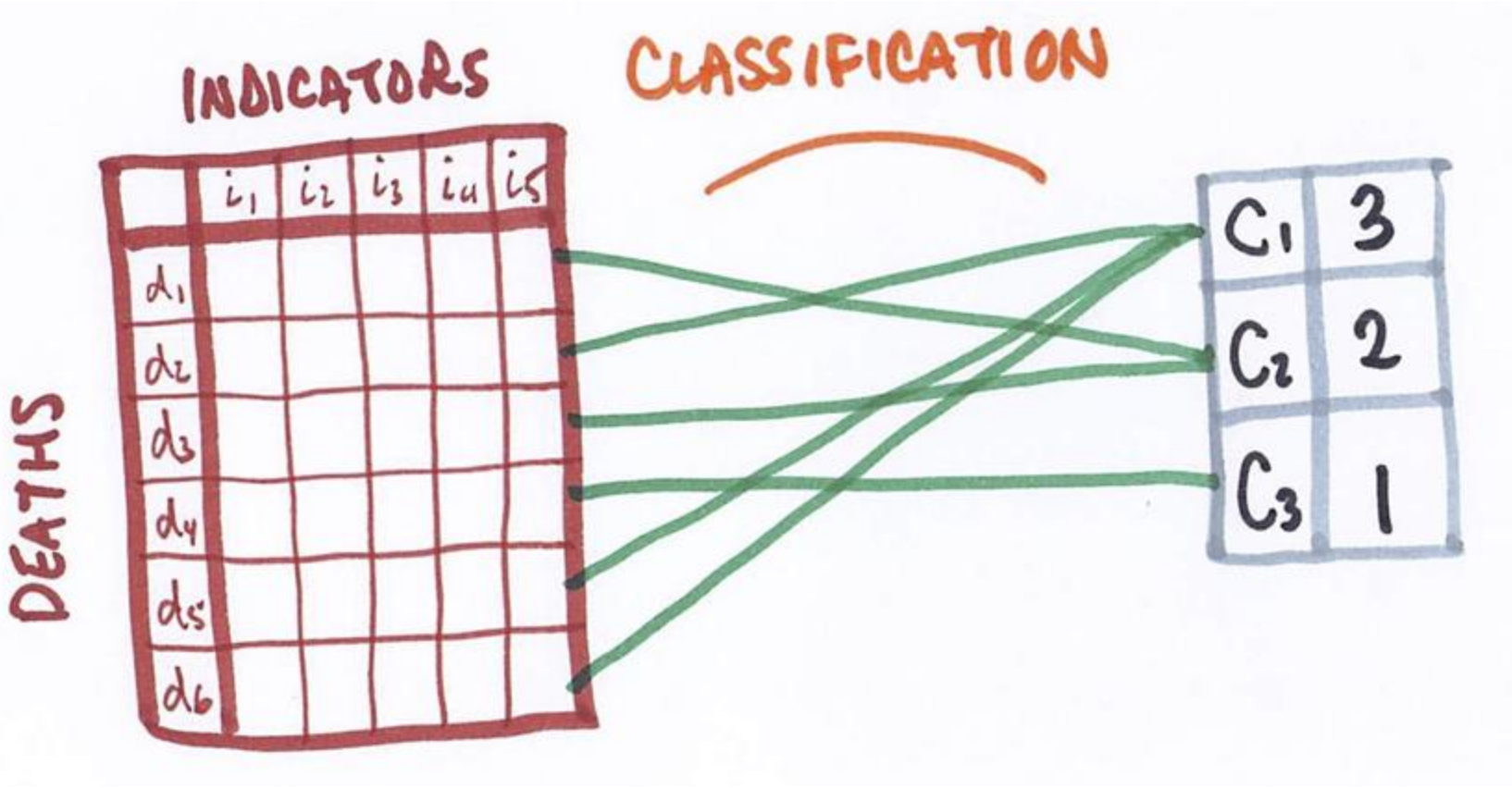
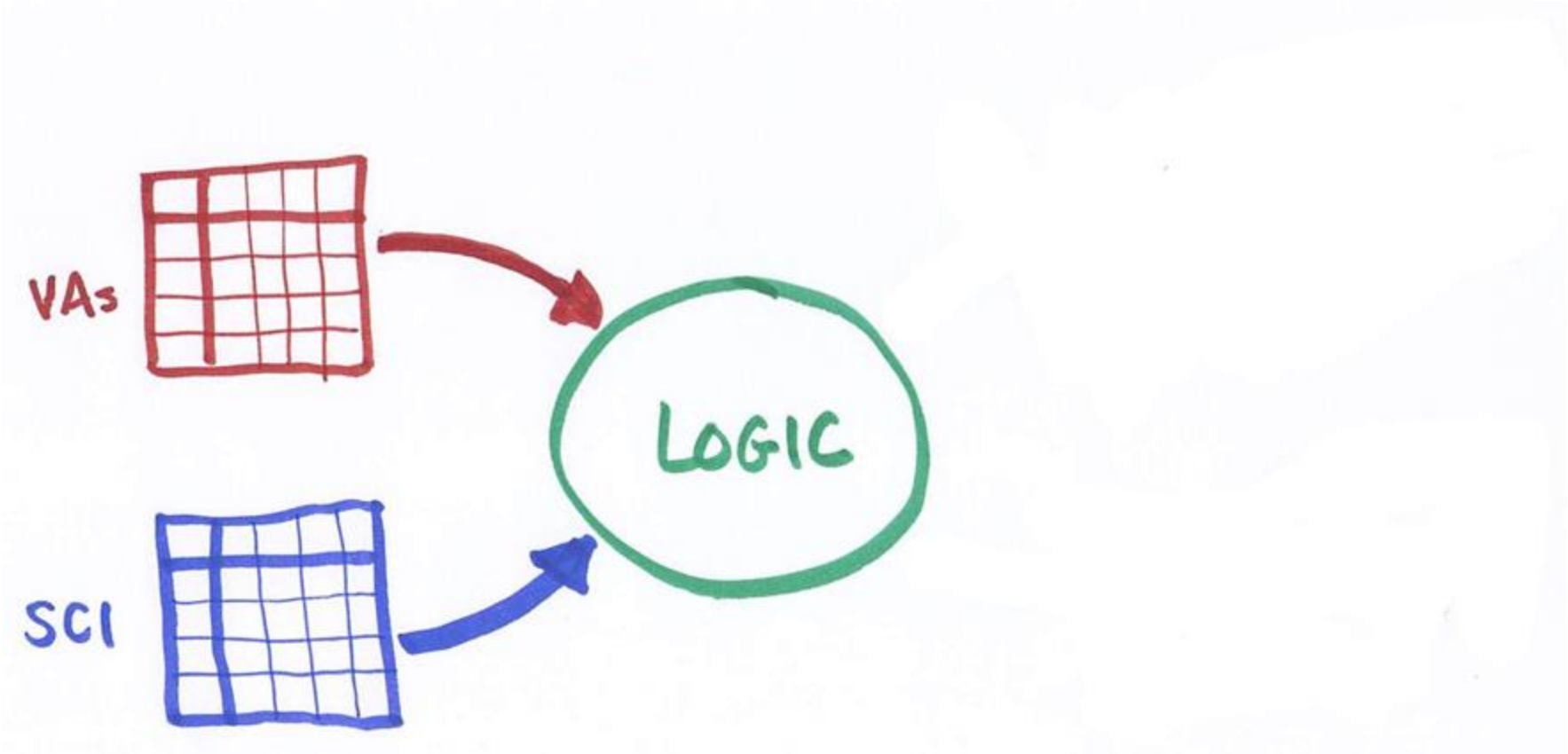


Two approaches to VA classification

1. Physician-coded VA - **PCVA**
    a. VA interviews read by 1-2 physicians
    b. Consensus process
    c. Identifies comparatively specific causes
    d. Expensive, time-consuming, not replicable, and takes physicians from patients
    e. Not feasible for at-scale mortality surveillance
2. Computer-coded VA - **CCVA**
    a. Computer algorithm processes VAs to identify causes and cause-specific-mortality fractions
    b. Identifies comparatively less specific causes
    c. Cheap, fast, replicable, and no opportunity costs
    d. Only feasible means of cause ascertainment for at-scale mortality surveillance where traditional cause ascertainment not possible (e.g. autopsy, medical record review, etc.)

Computer-coded VA



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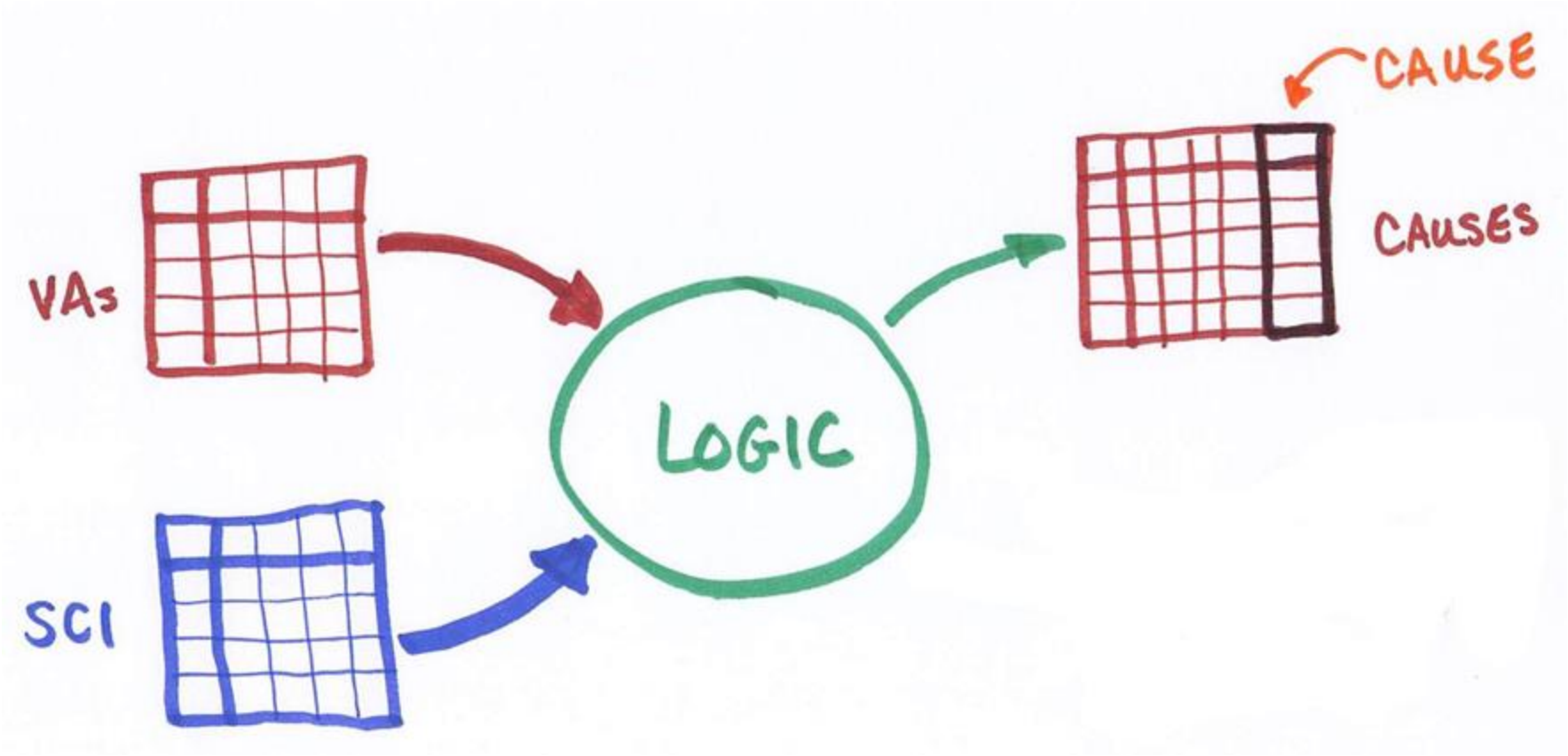
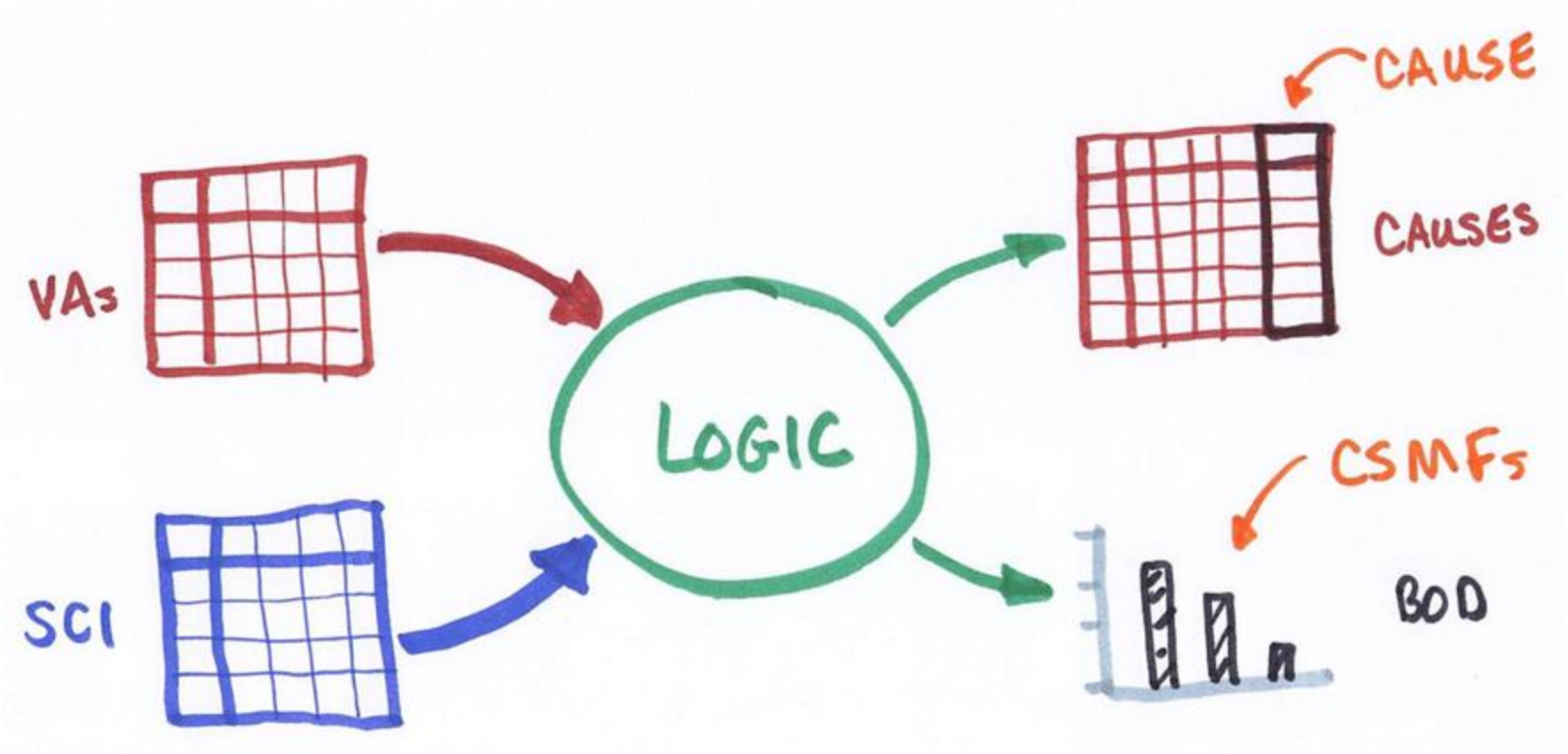
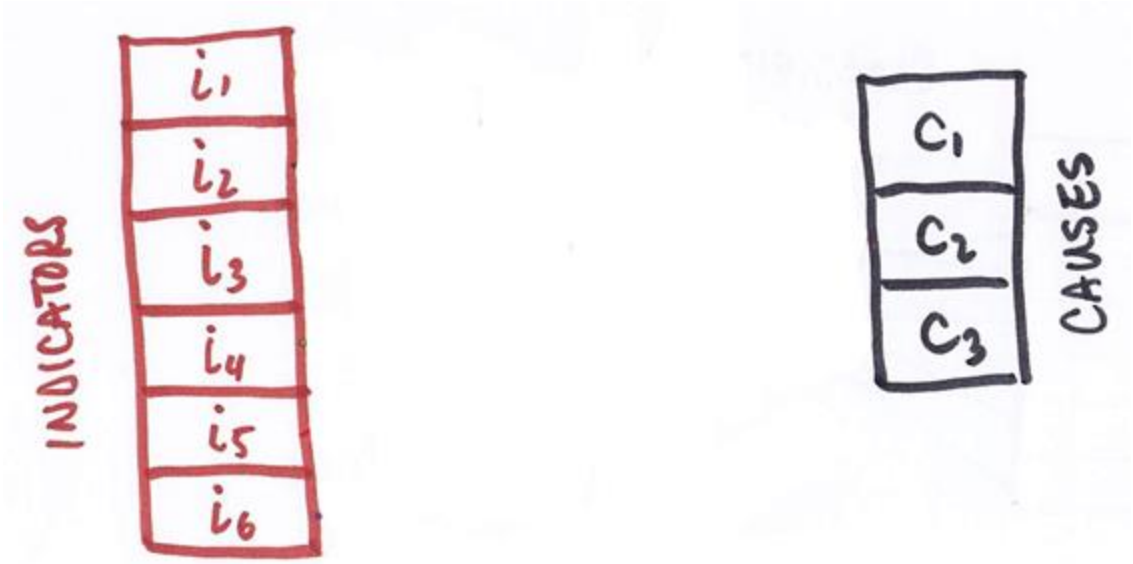


Computer-coded VA



Symptom-cause information - **SCI**



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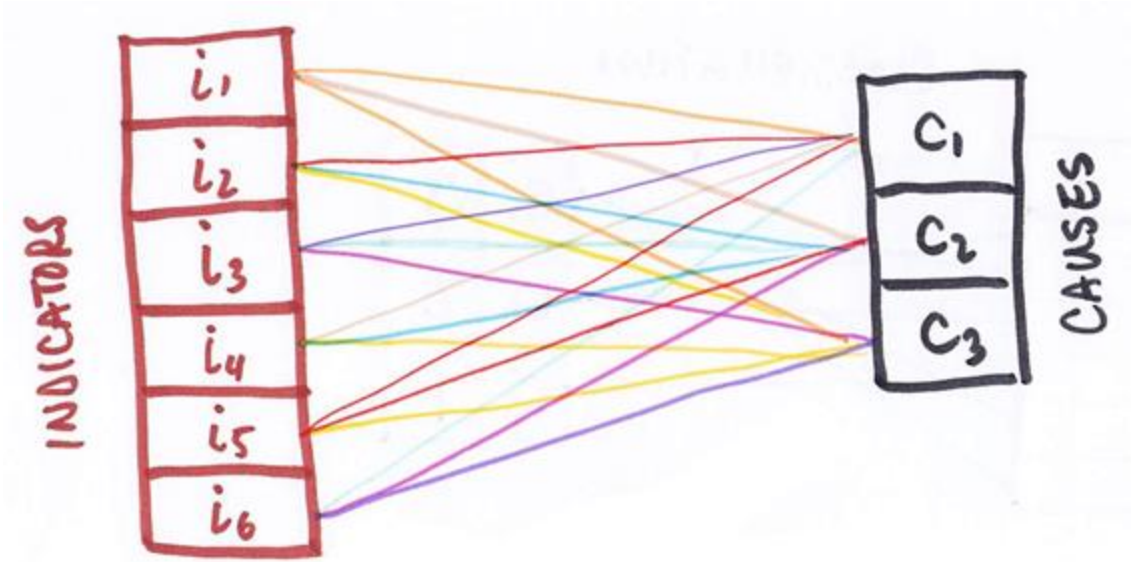

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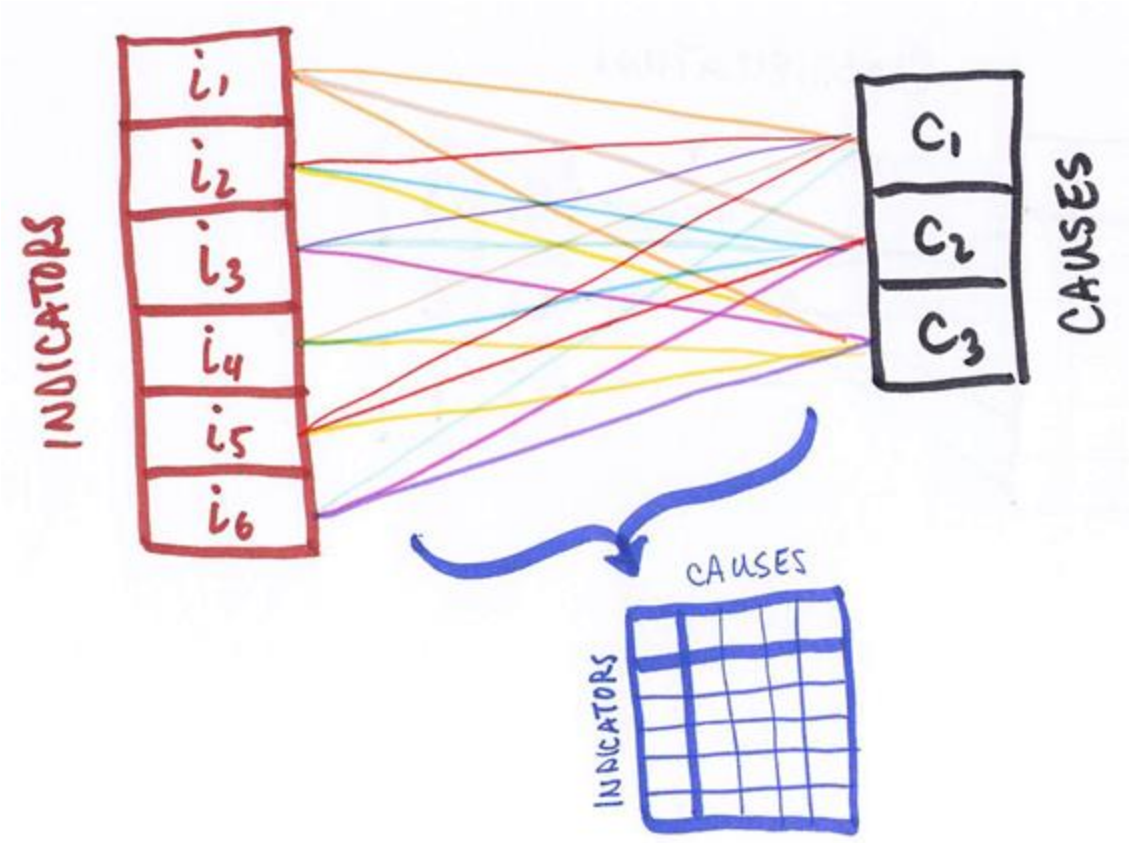

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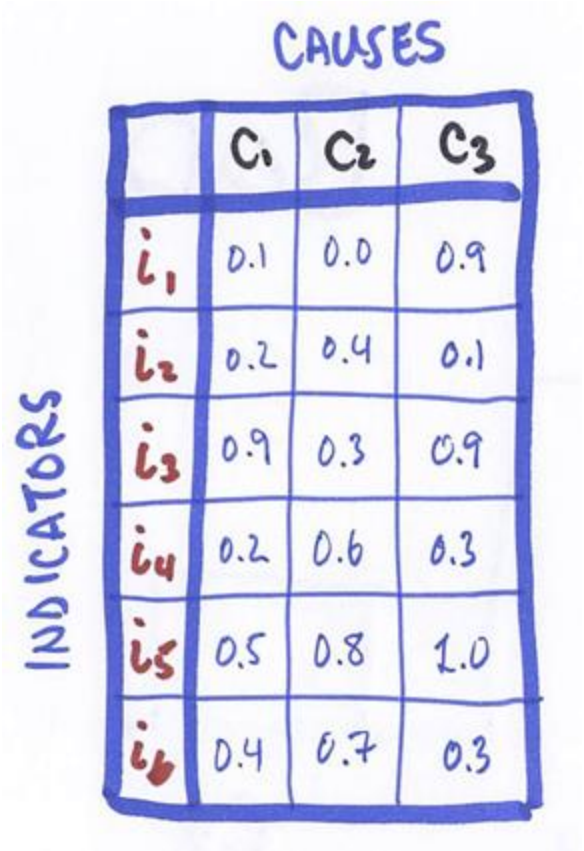


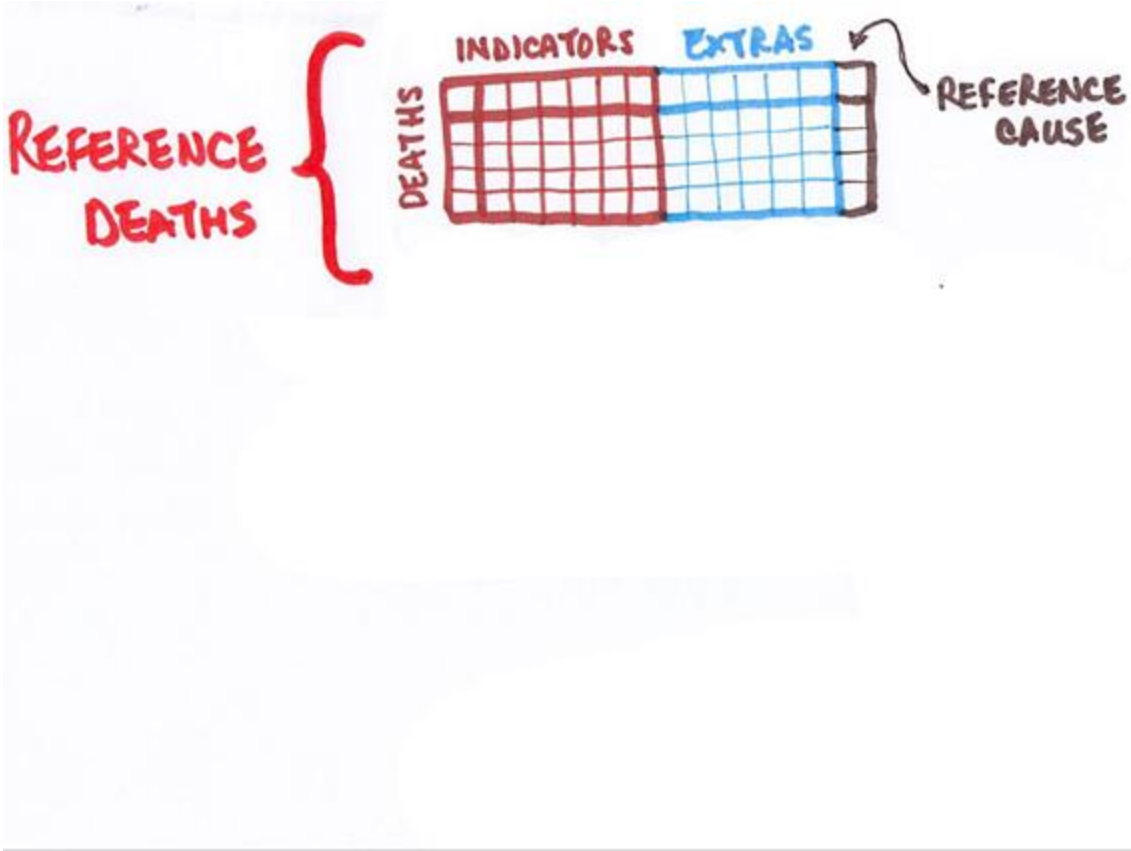
	C_1	C_2	C_3
i_1	0.1	0.0	0.9
i_2	0.2	0.4	0.1
i_3	0.9	0.3	0.9
i_4	0.2	0.6	0.3
i_5	0.5	0.8	1.0
i_6	0.4	0.7	0.3

Two approaches to creating SCI

1. Ask physicians directly
    a. Consists of Pr(s|c)
    b. Potentially applicable to wide variety of circumstances
    c. Cheap and comparatively easy to do
    d. Comparatively less information

2. Calculate from **reference deaths**
    a. Reference deaths have VA and independently-ascertained reference cause
    b. SCI can be calculated directly from reference deaths
    c. Only applies to circumstances where/when reference deaths ocurred
    d. Comparatively difficult to acquire enough reference deaths with adequate coverage of causes and circumstances
    e. Comparatively (much) more information

Reference death archive - **RDA**



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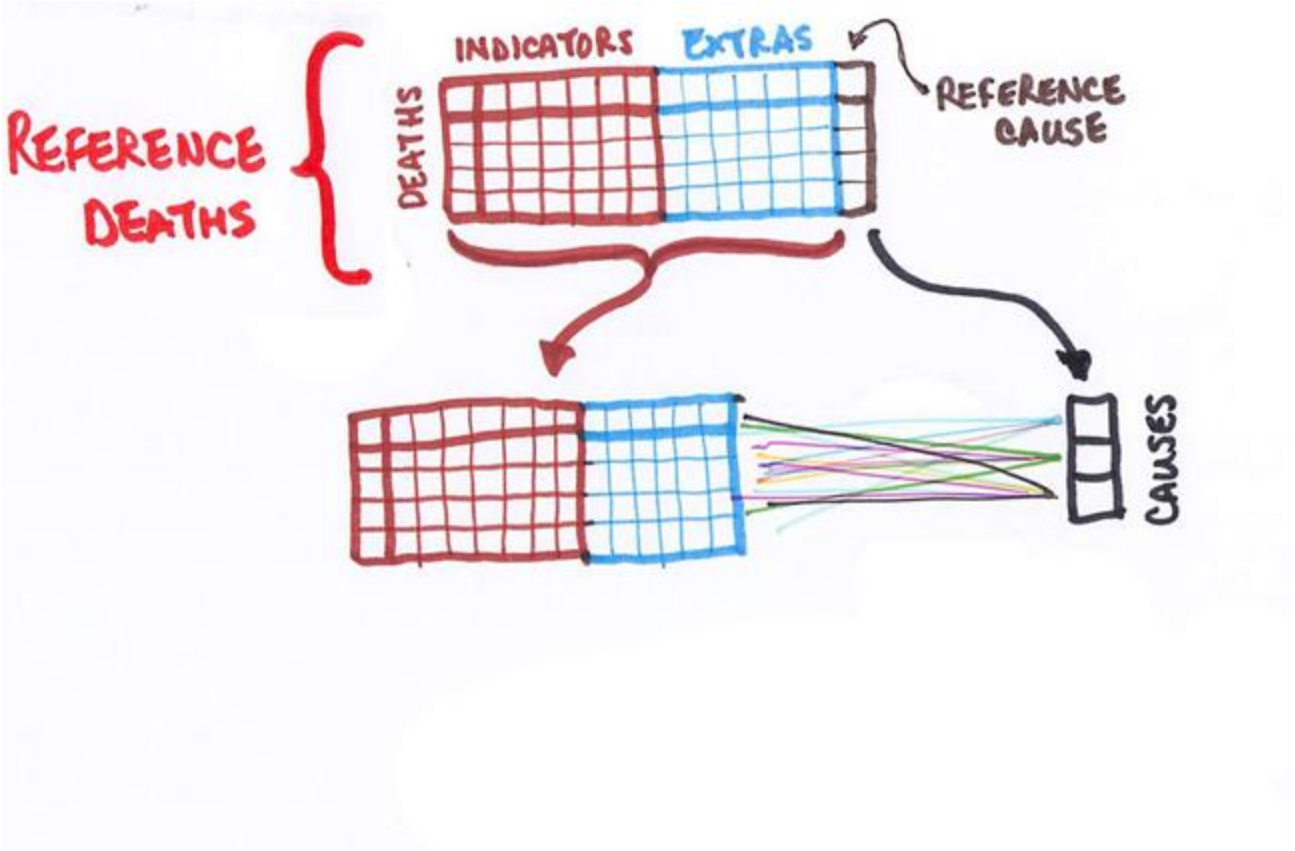

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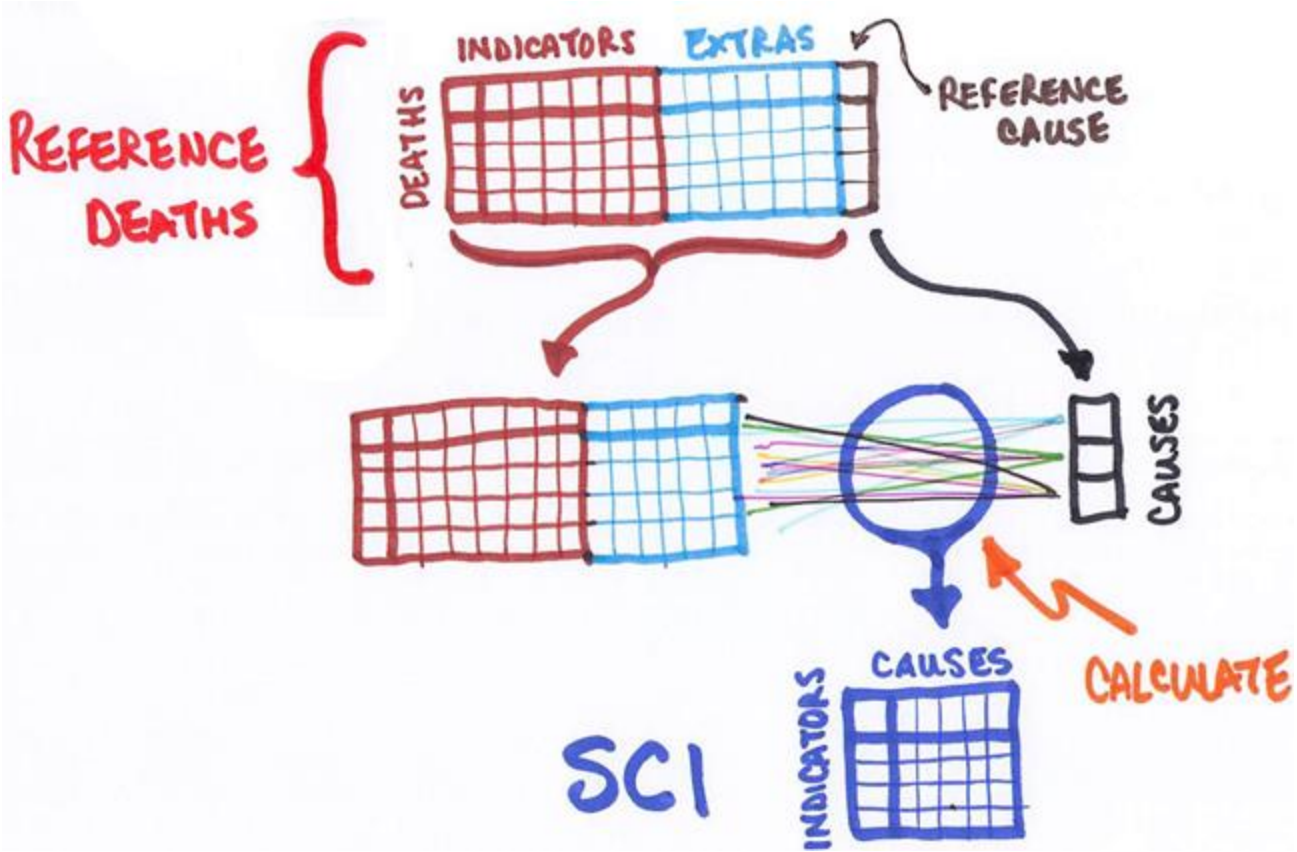
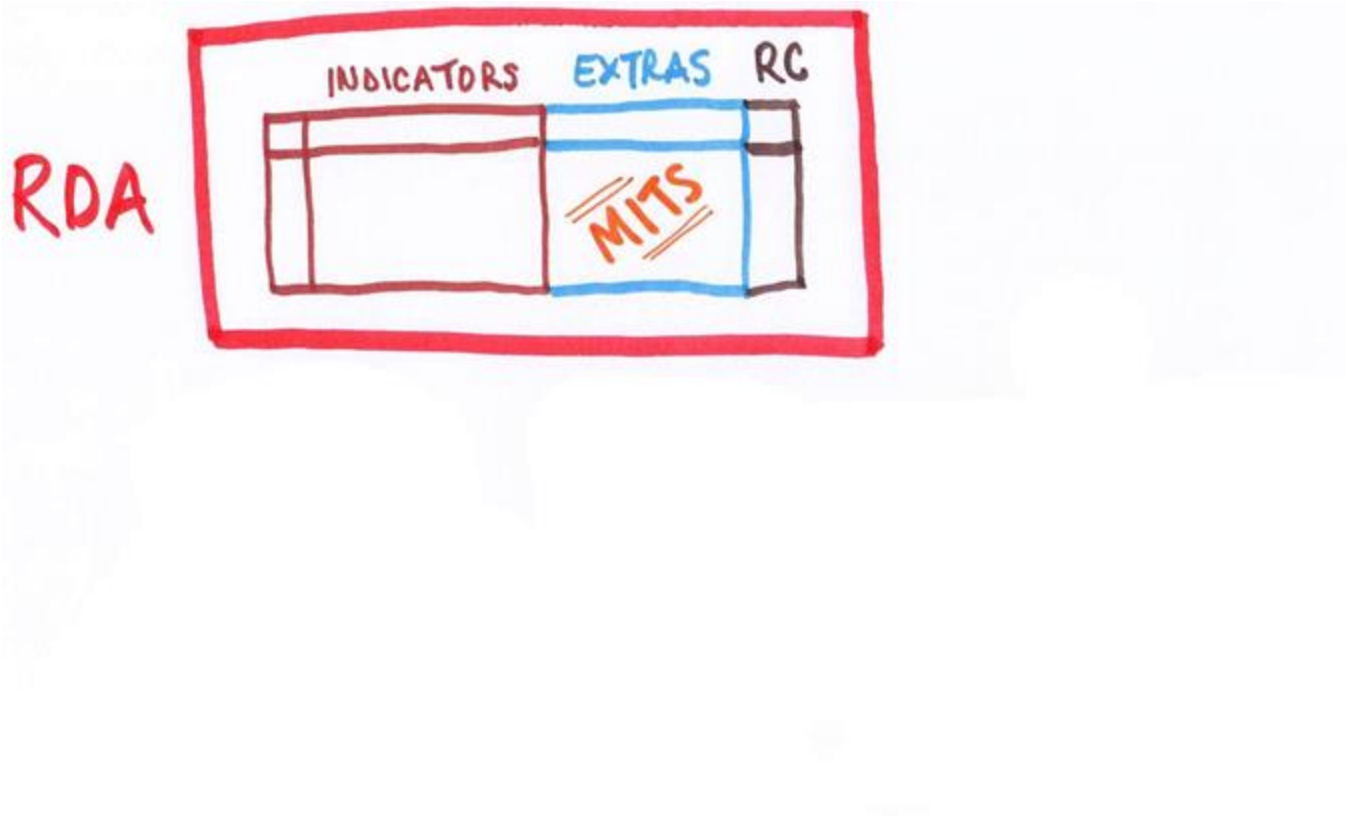


Operating the **RDA**



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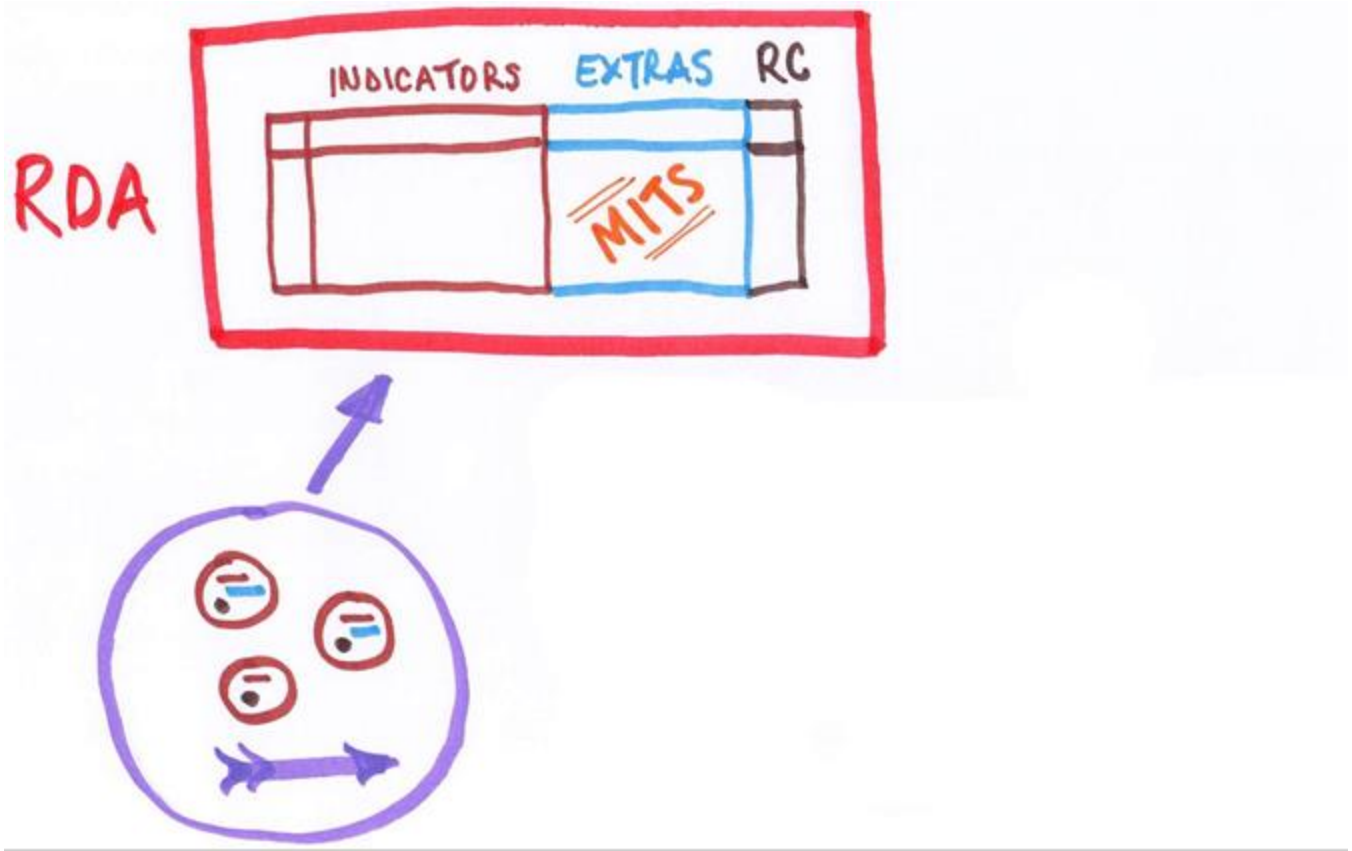

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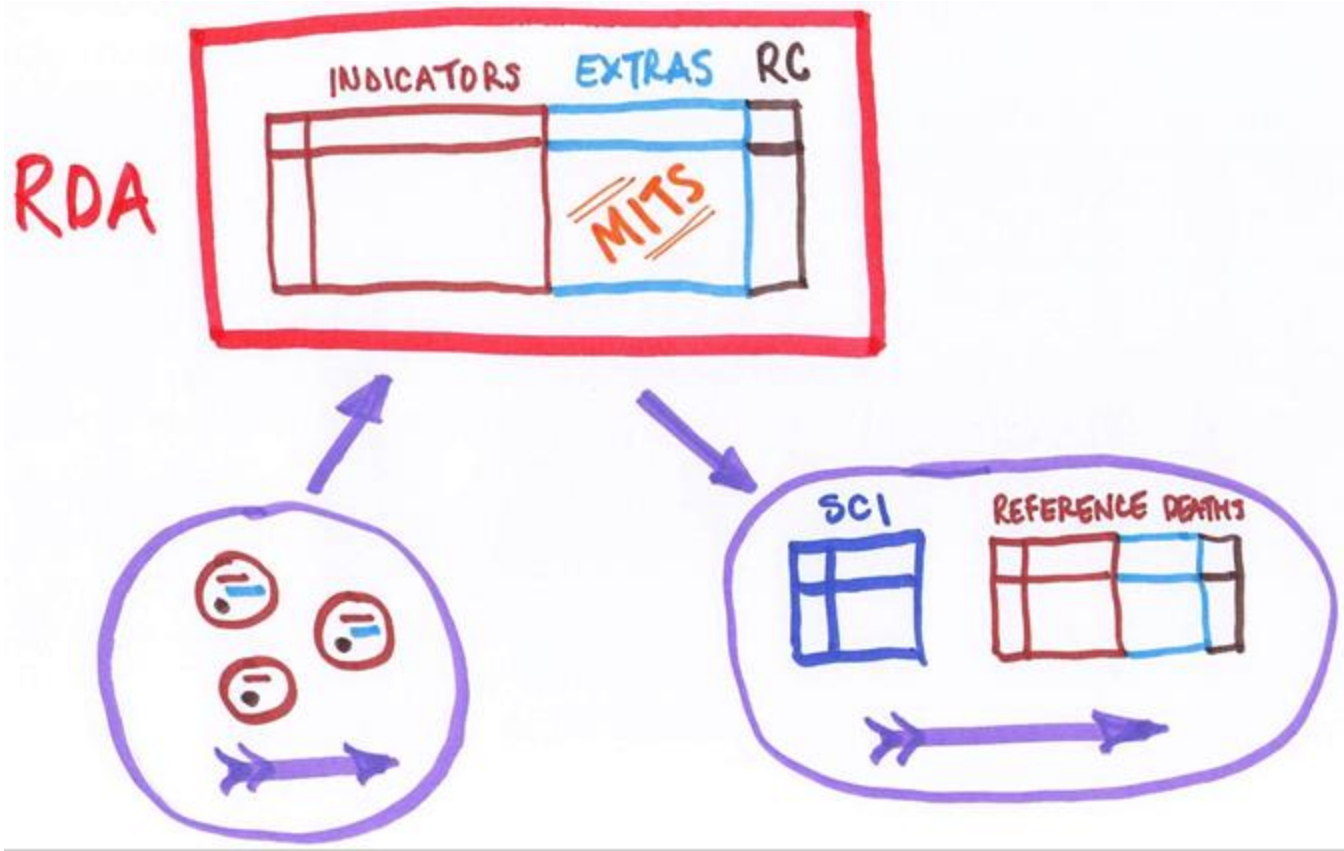

Progress building RDA

- Database design - done
  - Schema
  - Data ingestion procedures/code
  - Data transformation (standardization) procedures/code
- Pilot RDA with data from CHAMPS and COMSA - done
  - Discovered issues with data quality
- Set up project with Sao Paulo mortality surveillance unit
  - Rapidly produce many reference deaths with MITS
  - Producing data by end of the year
- Starting work with WHO to host RDA at WHO in Geneva
  - GUI interface, various outputs
- Work on data use agreements, informed consent, and ethics ongoing

Expectations for MITS Alliance sites

- MITS Alliance sites will be important, valuable contributors to RDA
- WHO 2022 standard VA
- MITS Alliance standard MITS
- Informed consent that allows sharing through the RDA
- Data use agreements that govern sharing
  - Site to MITS Alliance
  - MITS Alliance to RDA (or directly to RDA)
  - RDA to researchers and VA users in the future
- Timeframe
  - RDA will be ready to take MITS Alliance data by end of 2023
  - Sites and MITS Alliance finalize DUAs by end of 2023
  - Share MITS Alliance site data with RDA as soon as sites are ready in 2024

Questions