CountryData – Technologies for Data Exchange

DevInfo Data Structure & Mapping Tool

Overview

- DevInfo background
- DevInfo architecture
  - IUS
  - IUS best practices
  - CountryData project findings
- SDMX compliance
  - Mapping Tool

DevInfo

- Software supported and promoted by UNICEF
- DevInfo7 launched in Nov 2012
  - SDMX 2.1 & 2.0 compliant
  - Web base software
  - 9 out of 11 project countries using DevInfo
  - Stable version compare to previous releases

DevInfo Architecture Overview

- IUS: Indicator Unit Subgroup
  - Time series data is stored with the combination of the 3 dimension.
    - Indicator
    - Unit
    - Subgroup: Combination of one or more sub-dimension.

DevInfo Architecture Overview

- **IUS**: **Indicator** Unit Subgroup
- Indicator:
  - Infant Mortality
  - AIDS Death
  - Malaria Death
- Similar to code list in DSD
  - Contains only Indicator specific values

DevInfo Architecture Overview

- **IUS**: Indicator **Unit** Subgroup
- Unit:
  - Percentage
  - Number
  - USD
  - Square KM
- Similar to code list in DSD
  - Contains only Unit specific values

DevInfo Architecture Overview

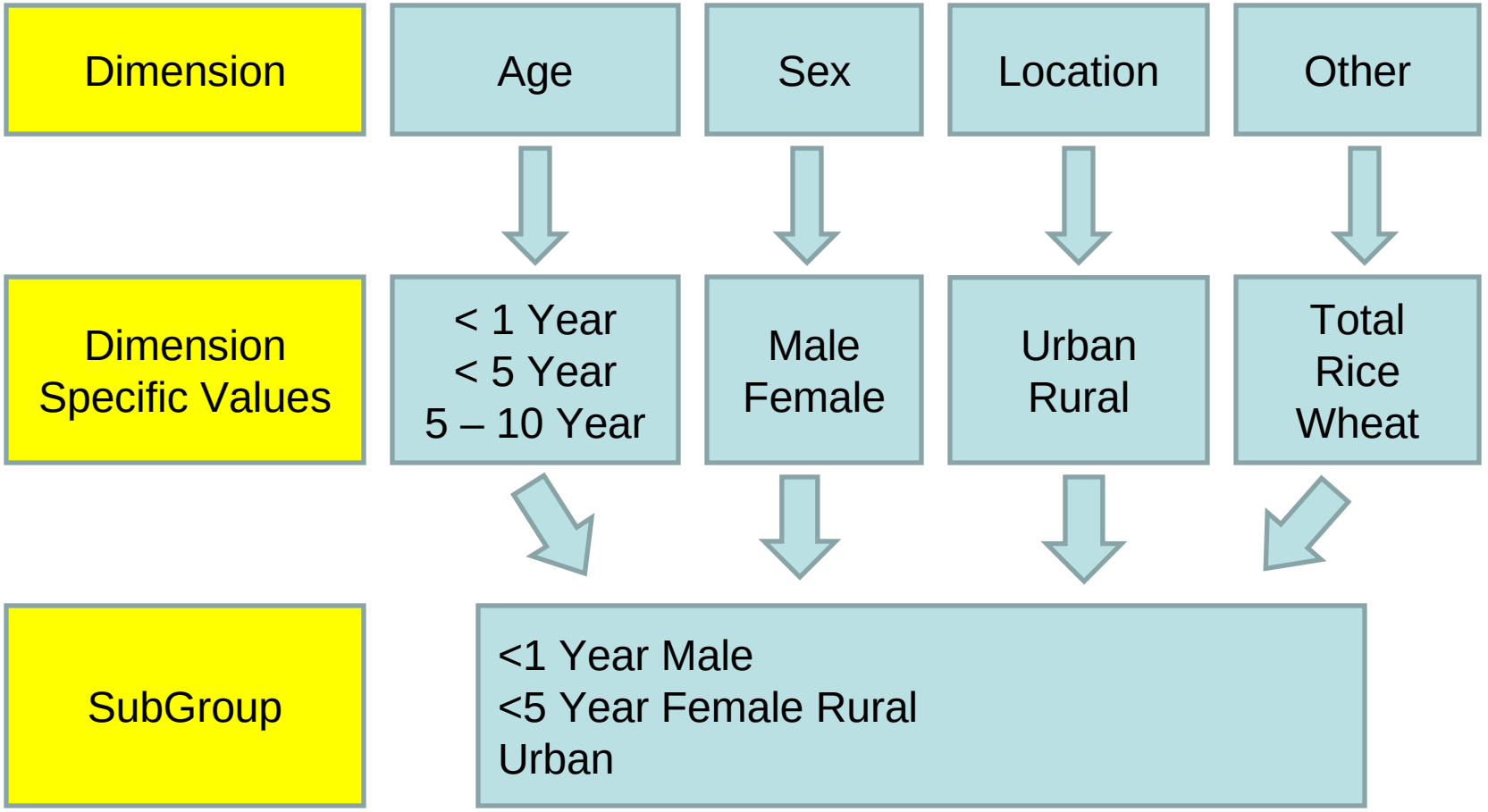
- **IUS**: Indicator Unit **Subgroup**
- SubGroup Dimension:
  - Consists one or more Dimensions (excluding Indicator and Unit dimension)
  - Age, Sex and Location: Example of sub Dimension
  - Each sub dimension contains their own dimension specific values. Similar to code list in DSD

DevInfo Architecture Overview

- **IUS**: Indicator Unit **Subgroup**
- SubGroup Dimension:
  - "Other" Dimension:
    - by default DevInfo provides this dimension to cover any other country specific dimension.
  - Custom Dimension:
    - DevInfo provide functionality to create custom dimension as well which can be used in Subgroup formation logic

DevInfo Architecture Overview

- **IUS**: Indicator Unit Subgroup
- Formation Logic:



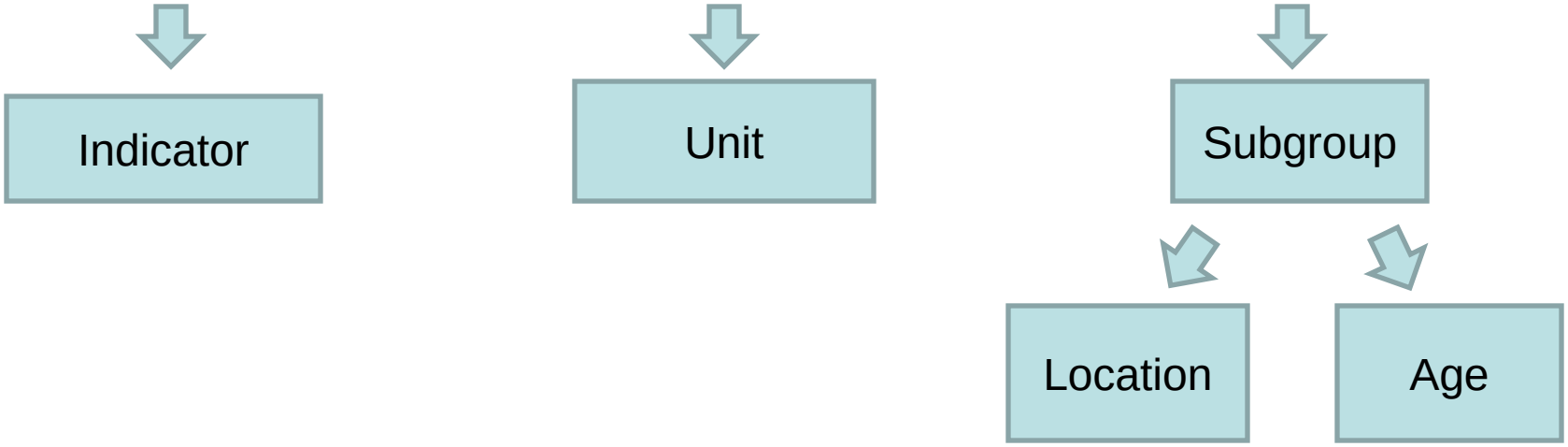
DevInfo IUS Overview

- IUS: Indicator Unit Subgroup

Example:

Time Series (Country: Rwanda)	**1990**	**1995**	**2000**
Malaria Deaths Per 100,000 Population Urban 5-10 Year	50	55	40

Malaria Deaths Per 100,000 Population Urban 5-10 Year



Mapping Tool: Introduction

- Maps DSD CodeLists with IUS
- Provides a means to generate SDMX compatible files which conforms to Data Structure Definition

Mapping Tool: CountryData Code List

- DSD contains collection of Code List
- Following Codelist are used in Mapping Tool:
  - Indicator
  - Unit
  - Age
  - Sex
  - Location
  - Area
- Does not contain the combination of Code List (like subgroup in DevInfo)

Mapping Tool: CountryData Code List

SEX CodeList	
NA	Not applicable
F	Female
M	Male
T	Both sexes

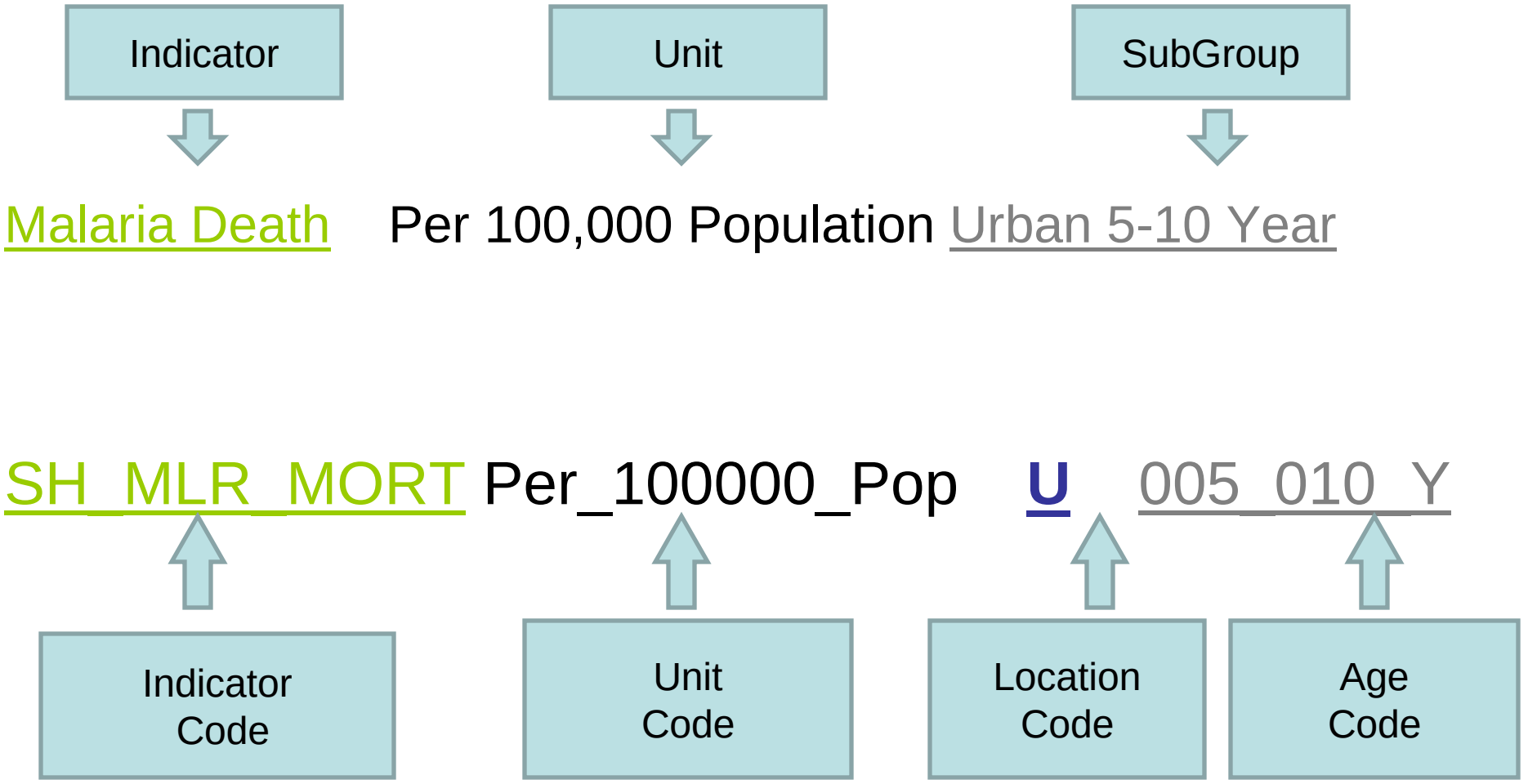
Location CodeList	
T	T Total (national level)
U	U Urban
R	R Rural

AGE CodeList	
NA	Not applicable
000_099_Y	All age ranges
000_006_M	under 6 month olds
000_005_Y	under 5 year olds
000_001_Y	under 1 year olds
000_018_Y	under 18 year olds
000_006_Y	under 6 year olds
010_005_Y	10-14 year olds
015_005_Y	15-19 year olds
015_010_Y	15-24 year olds
015_035_Y	15-49 year olds
006_054_M	6-59 months old
006_009_Y	6-14 year olds
005_013_Y	5-17 year olds
015_050_Y	15-64 year olds

UNIT CodeList	
NA	Not applicable
CUR_LCU	Local currency
USD	USD
NUMBER	Number
RATIO	Ratio
PERCENT	Percent
KM2	Square kilometers
T	Metric Tons
PER_100_LIVE_BIRTHS	Per 100 live births
PER_100_POP	Per 100 population
PER_1000_LIVE_BIRTHS	Per 1,000 live births
PER_1000_POP	Per 1,000 population
PER_100000_LIVE_BIRTHS	Per 100,000 live births
PER_100000_POP	Per 100,000 population

Indicator CodeList	
SH_HIV_INCD	HIV incidence rate
SH_MLR_MORT	Notified cases of malaria
SE_ADT_1524	Literacy rate
SE_PRM_CMPL	Primary completion rate

Mapping Tool: DevInfo IUS vs UNSD CodeList



Mapping Tool: CountryData Code List

- Note about following Code List:
  - Nature
  - Frequency
  - Source Type
  - Unit Multiplier
- Mapping done at time series level

Mapping Tool: DevInfo IUS vs UNSD CodeList

- DevInfo version

Time Series	1990	1995	2000
Malaria Deaths Per 100,000 Population Urban 5-10 Year	50	55	40

- SDMX message

```
- <Series SERIES="SH_MLR_MORT" UNIT "Per_100000_Pop" GROUP="005_010_Y" SEX="T" LOCATION="U" FREQ="A" SOURCE_TYPE="NA" REF_AREA="XYZ">
    <Obs TIME_PERIOD="1990" OBS_VALUE="50" NATURE="C" UNIT_MULT="0" TIME_DETAIL="1990" SOURCE_DETAIL="X" FOOTNOTES="" />
    <Obs TIME_PERIOD="1995" OBS_VALUE="55" NATURE="C" UNIT_MULT="0" TIME_DETAIL="1995" SOURCE_DETAIL="X" FOOTNOTES="" />
    <Obs TIME_PERIOD="2000" OBS_VALUE="40" NATURE="C" UNIT_MULT="0" TIME_DETAIL="2000" SOURCE_DETAIL="X" FOOTNOTES="" />
  </Series>
```

Best Practices for IUS

- Dimensions design
- Dimensions values
  - Age Dimension
    - Under 1 year
    - Under 5 year
  - Sex Dimension
    - Male
    - Female
    - Both Sex

Best Practices for IUS

- Common Errors
  - Age Dimension
    - Under 5 year
    - Under 1 year
    - Under 5 year Male
    - Under 15 year
  - Sex dimension
    - Male
    - Female
    - Boy

Best Practices for IUS

- Issues with wrong SubGroup values
  - Database design not accurate
    - Leads to duplication of same code in different dimensions
  - Mapping tool can not map mismatched dimensions
- Result:
  - Extra effort requires to generate SDMX files

Mapping Tool : Case Study