The panel that caught a wrong number in this course

Two artefacts on this platform computed improved water coverage from the same file and got 82.3% and 79.7%. The technical documentation was right and the lesson was wrong, and nothing except a definition panel and a second computation would have found it.

Pierre Robentz Cassion

Lesson 4 of 8

Dashboards and Reporting — What travels with the number

What this lesson covers

- What happened
- Why the documentation was the one that was right
- What a definition entry contains
- Where the panel lives
- The check the panel makes possible
- The argument this prevents every month
- Report it whole
- What comes next

What happened — In Python

```
# What the lesson had
IMPROVED = {
    "piped-into-dwelling", "piped-into-yard", "public-tap",
    "borehole", "protected-well", "protected-spring",
}
```

What happened — In R

```r
# What the JMP definition actually lists
improved <- c("piped-into-dwelling", "piped-into-yard", "public-tap",
              "borehole", "protected-well", "protected-spring",
              "tanker-truck")     # packaged or delivered water
```

What happened

- The JMP improved list includes packaged or delivered water — which is `tanker-truck` in this dataset
- Nothing detected it for months — The lesson was internally consistent, the figure agreed with the lesson because it...

Why the documentation was the one that was right — Example

```
### 2.1 Improved source

| Numerator   | Households whose main drinking water source is piped, borehole,
|             | protected well, protected spring, rainwater or packaged water
| Denominator | All surveyed households
| Value       | 0.823
| Valid at    | Household, community, district
| Standard    | WHO/UNICEF JMP service ladders
```

Why the documentation was the one that was right

- Writing "or packaged water" in prose made it checkable against the standard — A Python set of six strings does not read...
- That is the whole argument for the panel — It is not documentation of the code — it is the specification the code is...

What a definition entry contains

Field	Example
Numerator	Households with an improved source and a round trip of 30 minutes or less
Denominator	All surveyed households
Value	0.563
Valid at	Household, community, district
Standard	JMP service ladders; SDG 6.1.1
Decision informed	Which communities receive rehabilitation

What a definition entry contains

- "Valid at" prevents the commonest misuse — A number computed at district level and quoted at community level is the...
- "Decision informed" is what justifies the indicator existing — The WASH documentation writes "None

Where the panel lives

Where	What it holds
On the dashboard	One clause per tile — "improved and within 30 minutes"
In the technical documentation	The full entry, six fields, per indicator
In the code	A comment naming the standard and the reason

Where the panel lives — In Python

```
# The JMP improved list, which includes packaged or delivered water --
# `tanker-truck` here. Omitting it understates improved coverage by 2.6
# points and disagrees with the project's own indicator documentation.
IMPROVED = {...}
```

Where the panel lives — In R

```
# The comment is what makes the next reader check rather than assume.
```

Where the panel lives

- The tile clause is what a reader sees; the document is what a challenger reads; the comment is what the next analyst. . .

The check the panel makes possible

- Compute the indicator twice, from different code, and compare — That is what found the error here, and it is a check...

The check the panel makes possible — In Python

```
from_pipeline = summary["basic_service"]
from_documentation = 0.563          # the value the definition panel states
assert abs(from_pipeline - from_documentation) < 0.001, (
    f"pipeline {from_pipeline:.3f} disagrees with the definition panel"
)
```

The check the panel makes possible — In R

```
stopifnot(abs(basic_service - 0.563) < 0.001)
```

The check the panel makes possible

- A stated value in the definition panel is a test fixture — Once the panel carries the number, any pipeline that...
- And when they disagree, decide which is authoritative before changing either — Here the standard settled it: JMP lists...

The argument this prevents every month

"Coverage is 82%." — "We reported 76% last quarter." — "That was a different definition." — "Which one is right?"

The argument this prevents every month

- Both are right and they are different indicators — Without a panel that conversation takes twenty minutes every quarter. . .
- The commonest three disagreements in this sector — all of which a panel settles:
- Source against service — Improved source, 82.3%
- Numerator population against denominator population — Gross enrolment of 109.2% is a projected denominator, not more. . .
- Screening against survey — A screening rate is not a prevalence estimate, and the nutrition dashboard here says so in. . .

Report it whole — Example

Indicator definitions

Full definitions in docs/indicator-definitions.md: numerator, denominator, the level it is valid at, the standard applied, and the decision it informs, for each of the nine indicators in this report.

Each dashboard tile carries the definition compressed to one clause.

The pipeline asserts its computed values against the values stated in the definitions document. A disagreement fails the build rather than reaching a report.

Change log: 2026-07-29, improved source corrected from 79.7% to 82.3%. Delivered water (tanker truck) was omitted from the JMP improved list. The definitions document had it right; the analysis code did not.

Report it whole

- The change log entry is the part worth copying — An indicator that changed definition needs a dated line saying what...

What comes next

- The dashboard answers a question.

Read the full lesson, with runnable code

https://data-analysis.cassion.dev/courses/dashboards-and-reporting/dash-04-the-definition-panel