

Data Quality

Setting the stage for the DHIS2 Data Quality
Academy

Overview

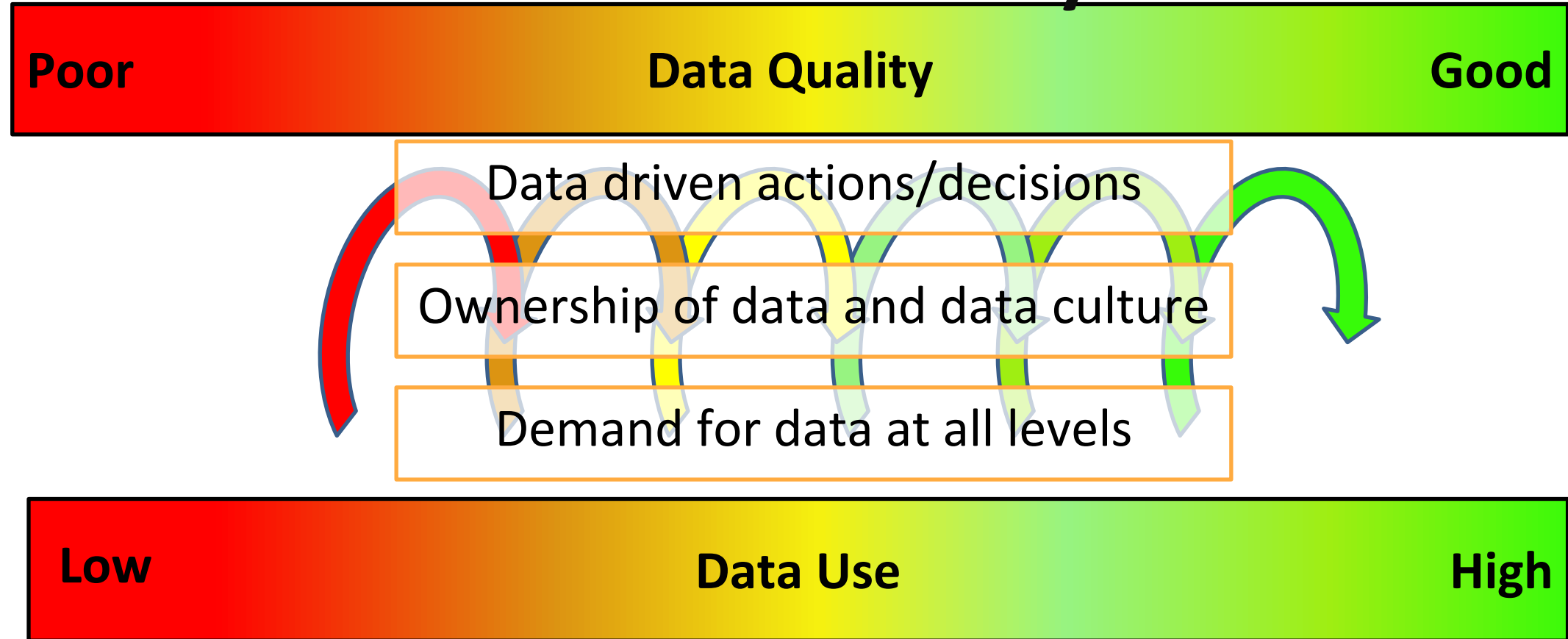
For these themes, we will discuss in plenary

- Definitions
- Implications
- Causes
- Strategies

Why is it important address data quality?



Virtuous Data Cycle



When feedback loops are established, Interventions exhibit higher uptake and better traction.

Why do you think HMIS data is often poor quality?

- Poor form design, poor system design, high reporting burden. → The people who made the system do not use it.
- People do not feel accountable for data → They are receiving any feedback or notifications that the data is being checked.
- People (CHWs, facility staff, district staff) do not feel ownership for data → They are not using it and they do not see proof that it is being used.
- Data is not trusted → People assume it is bad because they do not understand how the data is captured and what management controls are exercised.
 - They do not see any indication of data quality issues.
 - They can not see the problems because there is no transparency into the data quality issues.

How do you define good data quality?

- Data is of high quality when it is fit for its intended uses (operations, decision making, planning)
- What makes it "fit"?

Data Quality Dimensions

- Completeness
 - Expected comprehensiveness. "Enough to make (good) decision"
 - Somewhat measurable in DHIS2
- Timeliness
 - Available when it is expected and needed
 - Somewhat measurable in DHIS2

Data Quality Dimensions

- Consistency
 - Data across all systems reflects the same information and are in synch
- Conformity
 - Data is following a set of standard definitions
 - "Malaria" vs. "Confirmed Malaria"?
- Accuracy
 - The degree to which data correctly reflects the real-world event
- Integrity
 - Internal consistency of your data. Traceability
 - In tracker; are patients not found and registered several times? Leads to duplication

Some examples from the real world

Completeness

Bo - Reproductive Health - December 2018

Name	Actual Reports	Expected Reports	Percent	Reports On Time	Percent On Time
Gbo	2	2	100	2	100
Komboya	4	4	100	4	100
Wonde	4	4	100	4	100
Tikonko	6	6	100	6	100
Baoma	14	14	100	14	100
Badjia	2	2	100	2	100
Jaiama Bongor	7	7	100	7	100
Bargbe	5	5	100	5	100
Bumpe Ngao	11	12	91.7	11	91.7
Lugbu	8	9	88.9	8	88.9

Timeliness

Description

IDSR Weekly

Expiry days

0

Open future periods for data entry

0

Days after period to qualify for timely submission

15

Period type (*)

Weekly

Consistency

Province	District	2016 Population by		
		CSO	DHO	PATH
Lusaka	Lusaka	2,330,200	2,301,840	2,330,199
	Rufunsa		63,921	79,136
	Chilanga		137,780	144,381
	Chongwe		172,827	157,617
	Kafue		284,323	148,771
Copperbelt	Masaiti	117,393	117,456	117,394
	Chingola	266,478	266,477	266,477
	Mufulira	188,444	188,440	188,443
	Luanshya	173,335	173,335	173,335
	Kitwe	668,668	668,668	668,667
	Ndola	540,923	540,921	540,925

	A	B	C	D	E	F	G	H	I
1	Province	District	Facility Name	Type of Facility	Facility UID	PATH	DHO	Difference	% Difference
2	Lusaka	Is Lusaka District	Is Airport	Urban Health Centre	nPgSY7DnQl0	4644	6991	2347	50.54%
3	Lusaka	Is Lusaka District	Is Bauleni	Urban Health Centre	cENHiNyGXZA	26846	88541	61695	229.81%
4	Lusaka	Is Lusaka District	Is Cancer Diseases Hospital	Hospital	uYLa8Xuof0w	6821			
5	Lusaka	Is Lusaka District	Is Chainama Hills	Hospital	NtOvzfypBdS	6821			
6	Lusaka	Is Lusaka District	Is Chainama Urban Health Centre	Urban Health Centre	P2sINO0afU2	202634			
7	Lusaka	Is Lusaka District	Is Chainda South Clinic	Clinic	FyEYUDmn61s	5035			
8	Lusaka	Is Lusaka District	Is Chainda Urban Health Centre	Urban Health Centre	e3vIJ4RcVHY	41355	50910	9555	23.10%
9	Lusaka	Is Lusaka District	Is Chaisa	Urban Health Centre	wrdjeWiE0qA	77956	77473	483	0.62%
10	Lusaka	Is Lusaka District	Is Chawama	Urban Health Centre	HI6F6xRjZO1	190229	137238	52991	27.86%

Conformity

Requisition books	<input checked="" type="checkbox"/>	Condoms	<input checked="" type="checkbox"/>
Iron Folate tabs	<input checked="" type="checkbox"/>	FP injectables	<input checked="" type="checkbox"/>

Number of vaccine doses discarded due to:		
	Exp. Date	VVM change
BCG	Feb 09	NO
OPV	April 09	✓
Penta	Jan 09	✓
Measles	Sept 08	✓
Yellow fever	March 09	✓
TT	August 09	✓

Temperature exposure of vaccine	
Maximum	NO
Minimum	Yes

* IMCI 1st line: Amoxyl
 ** IMCI 2nd line: Chloramphenicol

NOTE: Stock out is defined as

Accuracy

De-worming (2nd trimester)	11 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	2
IPT 1st Dose (2nd trimester after quickening)	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	0
IPT 2nd Dose (1 month after 1st dose)	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	0
No. of preg. Women counselled and tested for HIV	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	0
No. of preg. Women positive for HIV	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	0
No. of preg. Women received ARV for PMTCT	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	0
Total no. of deliveries	1 1 1 1 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	0
No. of deliveries in PHU	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	0
No. of deliveries by skilled attendants	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	0
No. of maternal deaths	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	0

Integrity

Person search results

Registering unit	Registration date	Inactive	Unique ID	First name	Last name
Ngelehun CHC	2015-01-20			Tom	Johnson
Ngelehun CHC	2014-10-01			Tom	Johson
Ngelehun CHC	2014-01-09			Tom	Palmer
Ngelehun CHC	2014-04-29			Tom	Johnson

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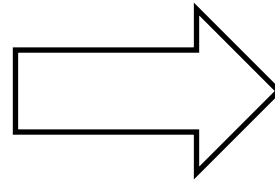
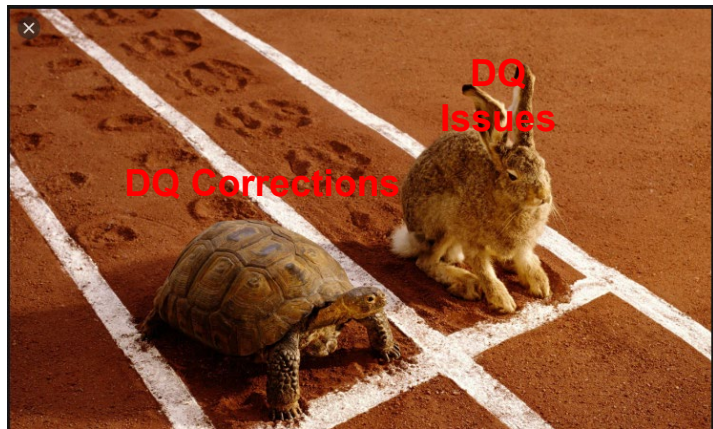
If none of the matches above is the person you are searching for, choose 'Go to registration'.

[Back](#)[Go to registration](#)

Data Quality Issues are a fact of life.

- Every database, country, program has data quality issues.
 - Every information system will have:
 - Outliers
 - Data entry errors
 - Validation alerts
 - Fraudulent data (made-up data)
 - Data quality issues are a feature of any information system, not a failure
- The failure is not being able to address the data quality issues.

It is not a race. It's a process.

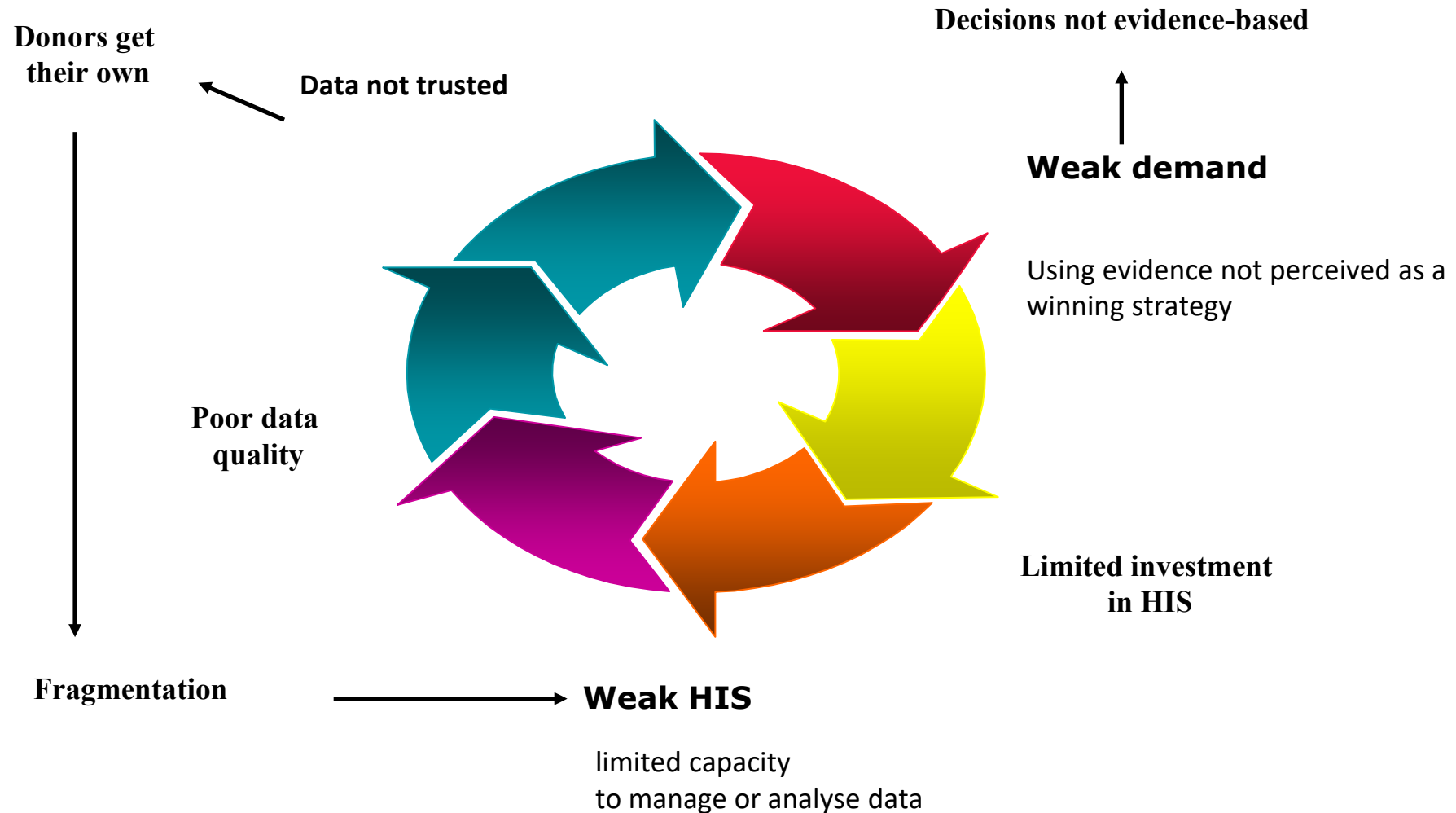


Strategies to handle data quality issues



- What this academy is about!
 1. Before
 - Design. Training. Relevance. Resources
 2. During
 - Adequate time. Feedback. SOPs. Checks. Less manual aggregation
 3. After
 - Data Quality Assessment. Data cleaning.
- Also cyclic: go back to step 1 after data cleaning

A vicious cycle



Assignment: List 5 reasons why you have data quality issues in your country/project?

Examples:

- Wrong use of data. Maternal mortality ratio at facility?
- Lack of SOPs
- Manual aggregation
- Little or no use. No feedback

Assignment: List 5 implications of poor data quality in your country?

Examples

- Wrong (or no) decisions
- Trust and use, weak accountability
- A vicious cycle