Tools and indicators for monitoring and evaluation of IYCF & CMAM programs

4 Progress

3 Assess, analyse, and address bottlenecks

2 Monitor Inputs and Outputs

1 Policies, Strategies, Plans

Reform Program
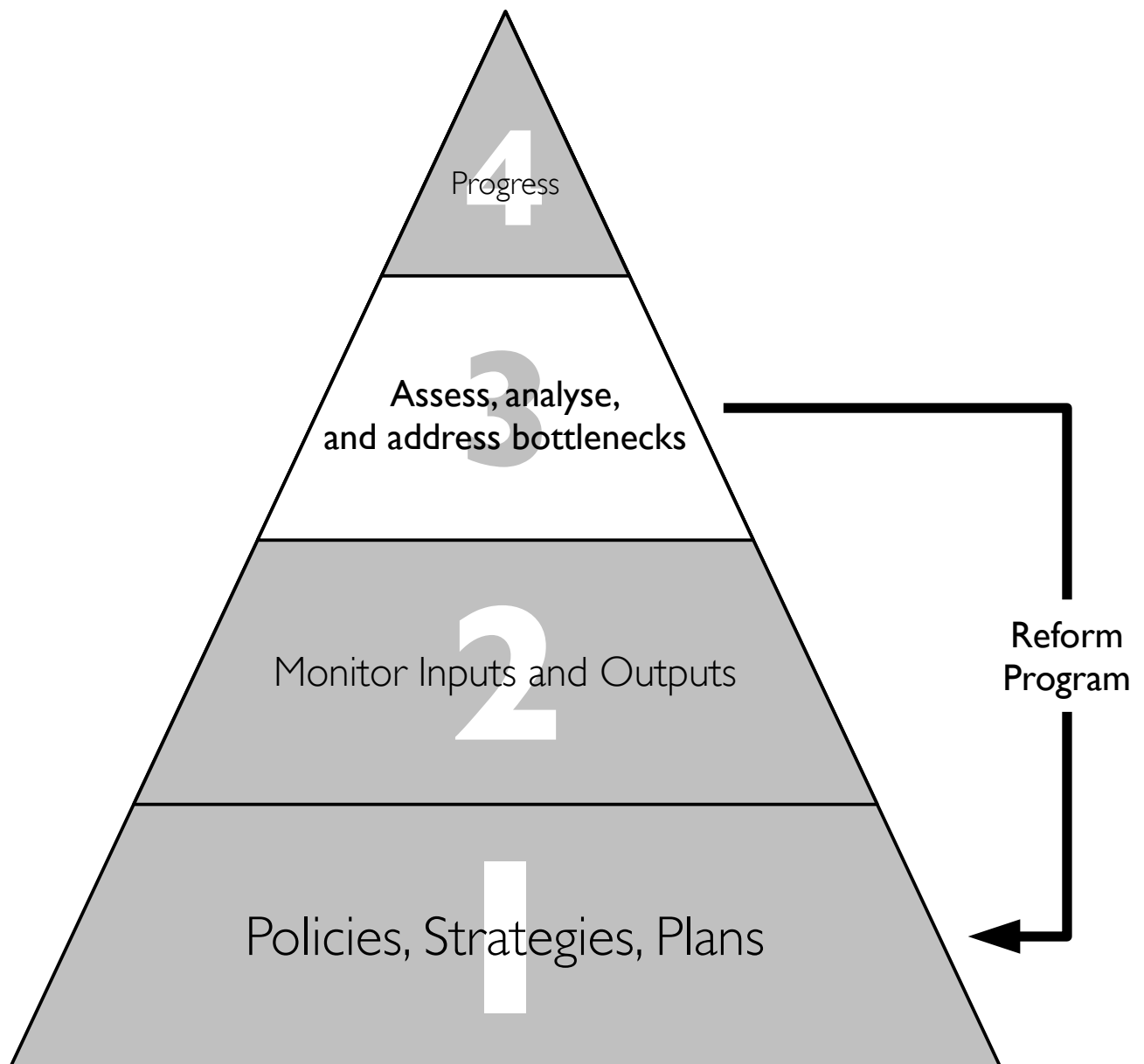
Level 3 Core Indicators Handbook 2013

Introduction

This handbook describes tools to collect and analyse level three (barriers and bottlenecks) indicators for IYCF and CMAM programs in Sierra Leone.

The indicators, tools, and this handbook were developed jointly by the Sierra Leone Ministry of Health and Sanitation, Community Action for the Welfare of Children (CAWeC), CARE, and UNICEF in June and July 2012 and have been updated over time.

Level three indicators are subject to change over time as programs develop. Please check with the nutrition department at the UNICEF office in Freetown for the current version of this handbook.

Please report all errors or omissions in this handbook to the nutrition department at the UNICEF office in Freetown.
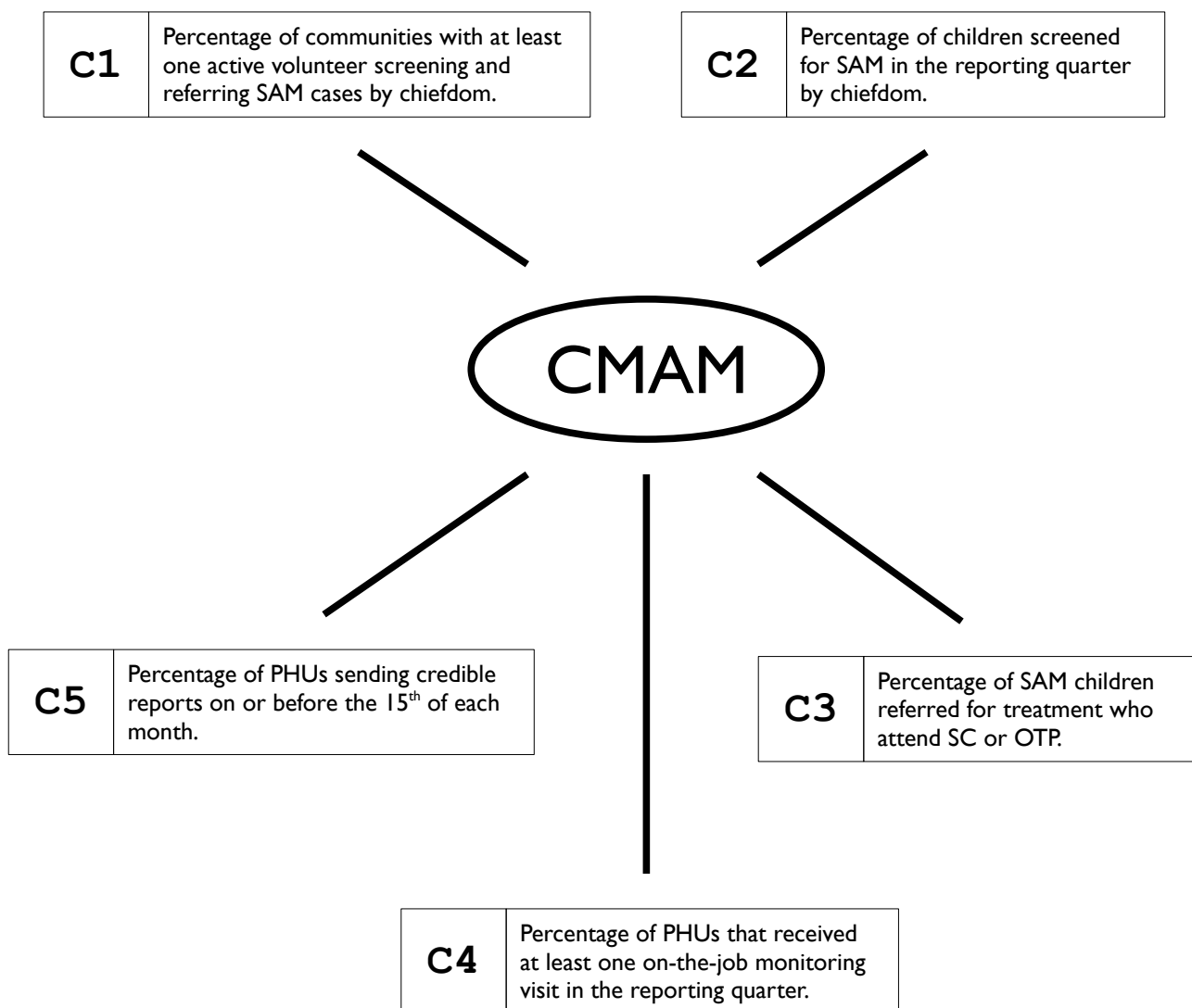
The core CMAM / IYCF process / bottleneck indicator set

Program	Indicator	Description	Data Sources	Comments
CMAM	C1	Percentage of communities with at least one active volunteer screening and referring SAM cases by chiefdom	Screening reports Community lists	
	C2	*Percentage of children screened for SAM in the reporting quarter by chiefdom*	Screening reports Census data	
	C2A	*Percentage of children screened for SAM in the previous month in IYCF target communities*	Survey data	IYCF target communities only
	C3	*Percentage of SAM children referred for treatment who attend SC or OTP*	CHW referral lists OTP registers	
	C4	*Percentage of PHUs that received at least one on-the-job monitoring visit in the reporting quarter*	OTP checklists PHU / OTP lists	
	C5	*Percentage of PHUs sending credible reports on or before the 15th day of each month*	PHU reports PHU / OTP lists	
IYCF	I1	*Percentage of mother support groups (MSG) with at least two members trained in IYCF counselling and active group facilitation skills*	MSG registers	
	I2	*Percentage of women with children aged ≤ 24 months in IYCF target communities that believe that having sex during breastfeeding will harm the health of their child*	Survey data	Measures belief in *banfa*
	I3	*Percentage of mothers with children aged ≤ 24 months in IYCF target communities that are aware of IYCF counselling activities happening in their own community*	Survey data	
	I4	*Percentage of mothers with children aged ≤ 24 months in IYCF target communities that have been in contact with a mother support group in the previous month*	Survey data	
	I4x	*Percentage of mothers with children aged ≤ 24 months in IYCF target communities that have been in contact with a mother support group in the previous month and can recall any of seven key IYCF counselling topics*	Survey data	
	I5	*Percentage of mother support groups (MSG) with at least one trained male IYCF counsellor as a member*	MSG registers	
	I6	*Percentage of mother support groups (MSG) with at least one unmarried teenage mother as a member*	MSG registers	
	I7A	*Percentage of communities in the target communities that have an MSG by chiefdom*	MSG registers Community lists	IYCF target communities only
	I7B	*Percentage of communities that have an MSG by chiefdom*	MSG registers Community lists	All communities
	I8	*Percentage of chiefdoms in the district supported by the partner in launching MCH and breastfeeding week*	Management reports	
	I9A	*Coverage of vitamin A for children aged 6 – 24 months in the IYCF target communities*	Survey data	IYCF target communities only
	I9B	*Coverage of deworming for children aged 12– 24 months in the IYCF target communities*	Survey data	IYCF target communities only

Indicators calculated from routine program data

Indicators for the CMAM Program

The indicators for the CMAM program that are calculated using routine program data are :

C1	Percentage of communities with at least one active volunteer screening and referring SAM cases by chiefdom.

C2	Percentage of children screened for SAM in the reporting quarter by chiefdom.

CMAM

C5	Percentage of PHUs sending credible reports on or before the 15th of each month.

C3	Percentage of SAM children referred for treatment who attend SC or OTP.

C4	Percentage of PHUs that received at least one on-the-job monitoring visit in the reporting quarter.

Each indicator measures a different aspect of the CMAM program.

C1 : Spatial coverage of screening

Indicator C1 :

Percentage of communities with at least one active volunteer screening and referring SAM cases by chiefdom

estimates the spatial (geographical) coverage of CMAM screening activities.

It is calculated using data from the most recent screening activity reports and a complete list of communities in the district.

Here is an example of a screening and activity report :

Community Screening and Referral Report

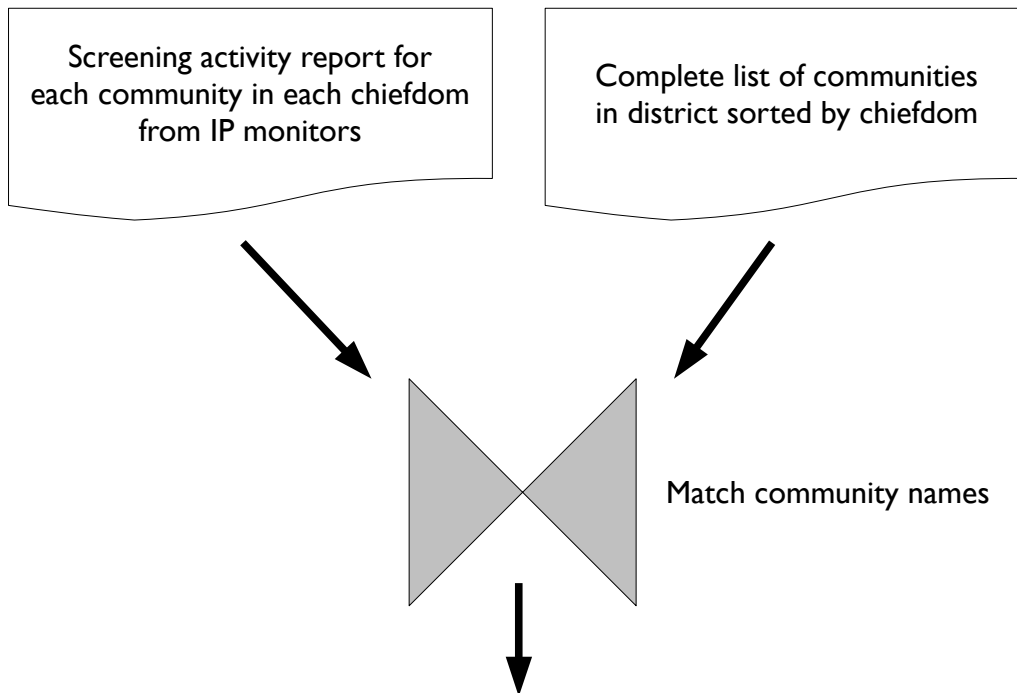IP / NGO : *CAWeC*   Chiefdom : *Masambula*   Month / Year : *7 / 2012*

CHW : *Brima Sumana*   PHU : *Royema Health Post*

Community	Screened MUAC Green		MUAC Yellow		MUAC Red		Oedema		Totals		Referred To SFP		SFP Total	To OTP		OTP Total
	M	F	M	F	M	F	M	F	M	F	M	F		M	F	
Kamalo	34	40	1	1				1	35	42	1	1	2		1	1
Lalwesie	18	14			1				19	14				1		1
Laminaia	41	34	1						42	34	1		1			
Larya	16	18	1	1					17	19	1	1	2			
Majinka	12	2		1			1		13	3		1	1	1		1
Robanka	13	9							13	9						
Rothintha	34	16							34	16						
Royema	96	74	2	3	1	1	1	0	100	78	2	3	5	2	1	3
TOTALS	264	207	5	6	2	1	2	1	273	215	5	6	11	4	2	6

Data shown are for illustration purposes only

C1 : Spatial coverage of screening

Indicator C1 is calculated using data from the most recent screening activity reports and a complete list of communities in the district :

| Screening activity report for each community in each chiefdom from IP monitors | Complete list of communities in district sorted by chiefdom |

Match community names

$$C1 = \frac{number\ of\ matched\ communities}{total\ number\ of\ communities} \times 100$$

It is helpful for the list of communities to be sorted by chiefdom name and then by community name. This makes it easier to find and match community names.

If there are many communities with the same name then it may be easier to use a list of communities that is sorted by chiefdom, then section, then community name.

C1 : Spatial coverage of screening

The indicator can be calculated by hand or using a spreadsheet package such as Microsoft Excel or OpenOffice Calc.

If you use a spreadsheet package to calculate this indicator then two worksheets are used. This worksheet is called **dataEntry** :

	A	B	C
1	**Chiefdom**	**Community**	**Matched**
2	Masunbala	Gbalan	
3		Kamalo	1
4		Kawula	
5		Lalwesie	1
6		Laminaia	1
7		Larya	1
8		Mayinka	1
9		Robanka	1
10		Rothintha	1
11		Royeama	1
12	Samu	Balaya	1
13		Botia	
14		Kigankan	
15		Koriya	1
16		Mapotolon	1
17		Mayealie	
18		Pamaro	
19		Robantie	
20		Rolope	1
21		Talajain	1
22		Wondima	

Data shown are for illustration purposes only

It is used to enter the data needed to calculate the indicator.

Data are entered as :

    1   Match found (i.e. there is a record of screening activity in a particular community)

    0   No match found (i.e. there is <u>no</u> record of screening activity in a particular community)

An empty cell may also be used to indicate that no match was found (i.e. no record of screening activity in a particular community).

C1 : Spatial coverage of screening

The indicator is calculated on a second worksheet in the same spreadsheet document :

	A	B
1	**Chiefdom**	**Result for indicator C1**
2	=dataEntry.A2	=SUM(dataEntry.C2:C11)/COUNTA(dataEntry.B2:B11)
3	=dataEntry.A12	=SUM(dataEntry.C12:C22)/COUNTA(dataEntry.B12:B22)
4		
5	ALL CHIEFDOMS	=SUM(dataEntry.C2:C22)/COUNTA(dataEntry.B2:B22)
6		
7		
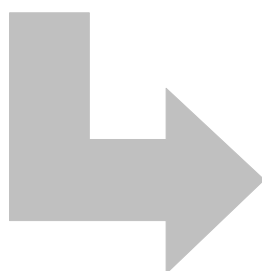
	A	B
1	**Chiefdom**	**Result for indicator C1**
2	Masunbula	80.0%
3	Samu	50.0%
4		
5	ALL CHIEFDOMS	65.0%
6		
7		

Data shown are for illustration purposes only
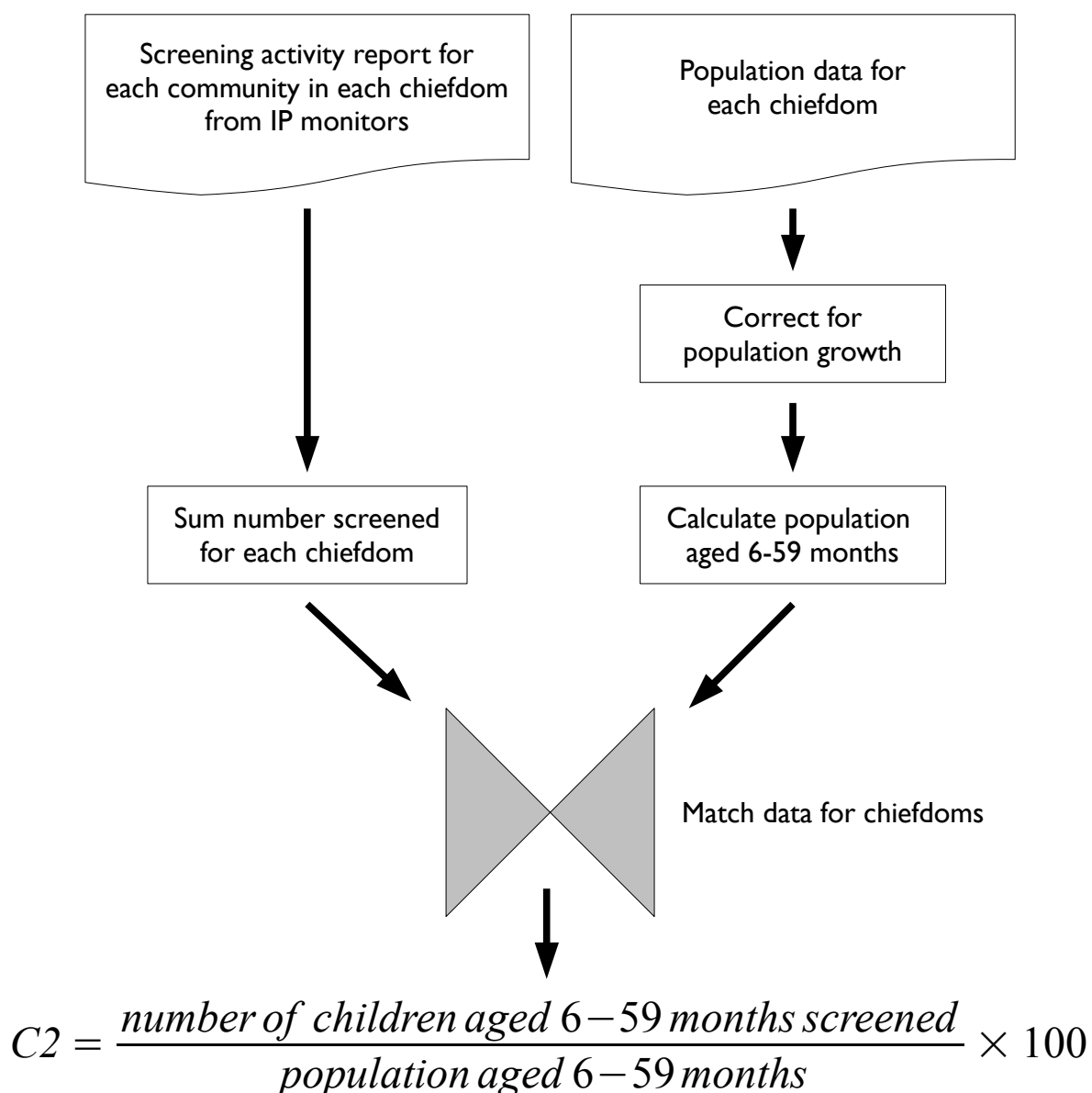
This indicator is reported on a quarterly basis.

C2 : Population coverage of screening activities

Indicator C2 :

Percentage of children screened for SAM in the reporting quarter by chiefdom

estimates the population coverage of CMAM screening activities.

It is calculated using data from the most recent screening activity reports and chiefdom populations :

$$C2 = \frac{number\ of\ children\ aged\ 6-59\ months\ screened}{population\ aged\ 6-59\ months} \times 100$$

C2 : Population coverage of screening activities

The indicator can be calculated by hand or using a spreadsheet package such as Microsoft Excel or OpenOffice Calc.

Here is an example worksheet for calculating this indicator using a spreadsheet package :

	A	B	C	D	E	F
1	Chiefdom	Population	Growth Corrected	6-59 months	Screened	Coverage
2	Bramia	31962	=B2*1.03	=C2*0.159	2123	=E2/D2
3	Gbinleh Dixon	29717	=B3*1.03	=C3*0.159	1760	=E3/D3
4	Magbena	61032	=B4*1.03	=C4*0.159	4532	=E4/D4
5	Mambolo	55545	=B5*1.03	=C5*0.159	3256	=E5/D5
6	Masongbala	33031	=B6*1.03	=C6*0.159	2587	=E6/D6
7	Samu	57550	=B7*1.03	=C7*0.159	4101	=E7/D7
8	Tonko Limba	47895	=B8*1.03	=C8*0.159	5413	=E8/D8
9	ALL CHIEFDOMS	=SUM(B2:B8)	=SUM(C2:C8)	=SUM(D2:D8)	=SUM(E2:E8)	=E9/D9
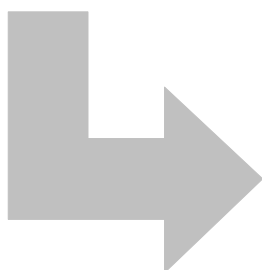
	A	B	C	D	E	F
1	Chiefdom	Population	Growth Corrected	6-59 months	Screened	Coverage
2	Bramia	31962	32921	5234	2123	40.6%
3	Gbinleh Dixon	29717	30609	4867	1760	36.2%
4	Magbena	61032	62863	9995	4532	45.3%
5	Mambolo	55545	57211	9097	3256	35.8%
6	Masongbala	33031	34022	5409	2587	47.8%
7	Samu	57550	59277	9425	4101	43.5%
8	Tonko Limba	47895	49332	7844	5413	69.0%
9	ALL CHIEFDOMS	316732	326334	51871	23772	45.8%

Data shown are for illustration purposes only

In the example worksheet the population is assumed to have grown by 3% since the last census (1.03) and 15.9% of the population are assumed to be aged between six months and five years (0.159).

The proportion of the population aged between six months and five years of age can be estimated from the population age under five years :

$$Population_{6\,months - 5\,years} = Population_{0-5\,years} \times 0.9$$

This indicator is reported on a quarterly basis.

An additional indicator (C2A) is collected by semi-annual survey. See the *Indicators calculated from survey data* section of this document for details on how to collect and analyse the survey data needed to calculate indicator C2A.

C3 : Effectiveness of screening activities

Indicator C3 :

Percentage of SAM children referred for treatment who attend SC or OTP

estimates the effectiveness of screening services. It is calculated using data from lists of referrals made by community-based screeners (CS) and from OTP registers :
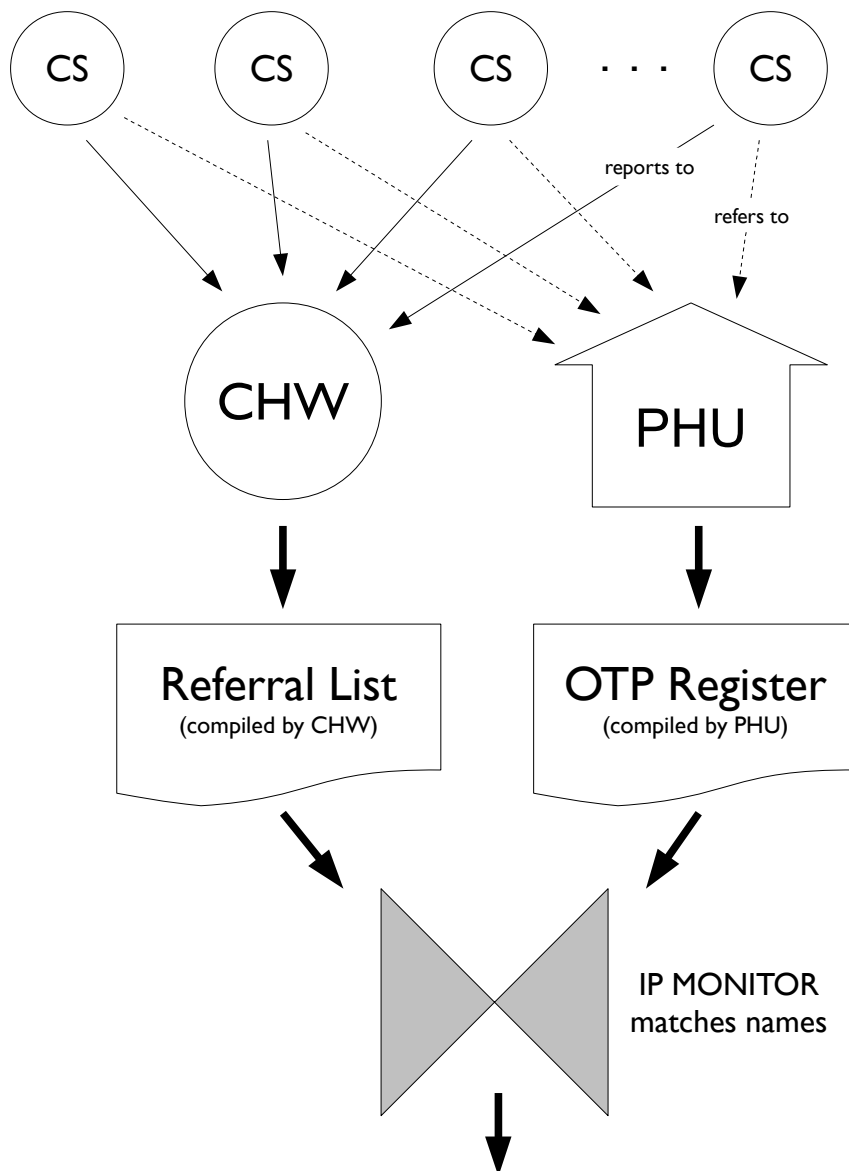

$$C3 = \frac{number\ of\ chilren\ on\ both\ lists}{number\ of\ children\ on\ CS\ /\ CHW\ referral\ list} \times 100$$

C3 : Effectiveness of screening activities

The indicator can be calculated by hand or using a spreadsheet package such as Microsoft Excel or OpenOffice Calc.

Here is an example worksheet for calculating this indicator using a spreadsheet package :

	A	B	C	D
1	Facility	Referrals	Admitted	Result
2	Kambia SC	20	17	=C2/B2
3	Kassirie OTP	18	7	=C3/B3
4	Mapotolon OTP	17	12	=C4/B4
5	Kukuna OTP	27	22	=C5/B5
6	Gbalamuya OTP	21	15	=C6/B6
7	Mambolo OTP	32	20	=C7/B7
8	Rokupr OTP	3	3	=C8/B8
9	Kambia U5 OTP	4	4	=C9/B9
10	Bamoi Munu OTP	10	7	=C10/B11
11	Kania OTP	9	5	=C11/B11
12	Gbalanthan OTP	7	4	=C12/B12
13	Madina OTP	9	4	=C13/B13
14	Kamsasa OTP	13	11	=C14/B14
15	ALL FACILITIES	=SUM(B2:B14)	=SUM(C2:C14)	=C15/B15
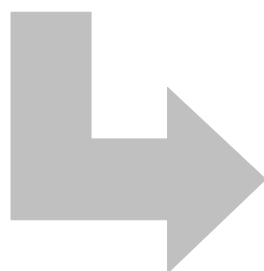
	A	B	C	D
1	Facility	Referrals	Admitted	Result
2	Kambia SC	20	17	85.0%
3	Kassirie OTP	18	7	38.9%
4	Mapotolon OTP	17	12	70.6%
5	Kukuna OTP	27	22	81.5%
6	Gbalamuya OTP	21	15	71.4%
7	Mambolo OTP	32	20	62.5%
8	Rokupr OTP	3	3	100.0%
9	Kambia U5 OTP	4	4	100.0%
10	Bamoi Munu OTP	10	7	70.0%
11	Kania OTP	9	5	55.6%
12	Gbalanthan OTP	7	4	57.1%
13	Madina OTP	9	4	44.4%
14	Kamsasa OTP	13	11	84.6%
15	ALL FACILITIES	190	131	68.9%

Data shown are for illustration purposes only

This indicator may be calculated for each PHU or for each chiefdom. It is usually more useful to calculate this indicator for each PHU.

This indicator is reported on a quarterly basis although data might be collected on a monthly basis.
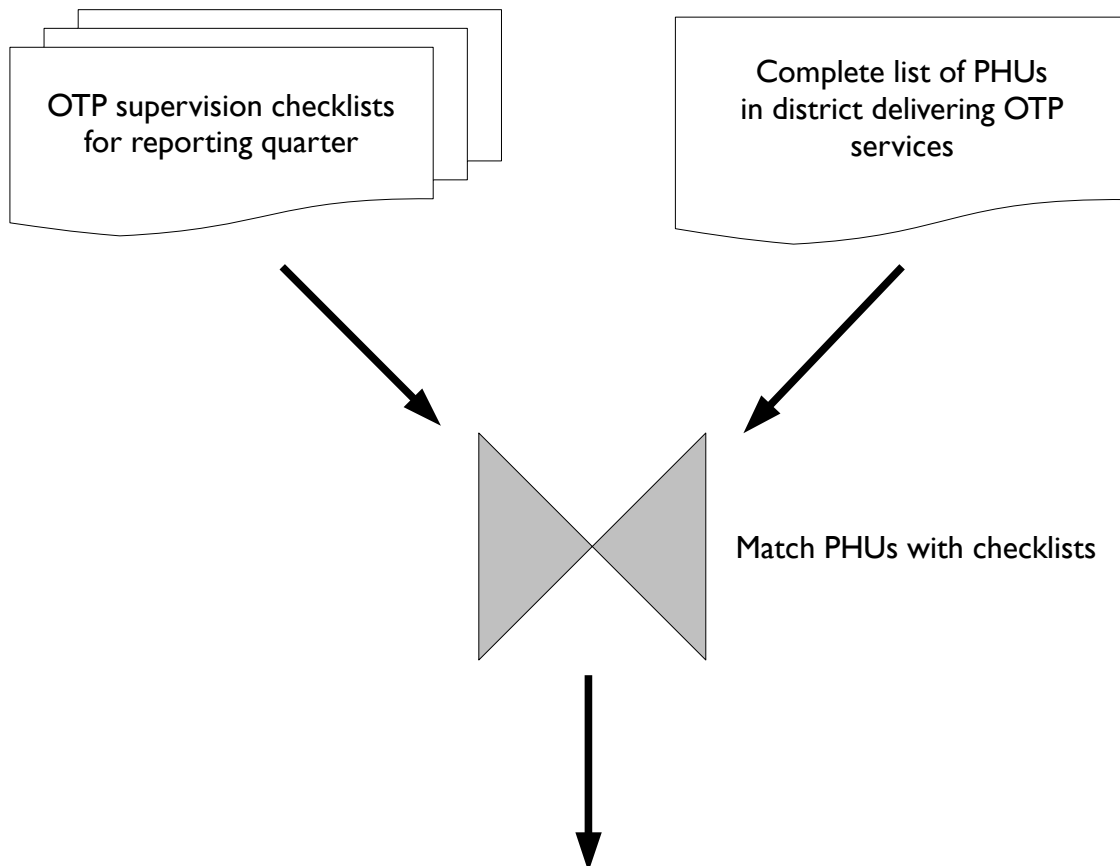
C4 : Frequency of supervisory monitoring visits

Indicator C4 :

> *Percentage of PHUs that received at least one on-the-job monitoring visit in the reporting quarter*

monitors the frequency of supervisory monitoring.

It is calculated using supervisory monitoring checklists and a complete list of PHUs in the district that are delivering OTP services :
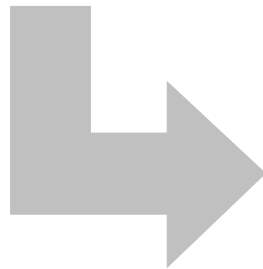

$$C4 = \frac{number\ of\ matched\ PHUs}{total\ number\ of\ PHUs\ delivering\ OTP} \times 100$$

C4 : Frequency of supervisory monitoring visits

The indicator can be calculated by hand or using a spreadsheet package such as Microsoft Excel or OpenOffice Calc.

Here is an example worksheet for calculating this indicator using a spreadsheet package :

	A	B	C
1	Facility	Report Number	Date
2	Kambia SC	12309	04-Apr-2012
3	Kassirie OTP	39013	16-May-2012
4	Mapotolon OTP		
5	Kukuna OTP	15719	23-May-2012
6	Gbalamuya OTP	27058	06-Jun-2012
7	Mambolo OTP		
8	Rokupr OTP		
9	Kambia U5 OTP		
10	Bamoi Munu OTP	51436	13-Jun-2012
11	Kania OTP	34591	09-May-2012
12	Gbalanthan OTP	78652	16-Apr-2012
13	Madina OTP		
14	Kamsasa OTP		
15			
16	RESULT	=COUNTA(B2:B14)/COUNTA(A2:A14)	

	A	B	C
1	Facility	Report Number	Date
2	Kambia SC	12309	04-Apr-2012
3	Kassirie OTP	39013	16-May-2012
4	Mapotolon OTP		
5	Kukuna OTP	15719	23-May-2012
6	Gbalamuya OTP	27058	06-Jun-2012
7	Mambolo OTP		
8	Rokupr OTP		
9	Kambia U5 OTP		
10	Bamoi Munu OTP	51436	13-Jun-2012
11	Kania OTP	34591	09-May-2012
12	Gbalanthan OTP	78652	16-Apr-2012
13	Madina OTP		
14	Kamsasa OTP		
15			
16	RESULT	53.8%	

Data shown are for illustration purposes only

This indicator is reported on a quarterly basis.

C5 : Timely reporting of program monitoring data

Indicator C5 :

Percentage of PHUs sending credible reports received on or before the 15th day of each month

monitors the frequency that OTP sites submit routine monitoring data to program managers and the credibility of the submitted data.
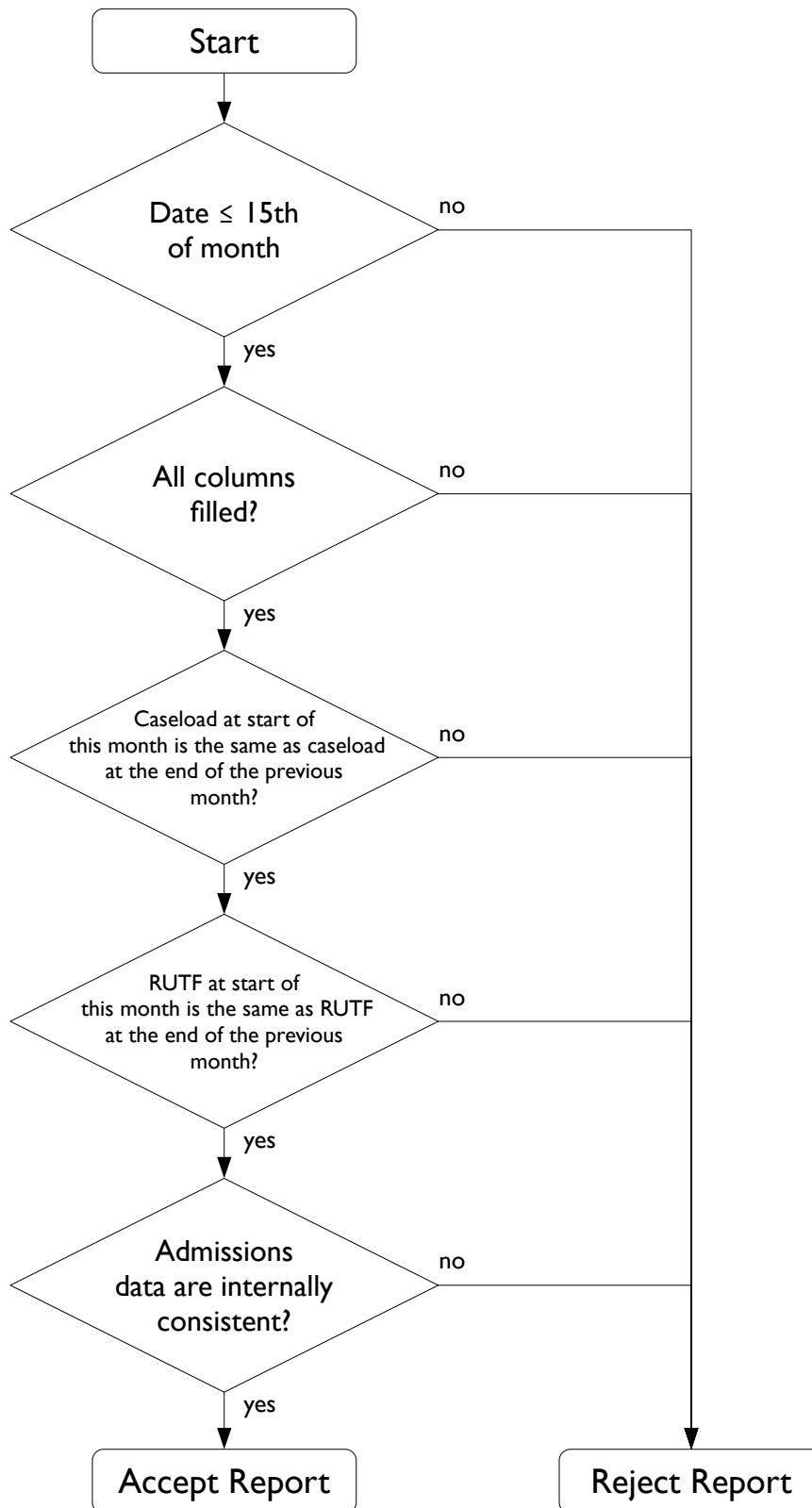
It is calculated from the date on which reports are received by the DHMT (or IP) and the quality of reported data :
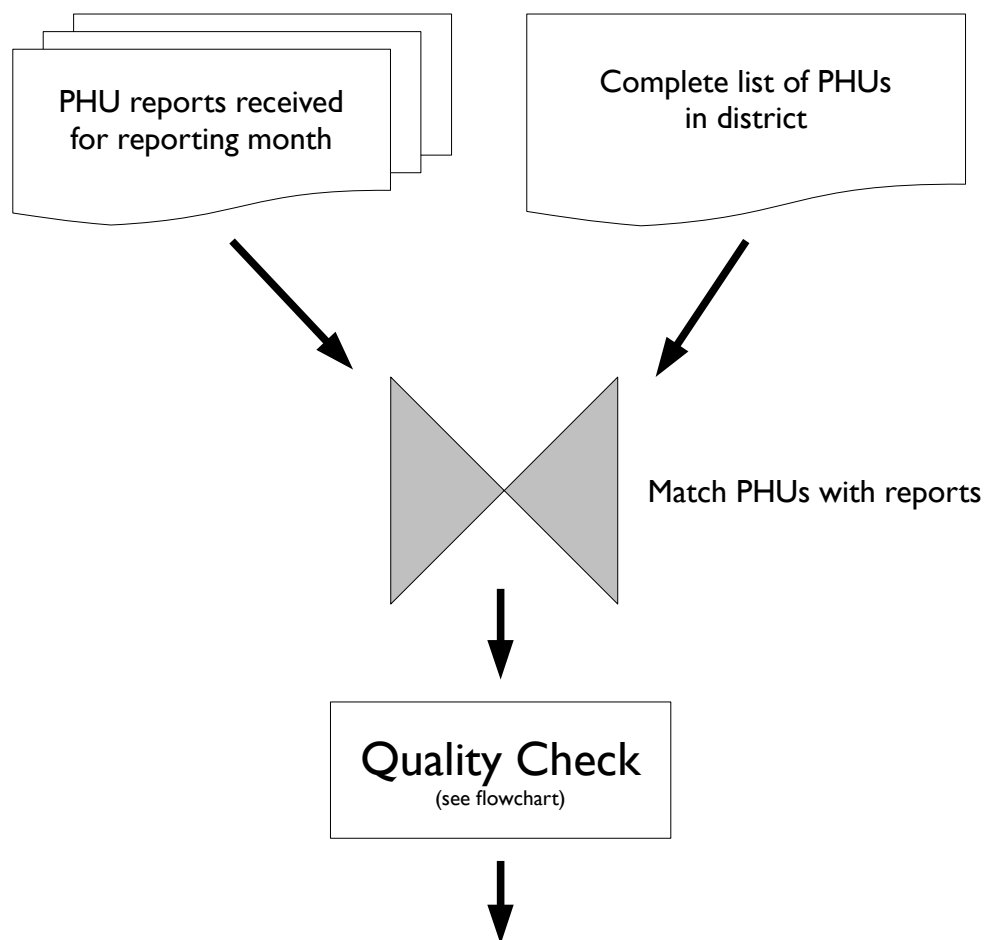
$$C5 = \frac{number\ of\ timely\ and\ credible\ reports}{number\ of\ OTP\ and\ SC\ sites\ in\ district} \times 100$$

C5 : Timely reporting of program monitoring data

The quality check is :

```
                        ┌──────────┐
                        │  Start   │
                        └────┬─────┘
                             │
                    ╱────────▼────────╲
                   ╱   Date ≤ 15th      ╲  no
                   ╲    of month        ╱────────┐
                    ╲────────┬─────────╱         │
                        yes  │                   │
                    ╱────────▼────────╲           │
                   ╱   All columns      ╲  no      │
                   ╲    filled?          ╱────────┤
                    ╲────────┬─────────╱          │
                        yes  │                    │
                    ╱────────▼────────╲            │
                   ╱  Caseload at start ╲  no       │
                   ╲  of this month ...  ╱────────┤
                    ╲────────┬─────────╱          │
                        yes  │                    │
                    ╱────────▼────────╲            │
                   ╱   RUTF at start    ╲  no       │
                   ╲  of this month ...  ╱────────┤
                    ╲────────┬─────────╱          │
                        yes  │                    │
                    ╱────────▼────────╲            │
                   ╱   Admissions       ╲  no       │
                   ╲  data consistent?   ╱────────┤
                    ╲────────┬─────────╱          │
                        yes  │                    │
                   ┌─────────▼──────┐      ┌───────▼──────┐
                   │ Accept Report  │      │ Reject Report│
                   └────────────────┘      └──────────────┘
```

Flowchart:

- **Start**
- **Date ≤ 15th of month** — yes → continue; no → Reject Report
- **All columns filled?** — yes → continue; no → Reject Report
- **Caseload at start of this month is the same as caseload at the end of the previous month?** — yes → continue; no → Reject Report
- **RUTF at start of this month is the same as RUTF at the end of the previous month?** — yes → continue; no → Reject Report
- **Admissions data are internally consistent?** — yes → Accept Report; no → Reject Report

C5 : Timely reporting of program monitoring data

The indicator can be calculated by hand or using a spreadsheet package such as Microsoft Excel or OpenOffice Calc.

Here is an example worksheet for calculating this indicator using a spreadsheet package :

	A	B	C	D	E	F	G
1	Facility	Date	Filled	Caseload	RUTF	Consistent	Accepted
2	Kambia SC	1	1	1	1	1	=B2*C2*D2*E2*F2
3	Kassirie OTP	1	1	0	1	1	=B3*C3*D3*E3*F3
4	Mapotolon OTP	0	1	1	0	0	=B4*C4*D4*E4*F4
5	Kukuna OTP	1	1	1	1	1	=B5*C5*D5*E5*F5
6	Gbalamuya OTP	1	1	0	0	0	=B6*C6*D6*E6*F6
7	Mambolo OTP	0	1	1	1	1	=B7*C7*D7*E7*F7
8	Rokupr OTP	0	1	1	1	1	=B8*C8*D8*E8*F8
9	Kambia U5 OTP	1	0	0	0	0	=B9*C9*D9*E9*F9
10	Bamoi Munu OTP	1	1	1	1	1	=B10*C10*D10*E10*F10
11	Kania OTP	0	1	1	1	1	=B11*C11*D11*E11*F11
12	Gbalanthan OTP	0	1	0	1	1	=B12*C12*D12*E12*F12
13	Madina OTP	1	1	1	1	1	=B13*C13*D13*E13*F13
14	Kamsasa OTP	0	0	0	0	0	=B14*C14*D14*E14*F14
15							
16	RESULT						=SUM(G2:G14)/COUNTA(A2:A14)
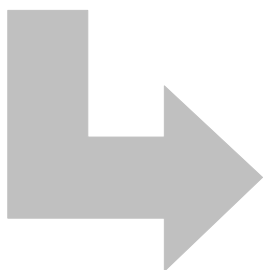
	A	B	C	D	E	F	G
1	Facility	Date	Filled	Caseload	RUTF	Consistent	Accepted
2	Kambia SC	1	1	1	1	1	1
3	Kassirie OTP	1	1	0	1	1	0
4	Mapotolon OTP	0	1	1	0	0	1
5	Kukuna OTP	1	1	1	1	1	0
6	Gbalamuya OTP	1	1	0	0	0	0
7	Mambolo OTP	0	1	1	1	1	0
8	Rokupr OTP	0	1	1	1	1	0
9	Kambia U5 OTP	1	0	0	0	0	0
10	Bamoi Munu OTP	1	1	1	1	1	0
11	Kania OTP	0	1	1	1	1	1
12	Gbalanthan OTP	0	1	0	1	1	0
13	Madina OTP	1	1	1	1	1	1
14	Kamsasa OTP	0	0	0	0	0	0
15							
16	RESULT						30.8%

Data shown are for illustration purposes only

In this worksheet, the number one is used to indicate that a report has passed a quality check and the number zero (or an empty cell) is used to indicate that a report has failed a quality check.

This indicator is calculated on a monthly basis at the national level (i.e. by UNICEF and the MoHS).

Using the CMAM indicators

The CMAM indicators have been selected to be useful for managing CMAM programs at the district level and the national level :
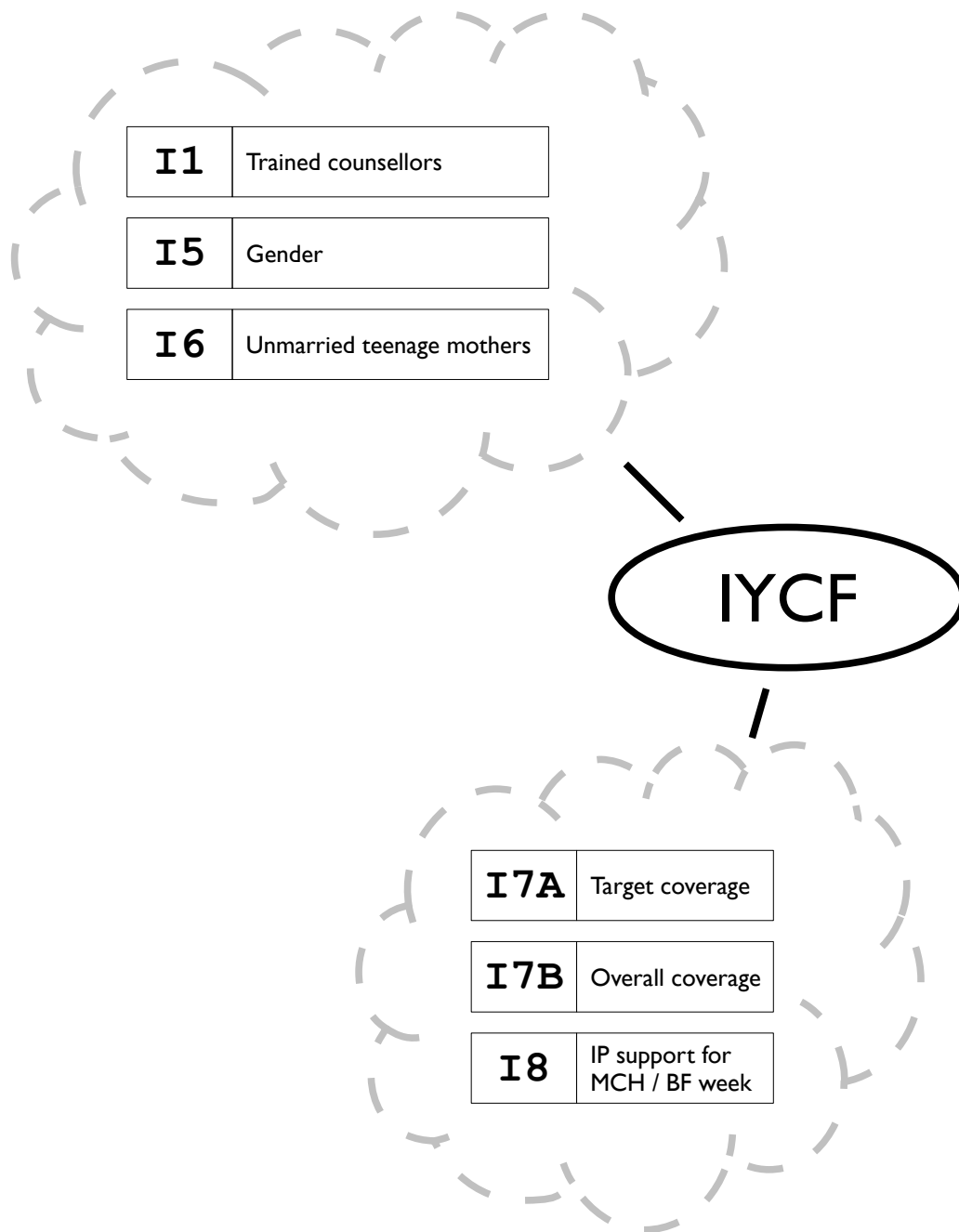
C1	This indicator tells you which communities are covered by screening activities and which communities are not covered by screening activities. This tells you where to direct activities to increase coverage.
C2	This indicator tells you the completeness of coverage of screening activities. Increasing screening coverage should increase program coverage.
C3	This indicator tells you if you have problems with the interface between the community and the program. Low values indicate problems with community perceptions of the program (e.g. rejected referrals) or with distance.
C4	This indicator identifies PHUs that should be prioritised for support, supervision, and training.
C5	This indicator identifies PHUs that should be prioritised for support, supervision, and training.

An additional CMAM indicator (C2A) is collected by semi-annual survey. See the *Indicators calculated from survey data* section of this document for details on how to collect and analyse the data needed to calculate indicator C2A.

Indicators for the IYCF Program

The indicators for the IYCF program that are calculated from routine program data are :

Indicators related to the composition of mother support groups

I1	Trained counsellors
I5	Gender
I6	Unmarried teenage mothers

IYCF

I7A	Target coverage
I7B	Overall coverage
I8	IP support for MCH / BF week

Indicators related to program coverage

I1, I5, I6 : Composition of Mother Support Groups

Indicator I1 :

Percentage of mother support groups (MSG) with at least two members trained in IYCF counselling and active group facilitation skills

Indicator I5 :

Percentage of mother support groups (MSG) with at least one trained male IYCF counsellor as a member

Indicator I6 :

Percentage of mother support groups (MSG) with at least one unmarried teenage mother as a member

These indicators relate to the composition of mother support groups and to training given by the implementing partner.

For these indicators, training refers to direct training by the implementing partner <u>not</u> *cascade training* that takes place between MSG members.

I1, I5, I6 : Composition of Mother Support Groups

Indicators I1, I5, and I6 are calculated using data from the community MSG membership registers.

Here is an example of a community MSG membership register :

IYCF / MSG Membership Register

District: _Kambia_   Chiefdom: _Migbema_   Section: _Bamoi_   Community: _Bamoi Luma_

#	Name	Age*	Sex	Marital Status	Position Held	IYCF Trained?	Mobile No.
1	Kadiata Sasay	A	F	Married	Chair Lady	Yes	
2	Fudia Kamara	A	F	Married	Member	Yes	
3	Sorie Bangura	A	M	Married	Secretary		076 433 494
4	Isatu Turay	T	F	Single	Member		
5	Haja Sankoh	A	F	Maried	Member		
6	Fodo kamay	A	M	Single	Publicity Sec.		076 237 735
7	Anita Sesay	A	F	Single	Treasurer		
8	Jeneba Kargbo	T	F	Single	Member		
9	Mabintay Sesay	A	F	Married	Member	Yes	
10	Fatmata Banguro	A	F	Married	Member		

* Record as 'A' for Adult or 'T' for teenager

Data shown are for illustration purposes only

The community MSG membership register <u>must</u> record age, sex, and whether each member has been trained in IYCF counselling by the implementing partner.

I1 : Composition of Mother Support Groups

Indicator I1 is calculated using data from the community MSG membership registers :
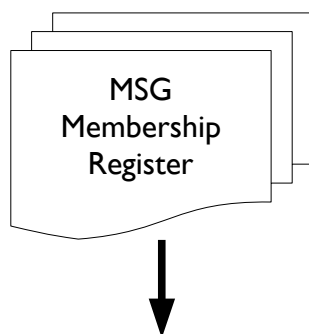
$$I1 = \frac{number\ of\ MSG\ with \geq 2\ trained\ members}{total\ number\ of\ MSG} \times 100$$

In the example MSG register there are three trained members :

IYCF / MSG Membership Register

District: _Kambia_ Chiefdom: _Migbema_ Section: _Bamoi_ Community: _Bamoi Luma_

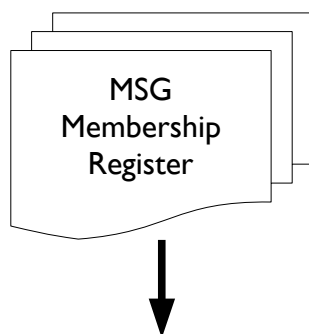| #	Name	Age*	Sex	Marital Status	Position Held	IYCF Trained?	Mobile No.
1	Kadiata Sasay	A	F	Married	Chair Lady	Yes	
2	Fudia Kamara	A	F	Married	Member	Yes	
3	Sorie Bangura	A	M	Married	Secretary		076 433 494
4	Isatu Turay	T	F	Single	Member		
5	Haja Sankoh	A	F	Maried	Member		
6	Fodo Kamay	A	M	Single	Publicity Sec.		076 237 735
7	Anita Sesay	A	F	Single	Treasurer		
8	Jeneba Kargbo	T	F	Single	Member		
9	Mabintay Sesay	A	F	Married	Member	Yes	
10	Fatmata Banguro	A	F	Married	Member		

* Record as 'A' for Adult or 'T' for teenager

Data shown are for illustration purposes only

This particular MSG meets the requirement that each MSG must have at least two trained members.

I5 : Composition of Mother Support Groups

Indicator I5 is calculated using the community MSG membership registers :
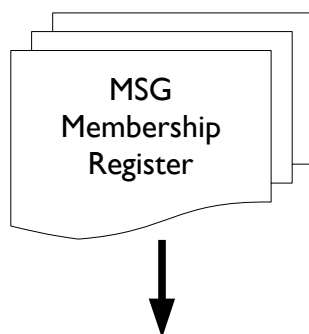
$$I5 = \frac{number\ of\ MSG\ with \geq 1\ trained\ male\ member}{total\ number\ of\ MSG} \times 100$$

In the example MSG register there are two male members but neither of them have received IYCF training :

IYCF / MSG Membership Register

District: _Kambia_   Chiefdom: _Migbema_   Section: _Bamoi_   Community: _Bamoi Luma_

#	Name	Age*	Sex	Marital Status	Position Held	IYCF Trained?	Mobile No.
1	Kadiata Sasay	A	F	Married	Chair Lady	Yes	
2	Fudia Kamara	A	F	Married	Member	Yes	
3	Sorie Bangura	A	M	Married	Secretary		076 433 494
4	Isatu Turay	T	F	Single	Member		
5	Haja Sankoh	A	F	Maried	Member		
6	Fodo Kamay	A	M	Single	Publicity Sec.		076 237 735
7	Anita Sesay	A	F	Single	Treasurer		
8	Jeneba Kargbo	T	F	Single	Member		
9	Mabintay Sesay	A	F	Married	Member	Yes	
10	Fatmata Banguro	A	F	Married	Member		

* Record as 'A' for Adult or 'T' for teenager
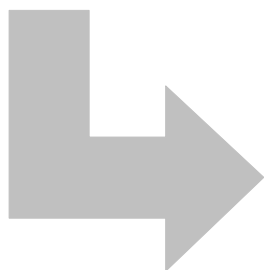
Data shown are for illustration purposes only

This particular MSG <u>fails</u> to meets the requirement that each MSG must have at least one trained male member.

I6 : Composition of Mother Support Groups

Indicator I6 is calculated using the community MSG membership registers :

$$I6 = \frac{number\ of\ MSG\ with \geq 1\ unmarried\ teenage\ mother}{total\ number\ of\ MSG} \times 100$$

In the example MSG register there are two unmarried teenage mothers :

IYCF / MSG Membership Register

District: _Kambia_   Chiefdom: _Migbema_   Section: _Bamoi_   Community: _Bamoi Luma_

#	Name	Age*	Sex	Marital Status	Position Held	IYCF Trained?	Mobile No.
1	Kadiata Sasay	A	F	Married	Chair Lady	Yes	
2	Fudia Kamara	A	F	Married	Member	Yes	
3	Sorie Bangura	A	M	Married	Secretary		076 433 494
4	Isatu Turay	T	F	Single	Member		
5	Haja Sankoh	A	F	Maried	Member		
6	Fodo Kamay	A	M	Single	Publicity Sec.		076 237 735
7	Anita Sesay	A	F	Single	Treasurer		
8	Jeneba Kargbo	T	F	Single	Member		
9	Mabintay Sesay	A	F	Married	Member	Yes	
10	Fatmata Banguro	A	F	Married	Member		

* Record as 'A' for Adult or 'T' for teenager

Data shown are for illustration purposes only

This particular MSG meets the requirement that each MSG must have at least one unmarried teenage mother as a member.

I1, I5, I6 : Composition of Mother Support Groups

Indicator I1, I5, and I6 can be calculated by hand or using a spreadsheet package such as Microsoft Excel or OpenOffice Calc.

Here is an example worksheet for calculating this indicator using a spreadsheet package :

	A	B	C	D
1	**MSG Community**	I1	I5	I6
2	Gbalan	1	0	1
3	Kamalo	1	1	0
4	Kawula	1	0	1
5	Lalwesie	1	1	1
6	Laminaia	1	1	0
7	Larya	1	0	1
8	Mayinka	0	1	0
9	Robanka	1	0	0
10	Rothintha	1	1	1
11	Royeama	1	1	1
12	Balaya	0	1	0
13	Botia	1	1	1
14	Kigankan	1	0	0
15				
16	**RESULTS**	=SUM(B2:B14)/COUNTA(A2:A14)	=SUM(C2:C14)/COUNTA(A2:A14)	=SUM(D2:D14)/COUNTA(A2:A14)

	A	B	C	D
1	**MSG Community**	I1	I5	I6
2	Gbalan	1	0	1
3	Kamalo	1	1	0
4	Kawula	1	0	1
5	Lalwesie	1	1	1
6	Laminaia	1	1	0
7	Larya	1	0	1
8	Mayinka	0	1	0
9	Robanka	1	0	0
10	Rothintha	1	1	1
11	Royeama	1	1	1
12	Balaya	0	1	0
13	Botia	1	1	1
14	Kigankan	1	0	0
15				
16	**RESULTS**	84.6%	61.5%	53.8%

Data shown are for illustration purposes only

Data are entered as :

    1   The MSG meets the indicator requirement

    0   The MSG does <u>not</u> meet the indicator requirement

This indicator is reported on a quarterly basis.

I7A : Spatial coverage of IYCF services

Indicator I7A :

Percentage of communities in the target communities that have an MSG by chiefdom

estimates the spatial (geographical) coverage of community-based IYCF promotion activities.

It is calculated using data from community MSG membership registers and a complete list of IYCF target communities in the district sorted by chiefdom :
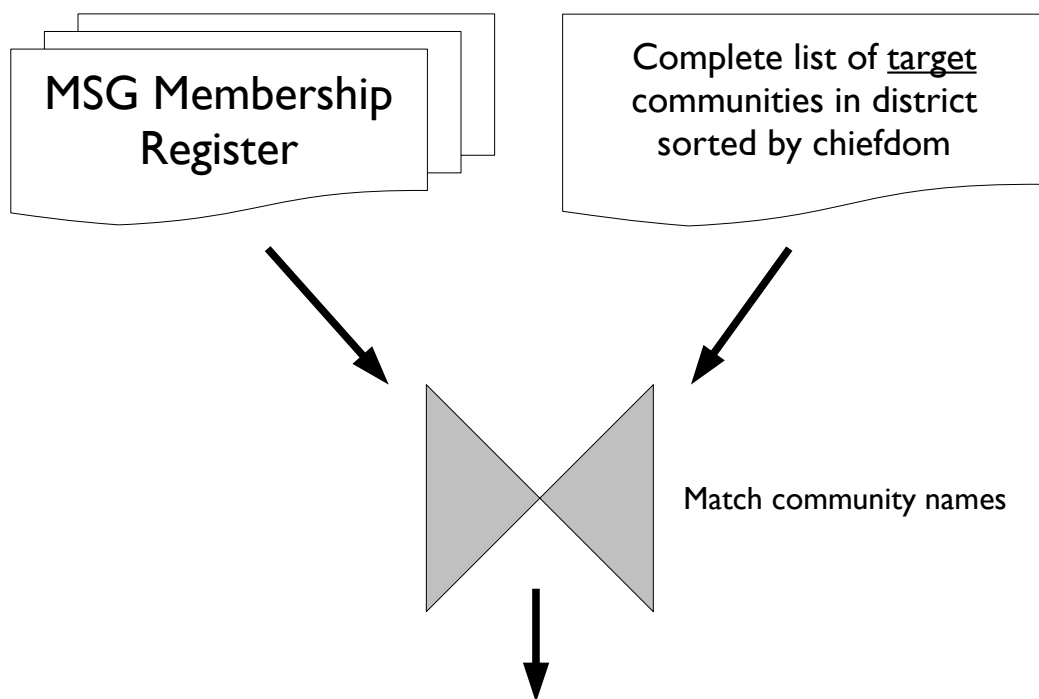
$$I7A = \frac{number\ of\ matched\ target\ communities}{total\ number\ of\ target\ communities} \times 100$$

Note that indicator I7A is based only on IYCF target communities. It measures the coverage of community-based IYCF promotion activities in the program's current intended catchment area.

I7B : Spatial coverage of IYCF services

Indicator I7B :

Percentage of communities that have an MSG by chiefdom

estimates the spatial (geographical) coverage of community-based IYCF promotion activities.

It is calculated using data from community MSG membership registers and a complete list of <u>all</u> communities in the district sorted by chiefdom :
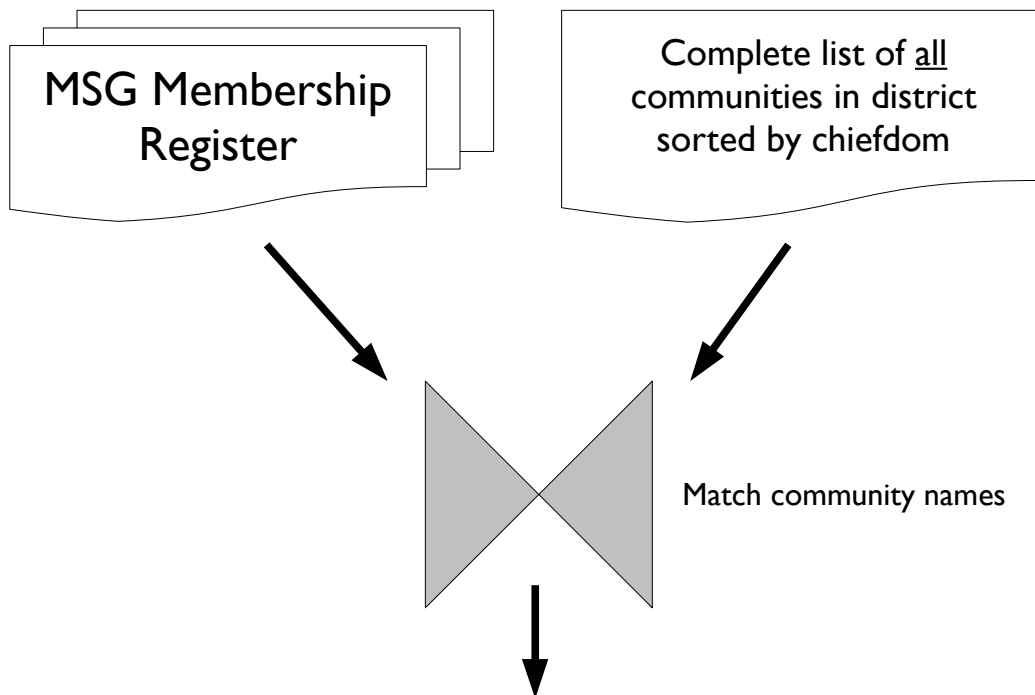
$$I7B = \frac{number\ of\ matched\ communities}{total\ number\ of\ communities} \times 100$$

Note that indicator I7B is calculated for <u>all</u> communities. It measures the coverage of community-based IYCF promotion activities in all communities.

I7A, I7B : Spatial coverage of IYCF services

These indicators can be calculated by hand or using a spreadsheet package such as Microsoft Excel or OpenOffice Calc.

If you use a spreadsheet package to calculate these indicators then two worksheets are used. This worksheet is called **iycf7** :

	A	B	C	D
1	Chiefdom	Community	Target	Matched
2	Masunbala	Gbalan	1	
3		Kamalo	1	1
4		Kawula	1	
5		Lalwesie	1	1
6		Laminaia		
7		Larya	1	1
8		Mayinka	1	1
9		Robanka	1	1
10		Rothintha	1	1
11		Royeama		
12	Samu	Balaya	1	1
13		Botia	1	1
14		Kigankan	1	
15		Koriya	1	1
16		Mapotolon	1	1
17		Mayealie		
18		Pamaro		
19		Robantie		
20		Rolope	1	1
21		Talajain		
22		Wondima	1	

Data shown are for illustration purposes only

It is used to enter the data needed to calculate the indicators.

Data are entered as :

1   The community is a target community or there is an MSG membership register for the community

0   The community is <u>not</u> a target community or there is no MSG membership register for the community

An empty cell may be used instead of zero (as in the example worksheet).

I7A, I7B : Spatial coverage of IYCF services

These indicators are calculated on a second worksheet in the same spreadsheet document :

	A	B	C
1	Chiefdom	Result for indicator I7A	Result for indicator I7B
2	=iycf7.A2	=SUM(iycf7.D2:D11)/SUM(iycf7.C2:C11)	=SUM(iycf7.D2:D11)/COUNTA(iycf7.B2:B11)
3	=iycf7.A12	=SUM(iycf7.D12:D22)/SUM(iycf7.C12:C22)	=SUM(iycf7.D12:D22)/COUNTA(iycf7.B12:B22)
4			
5	ALL CHIEFDOMS	=SUM(iycf7.D2:D22)/SUM(iycf7.C2:C22)	=SUM(iycf7.D2:D22)/COUNTA(iycf7.B2:B22)
6			
7			
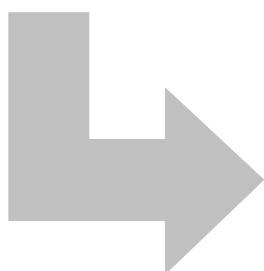
	A	B	C
1	Chiefdom	Result for indicator I7A	Result for indicator I7B
2	Masunbula	75.0%	60.0%
3	Samu	71.4%	45.5%
4			
5	ALL CHIEFDOMS	73.3%	52.4%
6			
7			

Data shown are for illustration purposes only

These indicators are reported on a quarterly basis.

I8 : Support for MCH and breastfeeding week

Indicator I8 :

> *Percentage of chiefdoms in the district supported by the partner in launching MCH and breastfeeding week*

is reported on an annual basis by the implementing partner.

It is calculated as :

$$I8 = \frac{number\ of\ chiefdoms\ supported}{number\ of\ chiefdoms} \times 100$$

Using management data from the implementing partner and the district health management team (DHMT).

Using the IYCF indicators

The IYCF indicators have been selected to be useful for managing IYCF programs at the district level and the national level :

I1	This indicator tells you about the composition of MSG with regard to them having sufficient trained members.
I5	This indicator tells you about the composition of MSG with regard to them having trained male members.
I6	This indicator tells you about the composition of MSG with regard to them having unmarried teenage mothers as members. See note below.
I7A	This indicator tells you about the coverage of IYCF promotion activities as a proportion of currently defined target communities.
I7B	This indicator tells you about the coverage of IYCF promotion activities as a proportion of all communities.
I8	This indicator tells you about the coverage of support for MCH and breastfeeding week as a proportion of all chiefdoms.

Additional IYCF indicators (I2, I3, I4, I9) are collected by semi-annual survey. See the *Core Indicators by Survey* section of this document for details on how to collect and analyse the data needed to calculate these indicators.

Note that the level of indicator I6 will depend on the prevalence of unmarried teenage mothers. There has to be an unmarried teenage mother in a community in order for the MSG to have an unmarried teenage mother as a member. This means that the level of indicator I6 may never reach 100%.

Indicators calculated from survey data

Indicators calculated from survey data

The indicators calculated from survey data are :

Indicators related to the IYCF program

I2	Belief in *banfa*

I3	Coverage of IYCF counselling

I4	Coverage of MSG ➡ mother contact

I4x	Effective communication

Small sample questionnaire survey

Miscellaneous indicators

I9A	Coverage of vitamin A

I9B	Coverage of deworming

H1	Coverage of health extension services

H2	Prevalence of GAM by MUAC

C2A	Coverage of CMAM screening

The survey sample

The survey uses a *two-stage sample* :

> **First-stage sample :** This is a systematic sample of about sixteen communities drawn from a <u>complete</u> <u>list</u> of IYCF target communities sorted by chiefdom and (if available) by section within chiefdom. This ensures that :
>
> - All IYCF target communities have an equal chance of being included in the sample.
>
> - The sample is taken from all chiefdoms with IYCF target communities.
>
> - The resulting sample is a close to even spatial sample of the IYCF target area(s).
>
> **Second-stage sample :** A *map-segment-sample* approach is used to sample dwellings within the communities selected for the first stage sample.

A minimum sample size of *n* = 192 children aged between 0 and 24 months is used. The sixteen communities (first-stage sample) each contribute twelve children (second-stage sample) to the overall sample.

If you sample fewer than sixteen communities then you should increase the size of the within-community sample to achieve a minimum sample size of about *n* = 192 children aged between 0 and 24 months. If, for example, you select fifteen communities for the first-stage sample then you would need to sample thirteen children from each community (i.e. because 192 ÷ 15 = 12.8 which is rounded up to 13).

You should try <u>not</u> to sample many fewer than about sixteen communities.

If a small community is selected that has fewer eligible children than the required number then <u>all</u> children in that community are sampled.
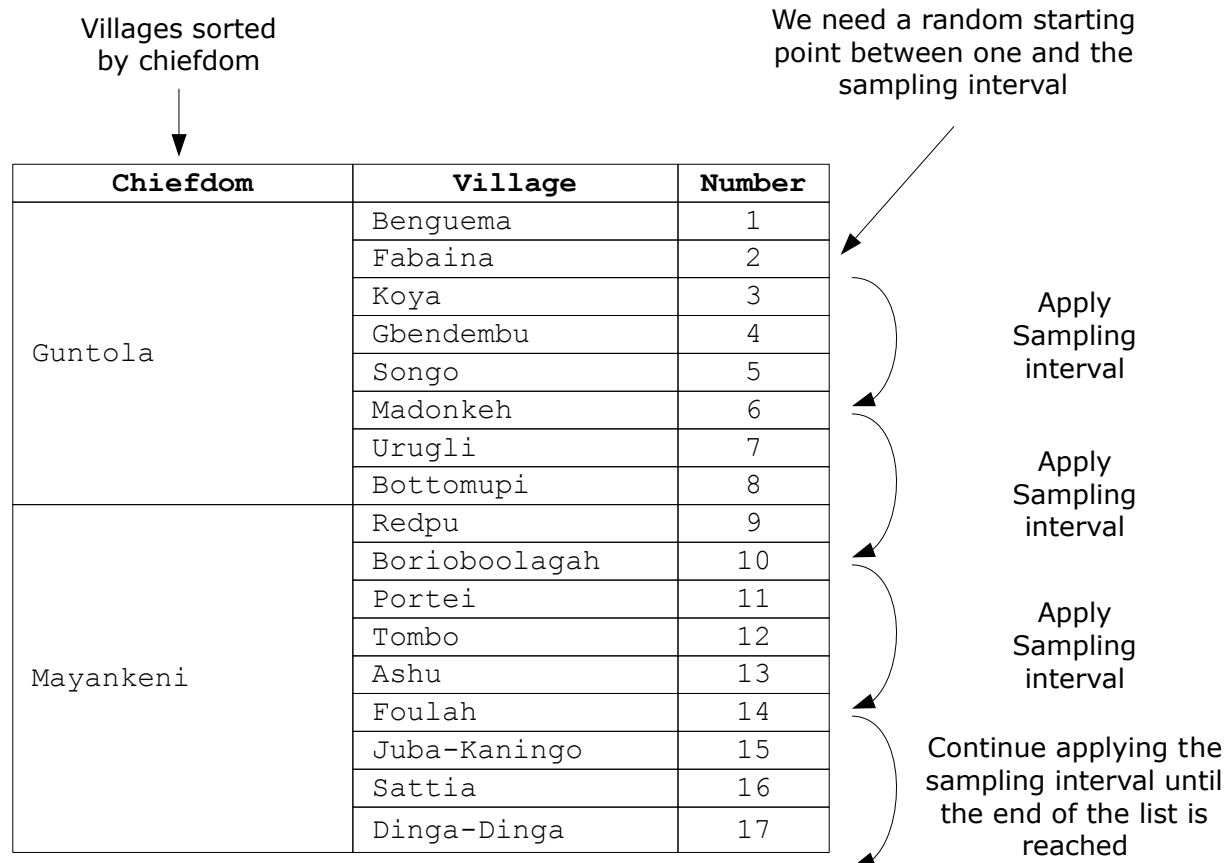
Note that the survey covers IYCF target communities only.

The first-stage sample

The first-stage sample is a simple systematic sample :

There are 67 IYCF target communities in the district. We need to sample 16 villages:

$$Sampling\,Interval = \left\lfloor \frac{N_{IYCF\,target\,communities}}{16} \right\rfloor = \left\lfloor \frac{67}{16} \right\rfloor = \lfloor 4.19 \rfloor = 4$$

Villages sorted
by chiefdom

We need a random starting
point between one and the
sampling interval

Chiefdom	Village	Number
Guntola	Benguema	1
	Fabaina	2
	Koya	3
	Gbendembu	4
	Songo	5
	Madonkeh	6
	Urugli	7
	Bottomupi	8
Mayankeni	Redpu	9
	Borioboolagah	10
	Portei	11
	Tombo	12
	Ashu	13
	Foulah	14
	Juba-Kaningo	15
	Sattia	16
	Dinga-Dinga	17

Apply
Sampling
interval

Apply
Sampling
interval

Apply
Sampling
interval

Continue applying the
sampling interval until
the end of the list is
reached

Note : This procedure will sometimes select more than 16 communities.

In this example, 17 villages (i.e. at positions 2, 6, 10, 14, 18, 22, 26, 30, 34, 38, 42, 46, 50, 54, 58, 62, and 66 in the list) will be selected.

When this happens you should sample <u>all</u> of the selected communities.

The communities to be sampled are selected from the list.

Population proportional sampling (PPS) is <u>not</u> used.

The sampling interval is usually <u>rounded</u> <u>down</u>. In the illustration (above), 4.19 is rounded down to 4.

If you round the sampling interval up you will select a smaller number of communities than you planned.

The first-stage sample

Surveys should be done every six months.

A <u>new</u> selection of communities is made for <u>each</u> survey.

If the sampling interval is small then you may start at the first community on the list for the first survey, the second community on the list for the second survey, the third community in the list for the third survey, and so-on. Start again at the first community once you have used the community at the position in list that corresponds to the sampling interval as the starting community (this is the fourth community in the illustration).

The second-stage sample

The second-stage (within-community) sample uses a *map-segment-sample* approach :

Map : Make a rough map of the community to be sampled. It is helpful to think of communities as being made of *ribbons* (i.e. lines of dwellings located along roads, tracks, or rivers) and *clusters* of dwellings. Here is an example of a ribbon of dwellings :
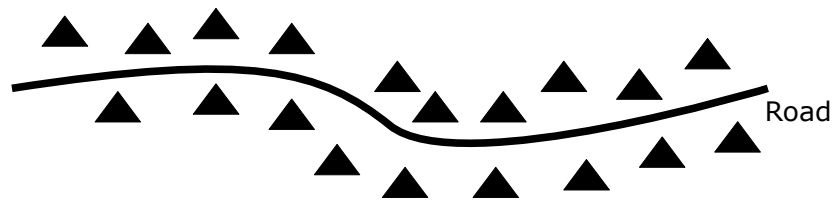
Here is an example of a cluster of dwellings :
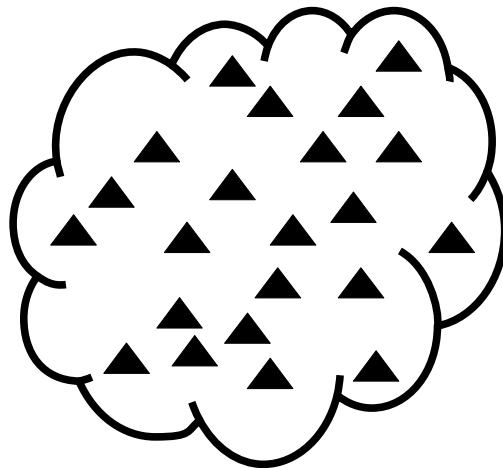
Segment : Divide the community into ribbon and cluster segments defined by the physical layout of the community being sampled.

Sample : Ribbons and clusters are sampled in different ways :

- Ribbons are sampled using systematic sampling.

- Clusters are sampled using a random walk method.

If a small community is selected that is likely to have fewer than twelve eligible children then all children in that community are sampled by moving door-to-door.

Mapping : Single and multiple clusters

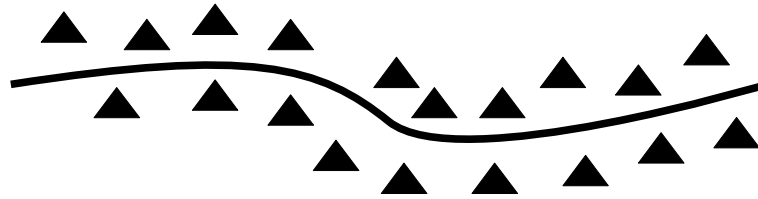Some communities consist of a single cluster of houses :
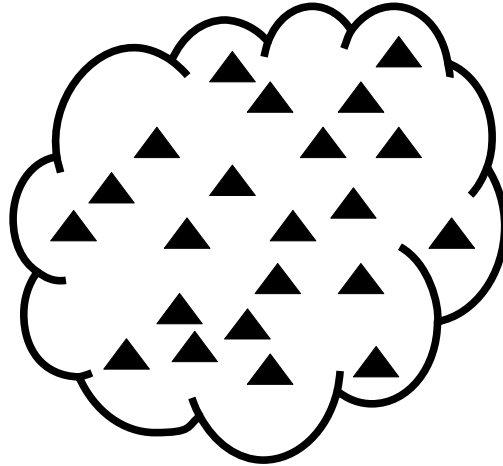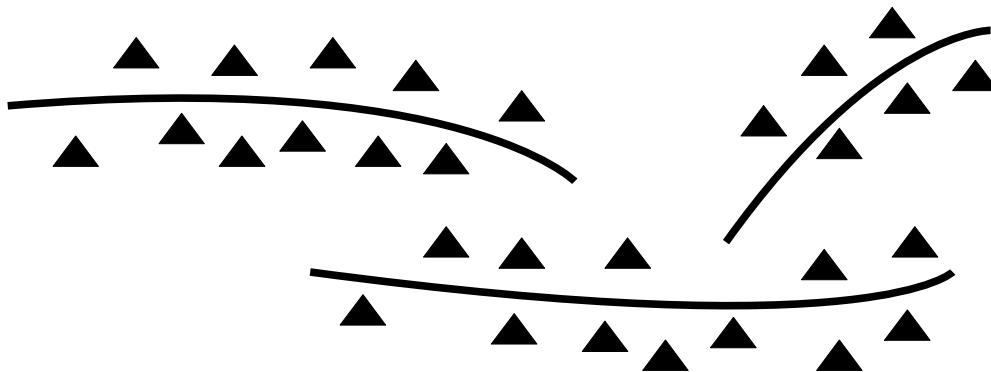

or a set of clusters of houses :
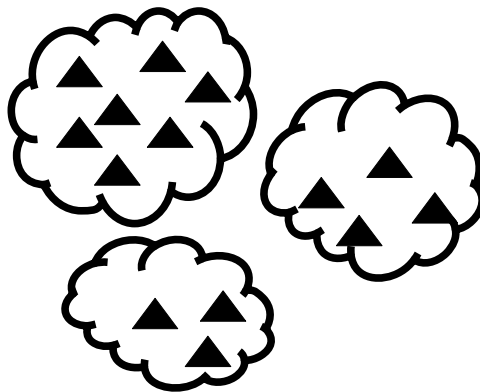
For communities (or parts of communities) structured in this way we use a sampling method called the random walk.

Mapping : Ribbon communities

Ribbon communities have houses arranged in a line :
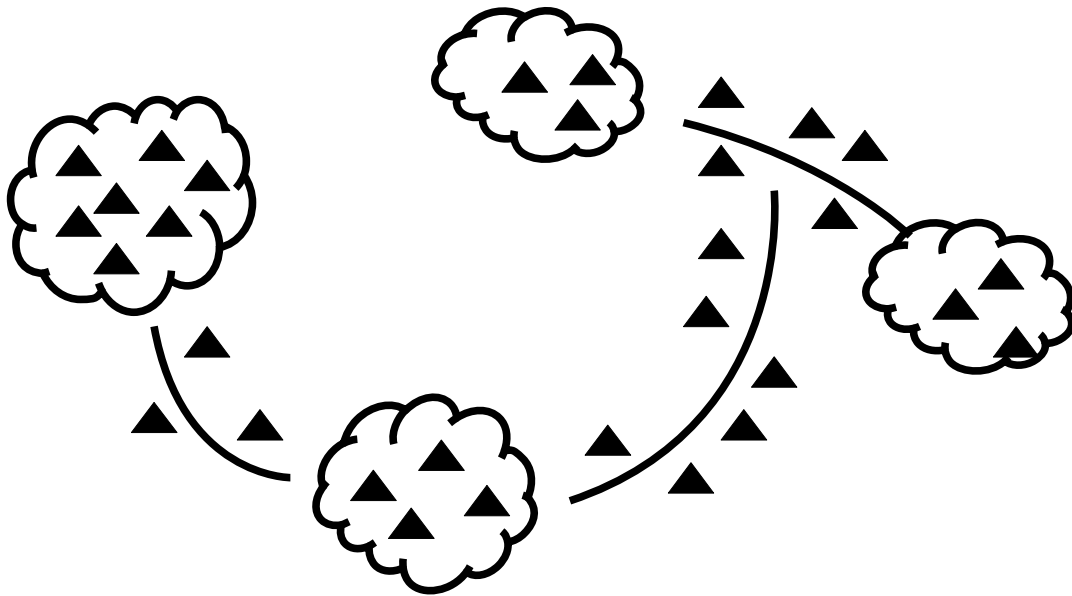
or in several lines :

For communities (or parts of communities) structured in this way we use a sampling method called <u>systematic</u> <u>sampling</u>.

Mapping : Mixed communities

Some communities are a mixture of clusters and ribbons :
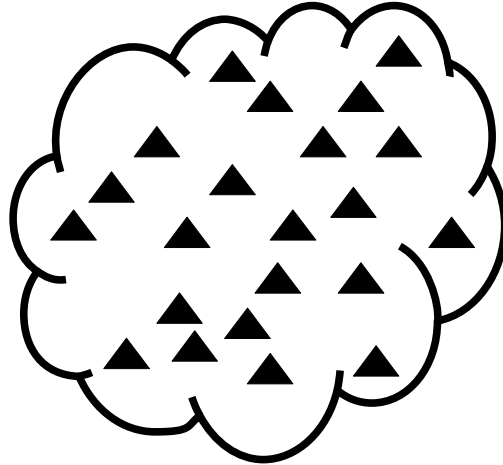

For mixed communities we use a mixture of the <u>random</u> <u>walk</u> method (in the clusters) and <u>systematic</u> <u>sampling</u> (along the ribbons).
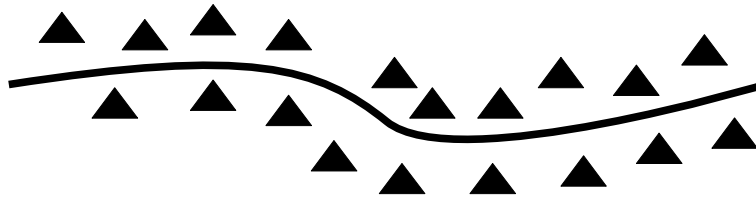
Segmentation

Segmentation involves dividing a community into several parts and taking part of the within-community sample from each segment.

With simple communities such as a single cluster :

or a single ribbon :

we can take a single sample using the random walk method (for the single cluster) or systematic sampling method (for the single ribbon).
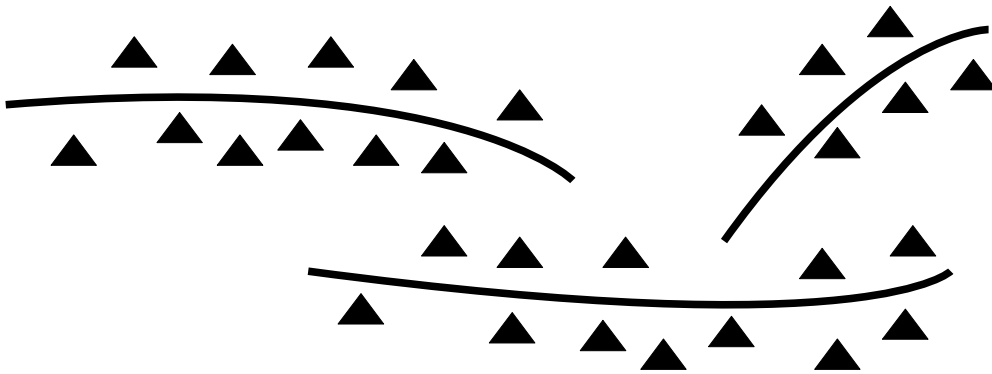
With simple communities, segmentation is not required and we take a single sample from the entire community using the appropriate sampling method.
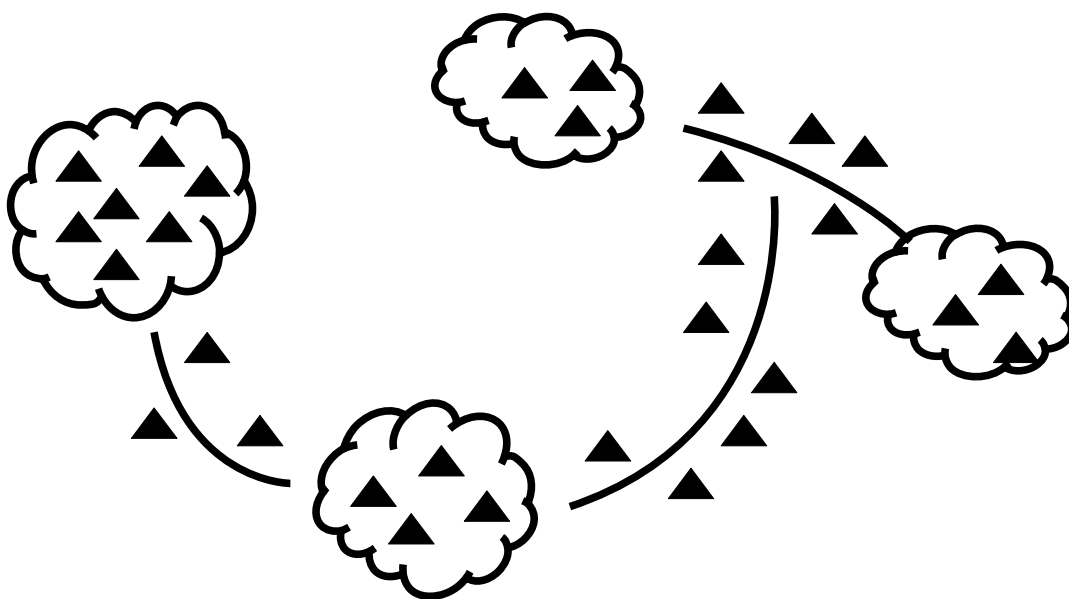
Segmentation

For more complicated communities such as a community made up of several clusters :
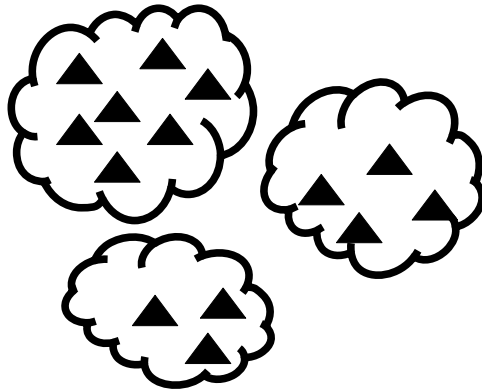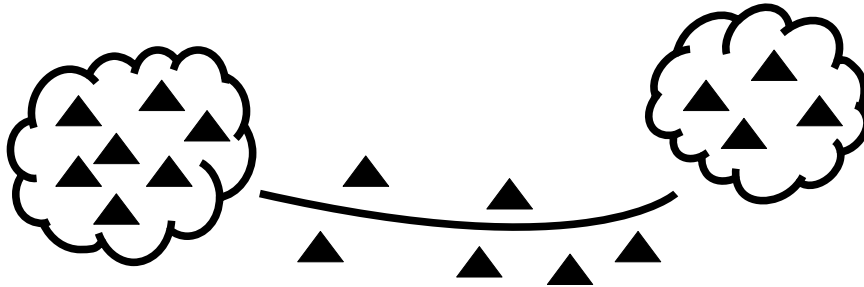
or a community made up of several ribbons :

or a mixed community :

we divide the community into several parts or segments.

Segmentation

We take a small sample from each segment using the appropriate sampling method. For example, with a community made up of three segments :

we would take one third of the overall sample from each segment. The within-community sample size is twelve children. We would, therefore, sample four children (12÷3=4) from each segment.

We are sampling dwellings in order to sample children. It is usually safe to assume that each dwelling will contain a single child aged between 0 and 24 months.

Dividing the sample up in this way means that we will sample children from every part of the community rather than just one part of the community.

When taking the sample we use the random walk method to take part of the sample from clusters and the systematic sampling method to take part of the sample from ribbons.

Segments should be either ribbons or clusters but should never contain both a ribbon and a cluster. This is because clusters and ribbons are sampled in different ways.

A dwelling can only belong to one segment. Segments should not overlap.

Sampling dwellings

All segments should be sampled. If, for example, there are three segments in a community then you would take a third of the community level sample from each segment.

All segments should be sampled even if this means that you take a larger sample than you expected to.

Different types of segment are sampled in different ways :

Dwellings in cluster segments are sampled using a method called the random walk. This involves sampling houses by walking in random directions within the cluster.

Dwellings in ribbon segments are sampled using a method called systematic sampling. This involves sampling houses at regular intervals along the ribbon.

We will look at each of these sampling methods in turn.

Random walk sampling

The random walk method is used to sample dwellings in cluster segments. Sampling proceeds as follows :

1. Move to the approximate centre of the cluster.

2. Select a random direction by spinning a bottle on the ground. The neck indicates the sampling direction. This is the direction you should walk in order to sample a dwelling. Walk in the sampling direction counting the dwellings that you pass. Sample the third dwelling. If there are no children aged between 0 and 24 months in the selected dwelling then sample the nearest dwelling with a child aged between 0 and 24 months. Sample all children aged between 0 and 24 months in the selected dwelling.

3. Apply the survey questionnaire for all children aged between 0 and 24 months in the selected dwelling.

4. Select the next dwelling to sample by spinning a bottle and walking in the indicated direction. Count the dwellings you pass. Sample the third dwelling. If there are no children aged between 0 and 24 months in the selected dwelling then sample the nearest dwelling with a child aged between 0 and 24 months. Sample all children aged between 0 and 24 months in the selected dwelling. If you reach the edge of the cluster then return to the centre of the cluster and repeat step (2) above. Remember to keep count of the children sampled from the segment.

5. Stop sampling in the segment when you have sampled the required number of children from the segment. Since you sample all eligible children in a selected dwelling, you may sample a few more children than expected. This is OK. Always sample all eligible children in a selected dwelling.

If, when you have sampled all segments, you have not sampled twelve children, you should return to the largest segment to finish sampling.

Random walk sampling in a cluster segment

1
spin
bottle

2
spin
bottle

spin
bottle
Start

3
spin
bottle

4
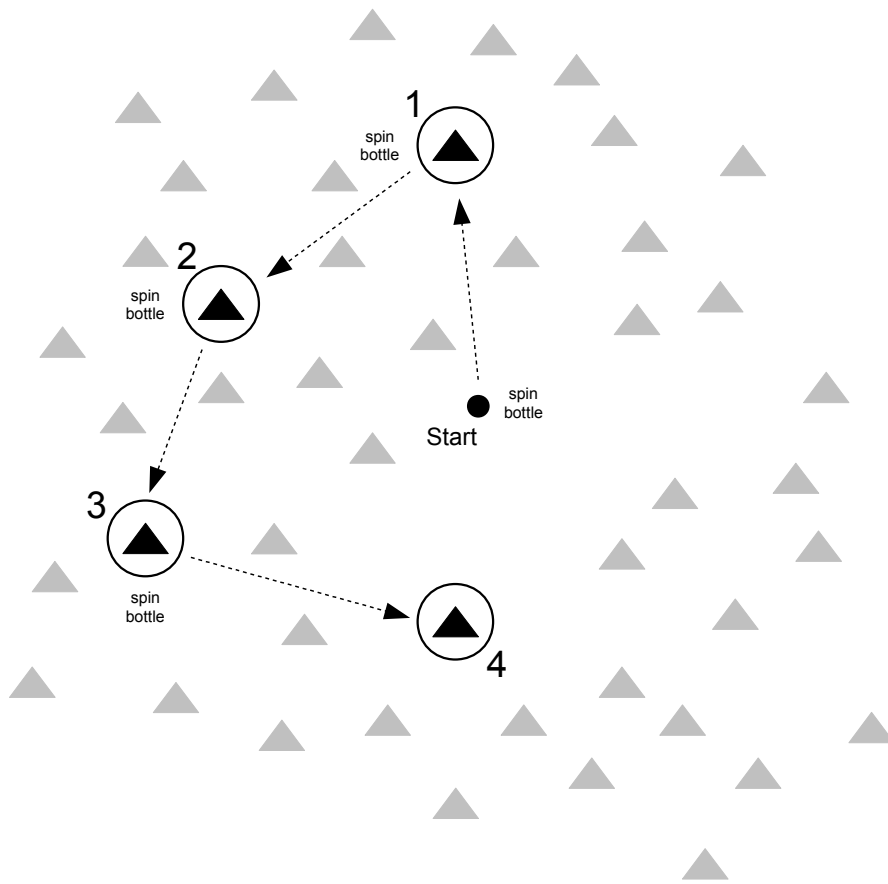
Systematic sampling

The <u>systematic</u> <u>sampling</u> method is used to sample houses in <u>ribbon</u> <u>segments</u>. Sampling proceeds as follows :

1. Move to one end of the ribbon segment.

2. Walk to the other end of the segment counting the houses that you pass.

3. Calculate the <u>step</u> <u>size</u> by dividing the number of dwellings in the segment by the required sample size for the segment. Use the <u>whole</u> <u>number</u> part of the result only. Do <u>not</u> round up.

4. Select the first dwelling to sample by walking along the segment counting the dwellings that you pass. Sample the dwelling indicated by the step size. If there are no children aged between 0 and 24 months in the selected dwelling then sample the <u>nearest</u> dwelling with a child aged between 0 and 24 months. Sample <u>all</u> children aged between 0 and 24 months in the selected dwelling.

5. Select the next dwelling to sample by walking along the segment. Count the dwellings that you pass. Sample the dwelling indicated by the <u>step</u> <u>size</u>. If there are no children aged between 0 and 24 months in the selected dwelling then sample the <u>nearest</u> dwelling with a child aged between 0 and 24 months. Sample <u>all</u> children aged between 0 and 24 months in the selected dwelling.

6. Stop sampling in the segment when you reach the end of the ribbon segment. This may mean that you sample extra children. This is OK. Do <u>not</u> stop sampling from a ribbon until you reach the end of the ribbon.

If, when you have sampled all segments, you have not sampled twelve children, you should return to the <u>largest</u> segment to finish sampling.
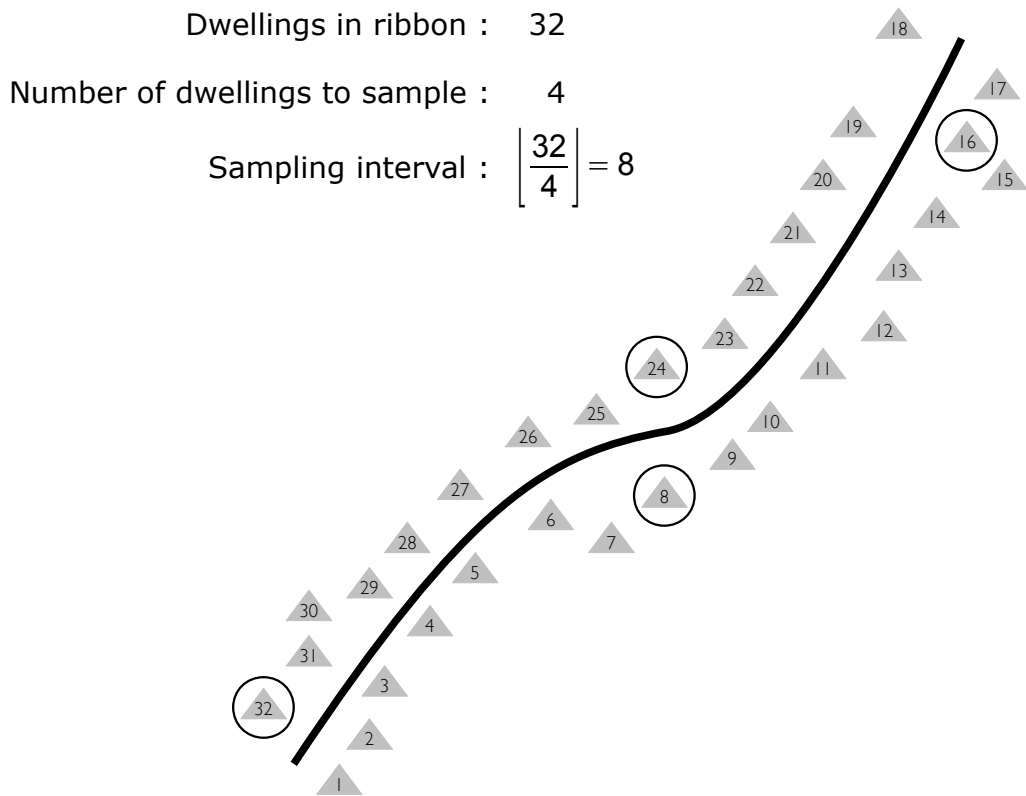
Systematic sampling in a ribbon segment

Dwellings in ribbon :   32

Number of dwellings to sample :   4

Sampling interval : $\left\lfloor \dfrac{32}{4} \right\rfloor = 8$

Sampling in urban settings

In a large city, such as Freetown, the first-stage sample is taken by replacing chiefdoms with sections and communities with city blocks :

Rural districts

District — Chiefdom — Village, Village, Village, Village
District — Chiefdom — Village, Village, Village
District — Chiefdom — Village, Village, Village

Urban and peri-urban districts

District — Section — City Block, City Block, City Block, City Block
District — Section — City Block, City Block, City Block
District — Section — City Block, City Block, City Block
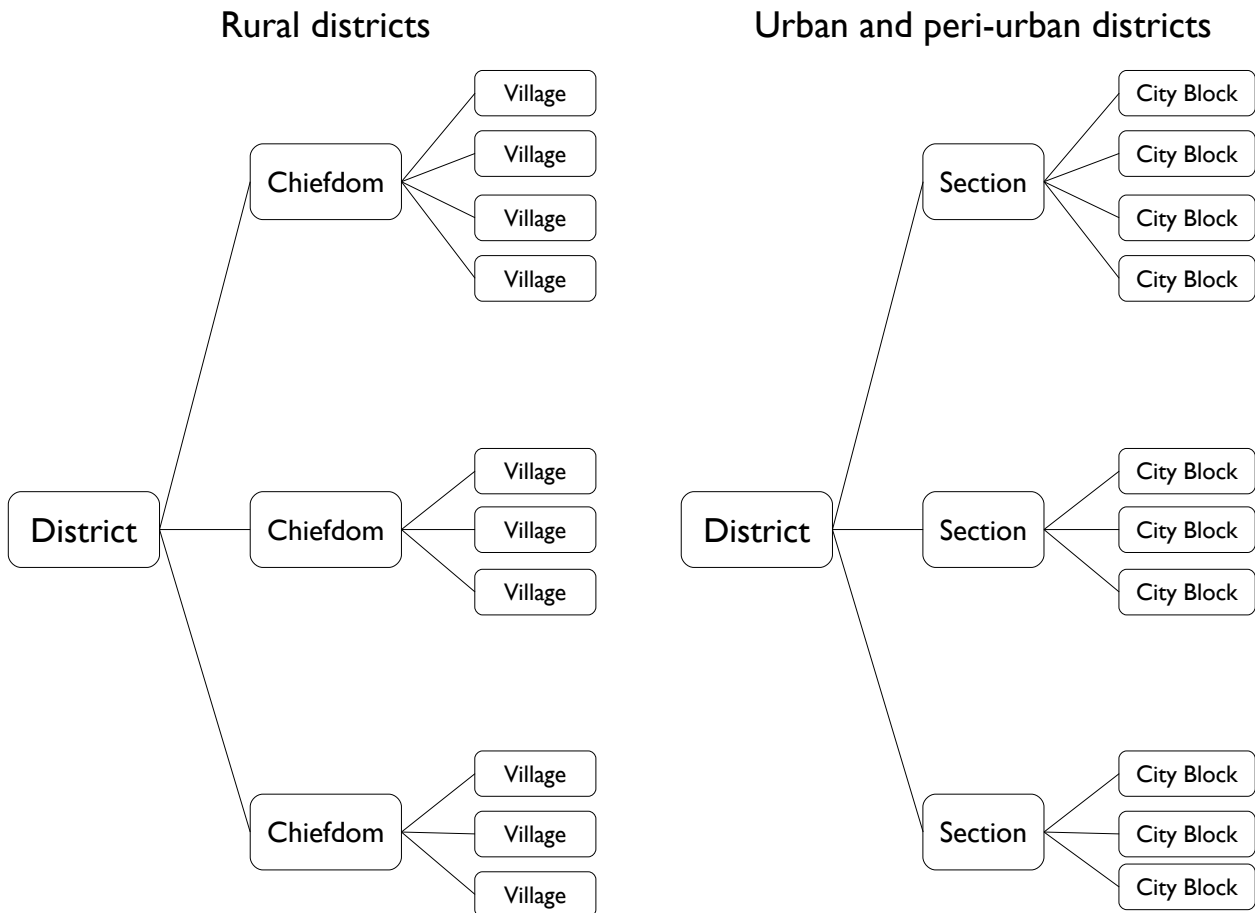
Census enumeration areas (EAs) are usually city blocks. The Sierra Leone Central Statistics Bureau can provide lists of EAs for the Western Area (urban and peri-urban) districts and large-scale maps of EAs selected for sampling (next page).

In these settings, children are sampled by moving from door-to-door. <u>All</u> dwellings in the selected EA are sampled and <u>all</u> eligible children in the selected dwellings are sampled. This means that <u>all</u> eligible children in a selected EA are sampled.

The number of EAs to be sampled will depend on the expected number of eligible children in each EA / city block. You should aim for an overall sample size of n = 192. You should <u>not</u> sample fewer than sixteen EAs / city blocks.

An example EA map provided by the Sierra Leone Central Statistics Bureau
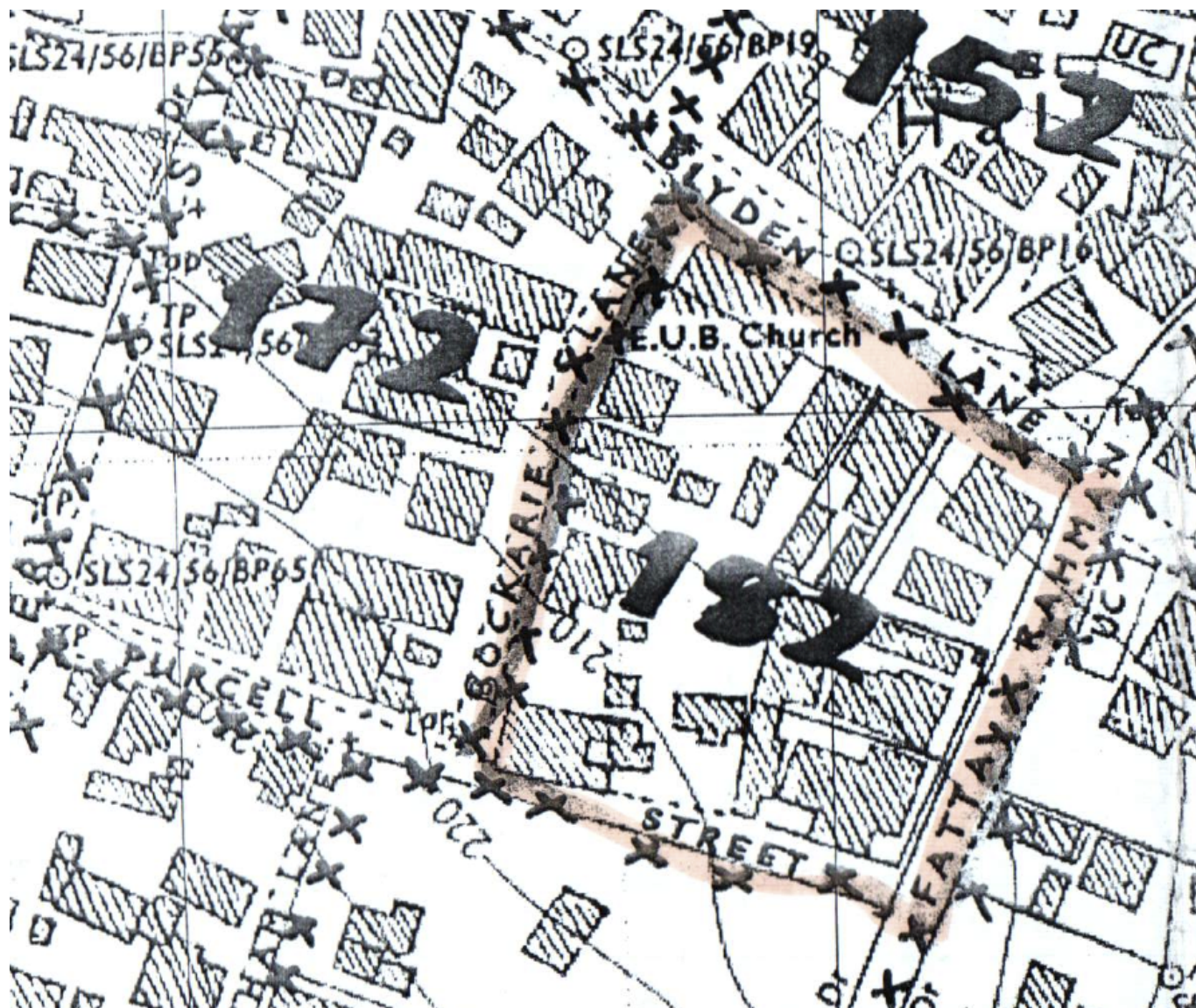
All dwellings in the marked area (labelled '182') should be sampled

The survey dataset

The survey dataset is collected using a short (i.e. two page) questionnaire. Here is the first page of the questionnaire :

Core Indicators Questionnaire

Record Number   : |__|__|__| *(LEAVE BLANK. FILLED AT DATA-ENTRY)*

Interviewer   : |__|__|__| *(ENTER INITIALS OF INTERVIEWER)*

PSU Identifier   : |__|__| *(CODE USED TO IDENTIFY TOWN / VILLAGE)*

District   : |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

Chiefdom   : |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

Section   : |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

Town / Village   : |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

Mother's Name   : |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

Child's Name   : |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|

Age (in months)   : |__|__| (RECORD 00 IF BELOW ONE MONTH)

U5 Card Seen   : |__| $_1$ Yes |__| $_2$ No

Sex   : |__| $_1$ Male |__| $_2$ Female

Q1 : Are you aware of any group or individuals <u>in</u> <u>your</u> <u>own</u> <u>community</u>
      that talk to mothers and / or care-givers about how to feed and
      care for children aged under 2 years?

                         |__| $_1$ Yes |__| $_2$ No

      If NO, go to Q4

Q2 : Have you come in contact at least once with any of this group or
      individuals in the past month?

                         |__| $_1$ Yes |__| $_2$ No

      If NO, go to Q4

Q3 : What did this person talk to you about?

      Do <u>not</u> prompt.
      Probe 'Anything else?'.
      Tick <u>all</u> topics mentioned ...

          (a) Early Initiation of Breastfeeding |__|
          (b) Exclusive breastfeeding |__|
          (c) Continued Breastfeeding |__|
          (d) Complementary Feeding |__|
          (e) Hygiene practices |__|
          (f) Maternal Nutrition |__|
          (g) To attend GMP and PNC sessions |__|

The survey dataset

The survey dataset is collected using a short (i.e. two page) questionnaire. Here is the second page of the questionnaire :

Q4 : Should a mother meet (have sex) with her husband / man during breast feeding?

|__| 1 Yes |__| 2 No

Q5 : What can a breast feeding mother do that will harm the health of her baby?

Do not prompt.
Probe 'Anything else'?
Tick YES if sexual intercourse mentioned ...

|__| 1 Yes |__| 2 No

Q6 : If you have sexual intercourse, will you stop breastfeeding?

|__| 1 Yes |__| 2 No

--- IF CHILD IS < 6 MONTHS OLD THEN STOP ---

Q7 : Did your child recently receive any medicine that was dropped in the mouth?

|__| 1 Yes |__| 2 No

If NO, go to Q9

Q8 : What was the colour?

|__| 1 Red / Blue |__| 2 Other

Q9 : Did your child recently receive any medicine given by mouth for worms?

|__| 1 Yes |__| 2 No

Q10 : Measure MUAC (6 – 24 months only). While measuring the MUAC of child ask the parent if this was done on the child in the past month and record ...

|__| 1 Yes |__| 2 No

Q11 : MUAC reading of child (mm): |__|__|__| mm

Q12 : Check for oedema (6 – 24 months only). While checking the child for oedema, ask the parent if this was done on the child in the past month and record ...

|__| 1 Yes |__| 2 No

Q13 : Is oedema present?

|__| 1 Yes |__| 2 No

Entry and analysis of survey data

The survey dataset can be entered, stored, and analysed using a spreadsheet package such as Microsoft Excel or OpenOffice Calc.

Here is a suggestion for column names and codes :

Questionnaire	Column Name	Codes	Notes
Record Number	ROW	None	A unique number created at data-entry time. Helps in finding questionnaires for checking and follow-up. Removes the need to enter a lot of identifying data.
PSU Identifier	PSU	None	Identifies each sampled community.
Age (in months)	AGE	None	Age in months.
U5 Card Seen	U5	1 = Yes 2 = No	A blank / empty cell is used to indicate missing or not-applicable data.
Q1	Q1		
Q2	Q2		
Q3A	Q3a		
Q3B	Q3b		
Q3C	Q3c		
Q3D	Q3d		
Q3E	Q3e		
Q3F	Q3f		
Q3G	Q3g		
Q4	Q4		
Q5	Q5		
Q6	Q6		
Q7	Q7		
Q8	Q8	1 = Red / Blue 2 = Other	A blank / empty cell is used to indicate missing or not-applicable data.
Q9	Q9	1 = Yes 2 = No	A blank / empty cell is used to indicate missing or not-applicable data.
Q10	Q10		
Q11	MUAC	None	MUAC in mm A blank / empty cell is used to indicate missing or not-applicable data.
Q12	Q12	1 = Yes 2 = No	A blank / empty cell is used to indicate missing or not-applicable data.
Q13	Q13		

The examples presented in this handbook use these column names and codes.

Entry and analysis of survey data

Here is an example of some survey data that has been entered into a spreadsheet package :

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
ROW	PSU	AGE	U5	SEX	Q1	Q2	Q3a	Q3b	Q3c	Q3d	Q3e	Q3f	Q3g	Q4	Q5	Q6	Q7	Q8	Q9	Q10	MUAC	Q12	Q13
1	1	3	2	2	2	1	2	1	1	1	2	1	2	2	1	2	1	1	1	1	163	1	2
2	1	21	1	1	1	1	1	2	1	2	2	1	1	2	1	2	1	1	1	1	152	1	2
3	1	7	1	1	1	1	1	1	1	2	2	2	2	2	1	2	1	1	1	2	142	2	2
4	1	20	1	1	1	1	1	1	2	2	2	1	1	2	1	2							
5	1	4	1	1	1	1	2	1	1	1	2	1	2	2	1	2	1	1	1	1	120	1	2
6	1	12	1	1	1	1	1	2	2	2	2	1	1	2	1	2	2						
7	1	11	1	1	1	1	1	1	1	1	2	1	1	1	2	1							
8	1	4	2	2	2									1	2	1	1	1	1	1	126	1	2
9	1	14	2	2	2									1	1	1	1	1	1	1	137	1	2
10	1	8	1	1	1									2	2	1	1	1	1	1	133	1	2
11	1	12	1	1	2									1	1	2							
12	1	5	1	1	2	2								2	1	1	2						
185	16	14	1	2	1	1	1	2	1	1	2	2	1	2	1	2	1	1	1	2	138	2	2
186	16	6	1	2	1	1	2	1	1	1	2	1	2	2	1	1	1	2	2	2	134	2	2
187	16	23	1	1	1	2		1	1	1				2	2	2							
188	16	14	1	2	1	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	148	1	2
189	16	7	1	1	1	1	2							2	1	1	1	1	1	2	132	2	2
190	16	9	1	1	1	2		1	1	2	1	2	1	2	2	2	1	1	1	1	128	1	2
191	16	0	2	1	1	1	1	1	1	1	2	2	1	2	1	1							
192	16	7	1	2	1	1	1	2	2	2			2	2	1	1	1	1	1	1	131	1	2

Data shown are for illustration purposes only

Note that cells are left blank / empty when data is not-applicable or is missing.

C2A : Coverage of CMAM screening activities

Indicator C2A :

Percentage of children screened for SAM in the previous month in IYCF target communities

estimates the coverage of CMAM screening activities in the IYCF target communities. It is calculated from Q10 and Q12. <u>Both</u> MUAC and oedema should have been checked :

$$C2A = \frac{number\ of\ records\ with\ Q10 = YES\ \textbf{\textit{and}}\ Q12 = YES}{number\ of\ records\ for\ children\ aged\ 6 - 24\ months}$$

Here is the procedure for calculating indicator C2A using a spreadsheet package :

new column

	U	V	W	X	Y
1	Q10	MUAC	Q12	Q13	C2A
2					=IF(ISBLANK(U2),"",IF(AND(U2=1,W2=1),1,2))
3	1	163	1	2	=IF(ISBLANK(U3),"",IF(AND(U3=1,W3=1),1,2))
4	1	152	1	2	=IF(ISBLANK(U4),"",IF(AND(U4=1,W4=1),1,2))
5	2	142	2	2	=IF(ISBLANK(U5),"",IF(AND(U5=1,W5=1),1,2))
6					=IF(ISBLANK(U6),"",IF(AND(U6=1,W6=1),1,2))
					=IF(ISBLANK(U7),"",IF(AND(U7=1,W7=1),1,2))
190	2	132	2	2	=IF(ISBLANK(U8),"",IF(AND(U8=1,W8=1),1,2))
191	1	128	1	2	=IF(ISBLANK(U191), ,)
192					=IF(ISBLANK(U192),"",IF(AND(U192=1,W192=1),1,2))
193	1	131	1	2	=IF(ISBLANK(U193),"",IF(AND(U193=1,W193=1),1,2))
194					
195					=COUNTIF(Y2:Y193,1)/COUNT(Y2:Y193)
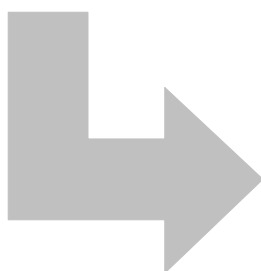
	U	V	W	X	Y
1	Q10	MUAC	Q12	Q13	C2A
2					
3	1	163	1	2	1
4	1	152	1	2	1
5	2	142	2	2	2
6					
			1	2	1
190	2	132			
191	1	128	1	2	1
192					
193	1	131	1	2	1
194					
195					17.5%

Data shown are for illustration purposes only

I2 : Prevalence of belief in *banfa*

Indicator I2 :

> *Percentage of women with children aged ≤ 24 months that believe that having sex during breastfeeding will harm the health of their child*

estimates the prevalence of belief in *banfa*. It is calculated from Q4, Q5, and Q6 :

$$I2 = \frac{number\ of\ records\ with\ Q4 = NO\ \textbf{or}\ Q5 = YES\ \textbf{or}\ Q6 = YES}{total\ number\ of\ records}$$

Here is the procedure for calculating indicator I2 in a spreadsheet package :

new column inserted

	O	P	Q	R	S
1	Q4	Q5	Q6	I2	Q7
2	2	1	2	=IF(OR(O2=2,P2=1,Q2=1),1,2)	
3	2	1	2	=IF(OR(O3=2,P3=1,Q3=1),1,2)	1
4	2	1	2	=IF(OR(O4=2,P4=1,Q4=1),1,2)	1
5	2	1	2	=IF(OR(O5=2,P5=1,Q5=1),1,2)	1
6	2	1	2	=IF(OR(O6=2,P6=1,Q6=1),1,2)	
				=IF(OR(O7=2,P7=1,Q7=1),1,2)	1
190	2	1	1	=IF(OR(O1...	
191	2	2	2	=IF(OR(O191=2,P191=1,Q191=1),1,2)	1
192	1	1	1	=IF(OR(O192=2,P192=1,Q192=1),1,2)	
193	2	1	1	=IF(OR(O193=2,P193=1,Q193=1),1,2)	1
194					
195				=COUNTIF(R2:R193,1)/COUNT(R2:R193)	
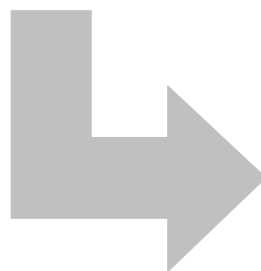
	O	P	Q	R	S
1	Q4	Q5	Q6	I2	Q7
2	2	1	2	1	
3	2	1	2	1	1
4	2	1	2	1	1
5	2	1	2	1	1
6	2	1	2	1	
			2	1	1
190	2	1			
191	2	2	2	2	1
192	1	1	1	1	
193	2	1	1	1	1
194					
195				90.0%	

Data shown are for illustration purposes only

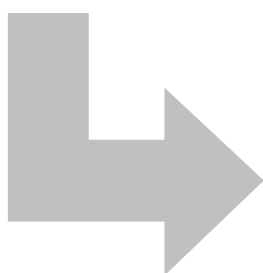# I3 : Coverage of IYCF counselling activities

Indicator I3 :

> *Percentage of mothers with children aged ≤ 24 months in IYCF target communities that are aware of IYCF counselling activities happening in their own community*

estimates the coverage of awareness of IYCF counselling activities in IYCF target communities. It is calculated from Q1 :

$$I3 = \frac{number\ of\ records\ with\ Q1 = YES}{total\ number\ of\ records}$$

Here is the procedure for calculating indicator I3 in a spreadsheet package :

	A	B	C	D	E	F	G
1	ROW	PSU	AGE	U5	SEX	Q1	Q2
2	1	1	3	2	2	1	
3	2	1	21	1	1	1	1
4	3	1	7	1	1	1	1
5	4	1	20	1	1	1	1
6	5	1	4	1	1	1	1
						2	1
190	189	16	7	1	1		
191	190	16	9	1	1	1	2
192	191	16	0	2	1	1	1
193	192	16	7	1	2	1	1
194							
195					=COUNTIF(F2:F193,1)/COUNT(F2:F193)		

	A	B	C	D	E	F	G
1	ROW	PSU	AGE	U5	SEX	Q1	Q2
2	1	1	3	2	2	1	
3	2	1	21	1	1	1	1
4	3	1	7	1	1	1	1
5	4	1	20	1	1	1	1
6	5	1	4	1	1	1	1
					2	2	1
190	189	16	7				
191	190	16	9	1	1	1	2
192	191	16	0	2	1	1	1
193	192	16	7	1	2	1	1
194							
195						90.1%	

Data shown are for illustration purposes only

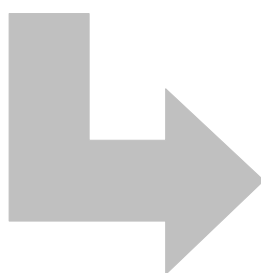# I4 : Coverage of IYCF counselling services

Indicator I4 :

Percentage of mothers with children aged ≤ 24 months in IYCF target communities that have been in contact with a mother support group in the previous month

estimates the coverage of IYCF counselling activities. It is calculated from Q2 :

$$I4 = \frac{number\ of\ records\ with\ Q2 = YES}{total\ number\ of\ records}$$

Here is the procedure for calculating indicator I4 in a spreadsheet package :

	A	B	C	D	E	F	G	H
1	ROW	PSU	AGE	U5	SEX	Q1	Q2	Q3a
2	1	1	3	2	2	2		
3	2	1	21	1	1	1	1	2
4	3	1	7	1	1	1	1	1
5	4	1	20	1	1	1	1	1
6	5	1	4	1	1	1	1	1
							2	1
190	189	16	7	1	1	1		
191	190	16	9	1	1	1	2	
192	191	16	0	2	1	1	1	1
193	192	16	7	1	2	1	1	1
194								
195							=COUNTIF(G2:G193,1)/COUNT(F2:F193)	

	A	B	C	D	E	F	G	H
1	ROW	PSU	AGE	U5	SEX	Q1	Q2	Q3a
2	1	1	3	2	2	2		
3	2	1	21	1	1	1	1	2
4	3	1	7	1	1	1	1	1
5	4	1	20	1	1	1	1	1
6	5	1	4	1	1	1	1	1
					2	1	2	1
190	189	16	7	1				
191	190	16	9	1	1	1	2	
192	191	16	0	2	1	1	1	1
193	192	16	7	1	2	1	1	1
194								
195							77.8%	

Data shown are for illustration purposes only

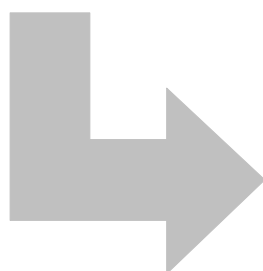# I4a .. I4g : Recall of IYCF counselling messages

Indicators I4a .. I4g assess whether key IYCF program messages are being effectively transmitted to the target population. They are calculated as :

$$I4x = \frac{number\ of\ records\ with\ Q3x = YES}{number\ of\ records\ with\ Q2 = YES}$$

where *x* can be one of *a*, *b*, *c*, *d*, *e*, *f*, or *g* (as in *I4c* and *Q3c* for the recall of messages relating to continued breastfeeding).

Here is the procedure for calculating indicator I4c in a spreadsheet package :

	G	H	I	J	K	L	M	N
1	Q2	Q3a	Q3b	Q3c	Q3d	Q3e	Q3f	Q3g
2								
3	1	2	1	1	1	2	1	2
4	1	1	2	1	2	2	1	1
5	1	1	1	1	2	2	2	2
6	1	1	1	2	2	2	1	1
				1	1	1	2	1
190	1	2						
191	2							
192	1	1	1	1	1	1	2	1
193	1	1	2	2	2	2	2	2
194								
195				=COUNTIF(J2:J193,1)/COUNTIF(G2:G193,1)				

	G	H	I	J	K	L	M	N
1	Q2	Q3a	Q3b	Q3c	Q3d	Q3e	Q3f	Q3g
2								
3	1	2	1	1	1	2	1	2
4	1	1	2	1	2	2	1	1
5	1	1	1	1	2	2	2	2
6	1	1	1	2	2	2	1	1
				1	1	1	2	1
190	1	2						
191	2							
192	1	1	1	1	1	1	2	1
193	1	1	2	2	2	2	2	2
194								
195				43.9%				

Data shown are for illustration purposes only

The procedure is similar for calculating indicators I4a .. I4g.
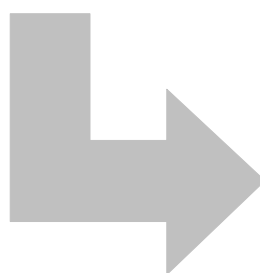
I9A : Coverage of vitamin A

Indicator I9A :

Coverage of vitamin A for children age 6 – 24 months in the IYCF target communities

estimates coverage of the vitamin A program in the IYCF target communities. It is calculated from Q8 and AGE :

$$I9A = \frac{number\ of\ records\ with\ Q8 = RED\ /\ BLUE}{number\ of\ records\ for\ children\ aged\ 6 - 24\ months}$$

Here is the procedure for calculating indicator I9A in a spreadsheet package :

	C	S
1	AGE	Q8
2	3	
3	21	1
4	7	1
5	20	1
6	4	
		1
190	7	
191	9	1
192	0	
193	7	1
194		
195		=COUNTIF(S2:S193,1)/COUNTIF(C2:C193,">5")

	C	S
1	AGE	Q8
2	3	
3	21	1
4	7	1
5	20	1
6	4	
		1
190	7	
191	9	1
192	0	
193	7	1
194		
195		95.6%

Data shown are for illustration purposes only

I9B : Coverage of deworming

Indicator I9B :

*Coverage of deworming for children age 12 – 24 months in the IYCF target communities*

estimates coverage of the deworming program in the IYCF target communities. It is calculated from Q9 and AGE :

$$I9B = \frac{number\ of\ records\ with\ Q9 = YES}{number\ of\ records\ for\ children\ aged\ 12 - 24\ months}$$

Here is the procedure for calculating indicator I9B in a spreadsheet package :

new column

	C	T	U
1	AGE	Q9	I9B
2	3		=IF(AND(C2>11,T2=1),1,2)
3	21	1	=IF(AND(C2>11,T2=1),1,2)
4	7	1	=IF(AND(C2>11,T2=1),1,2)
5	20	1	=IF(AND(C2>11,T2=1),1,2)
6	4		=IF(AND(C2>11,T2=1),1,2)
			=IF(AND(C2>11,T2=1),1,2)1
190	7		
191	9		=IF(AND(C191>11,T191=1),1,2)
192	0		=IF(AND(C192>11,T192=1),1,2)
193	7	1	=IF(AND(C193>11,T193=1),1,2)
194			
195			=COUNTIF(U2:U193,1)/COUNTIF(C2:C193,">11")
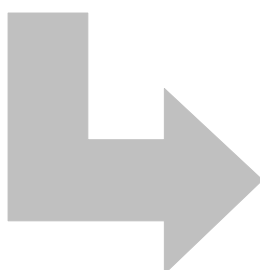
	C	T	U
1	AGE	Q9	I9B
2	3		2
3	21	1	1
4	7	1	1
5	20	1	1
6	4		2
		1	1
190	7		
191	9	1	1
192	0		2
193	7	1	1
194			
195			80.5%

Data shown are for illustration purposes only

H1 : Coverage of health extension services

Indicator H1 :

Percentage of children whose mothers can produce an under-fives health card in the IYCF target communities

provides an <u>approximate</u> estimate of the coverage of health extension services such as immunisation and growth monitoring in the IYCF target communities. It does <u>not</u> provide an estimate of EPI coverage or GMP participation.

It is calculated as :

$$H1 = \frac{number\ of\ records\ with\ U5\ Card\ Seen = YES}{total\ number\ of\ records}$$

Here is the procedure for calculating indicator H1 in a spreadsheet package :

	A	B	C	D	E
1	ROW	PSU	AGE	U5	SEX
2	1	1	3	2	2
3	2	1	21	1	1
4	3	1	7	1	1
5	4	1	20	1	1
6	5	1	4	1	1
				1	2
190	189	16	7		
191	190	16	9	1	1
192	191	16	0	2	1
193	192	16	7	1	2
194					
195			=COUNTIF(D2:D193,1)/COUNT(D2:D193)		
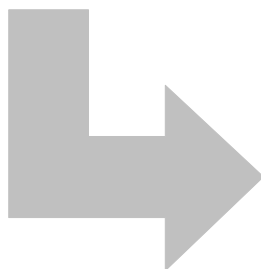
	A	B	C	D	E
1	ROW	PSU	AGE	U5	SEX
2	1	1	3	2	2
3	2	1	21	1	1
4	3	1	7	1	1
5	4	1	20	1	1
6	5	1	4	1	1
			14	1	2
190	189	16			
191	190	16	9	1	1
192	191	16	0	2	1
193	192	16	7	1	2
194					
195				87.5%	

Data shown are for illustration purposes only

H2 : Prevalence of GAM by MUAC and oedema

Indicator H2 :

*Prevalence of GAM by MUAC and oedema in children aged between 6 and 24 months in IYCF target communities*

can be used as an *outcome indicator* for the IYCF program. It is calculated from Q11 (MUAC) and Q13 (presence of oedema) :

$$H2 = \frac{number\ of\ records\ with\ Q11 < 125\ \textbf{or}\ Q13 = YES}{number\ of\ records\ for\ children\ aged\ 6 - 24\ months}$$

Here is the procedure for calculating indicator H3 in a spreadsheet package :

new column

	U	V	W	X	Y
1	Q10	MUAC	Q12	Q13	H2
2					=IF(ISBLANK(V2),"",IF(OR(V2<125,X2=1),1,2))
3	1	163	1	2	=IF(ISBLANK(V3),"",IF(OR(V3<125,X3=1),1,2))
4	1	152	1	2	=IF(ISBLANK(V4),"",IF(OR(V4<125,X4=1),1,2))
5	2	142	2	2	=IF(ISBLANK(V5),"",IF(OR(V5<125,X5=1),1,2))
6					=IF(ISBLANK(V6),"",IF(OR(V6<125,X6=1),1,2))
					=IF(ISBLANK(V7),"",IF(OR(V7<125,X7=1),1,2))
190	2	132	2	2	=IF(ISBLANK(V...
191	1	128	1	2	=IF(ISBLANK(V191),"",IF(OR(V191<125,X191=1),1,2))
192					=IF(ISBLANK(V192),"",IF(OR(V192<125,X192=1),1,2))
193	1	131	1	2	=IF(ISBLANK(V193),"",IF(OR(V193<125,X193=1),1,2))
194					
195					=COUNTIF(Y2:Y193,1)/COUNT(Y2:Y193)
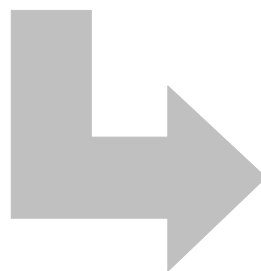
	U	V	W	X	Y
1	Q10	MUAC	Q12	Q13	H2
2					2
3	1	163	1	2	2
4	1	152	1	2	2
5	2	142	2	2	2
6					2
			1	2	2
190	2	132			
191	1	128	1	2	2
192					2
193	1	131	1	2	2
194					
195					9.8%

Data shown are for illustration purposes only

Using the survey indicators

The survey indicators have been selected to be useful for managing CMAM and IYCF programs at the district level and the national level :

C2A	This indicator tells you the completeness of coverage of screening activities. Increasing screening coverage should increase program coverage.
I2	This indicator tell you if belief in *banfa* is likely to be a barrier to improving IYCF in a district.
I3	This indicator tells you how effective your program has been in raising the awareness of IYCF counselling services.
I4	This indicator estimates the coverage of IYCF counselling activities.
I4x	This group of indicators tell you how well core IYCF messages are being transmitted.
I9A	This indicator estimates the coverage of the vitamin A program.
I9B	This indicator estimates the coverage of the deworming program.
H1	This indicator tells you about the coverage of health extension services.
H2	This indicator estimates GAM and can be used to estimate need for nutrition support programs.

Additional IYCF indicators and WASH indicators may also be collected as part of core indicator surveys.

Additional indicators

Additional indicators may be collected by the survey. The most useful are probably the standard IYCF behavioural indicators. These are described in :

> WHO, IFPRI, UC Davis, FANTA, USAID, UNICEF, *Indicators for assessing infant and young child feeding practices : Part 1 - Definitions*, Geneva, World Health Organization, 2008

> WHO, IFPRI, UC Davis, FANTA, USAID, UNICEF. *Indicators for assessing infant and young child feeding practices : Part 2 - Measurement*, Geneva, World Health Organization, 2008

It may also be useful to collect WASH indicators. Useful guide for WASH indicators are :

> WHO, UNICEF, *Core questions on drinking-water and sanitation for household surveys*, WHO/UNICEF Joint Monitoring Pro- gramme for Water Supply and Sanitation, Geneva, 2006

> Hernandez O, Tobias S, *Access and Behavioral Outcome Indicators for Water, Sanitation*, and Hygiene, USAID Hygiene Improvement Project, USAID, Washington, 2010

> Billig P, Bendahmane D, Swindale A, *Water and Sanitation Indicators Measurement Guide*, FANTA, Washington, 1999

All of these publications provide example question sets as well as providing detailed guidance on the analysis and interpretation of indicators.

Appendices 1 and 2 of this document present IYCF behavioural indicators and WASH indicators adapted from these guides for simplicity and rapidity, as well as to the relatively small sample size (i.e. compared to MICS, DHS, &c.) used by the survey described in this handbook.

Appendix 1

IYCF behavioural indicators calculated from survey data

A single indicator approach

The approach used is to produce a single indicator :

Percentage of children aged 0 – 24 months receiving good infant and young child feeding

with 'good infant and young child feeding' defined as exclusive breastfeeding in children aged under six months and as age-appropriate feeding practices (defined in terms of continued breastfeeding, dietary diversity, and meal frequency) in older children.

Age-appropriate feeding practice is measured using an *infant and child feeding index* (ICFI) that is based on an index devised by Mary Arimond and Marie Ruel of the International Food Policy Research Institute for the 2000 DHS survey of Ethiopia and developed by FANTA as a KPC2000+ indicator :

	Age-group (months)					
	6 - 8		9 - 11		12 - 24	
	Value	Score	Value	Score	Value	Score
Breastfed (24 Hours)	Yes	+ 2	Yes	+ 2	Yes	+ 1
Food groups (24 Hours)	1 ≥ 2	+ 1 + 2	1 or 2 ≥ 3	+ 1 + 2	2 or 3 ≥ 4	+ 1 + 2
Meal frequency (24 Hours)	1 ≥ 2	+ 1 + 2	1 or 2 ≥ 3	+ 1 + 2	2 3 ≥ 4	+ 1 + 2 + 3

The ICFI score is a measure of appropriate child feeding practices :

$$ICFI = Breastfeeding + Dietary\ Diversity + Meal\ Frequency$$

using age-specific weighting for each item. Children receive a score between zero and six. Children receiving a score of six are classified as receiving good infant and young child feeding.

A single indicator approach

The indicator can be calculated from the counts of children found in the cells of a 2-by-2 table:

		Classification	
		Good	Not good
Age	< 6 months	Exclusively breastfed	Not exclusively breastfed
	6 – 24 months	ICFI = 6	ICFI < 6

as:

$$\%GOOD = \frac{Number\ classified\ as\ good}{total\ number\ of\ records} \times 100$$

This is the <u>primary</u> <u>indicator</u> for monitoring and evaluating IYCF programs.

A set of <u>diagnostic</u> indicators are also calculated. These indicators show the contribution of breastfeeding, dietary diversity, and meal frequency to the calculated value of the primary indicator.

This approach can be seen as a *single indicator approach* or as a *hierarchical indicator approach*. Such an approach is simpler and more useful than the multiple indicator approach that is used in (e.g.) MICS and DHS surveys.

The single indicator approach

Here is an example of how results can be presented :

		% EBF
		85.5%

% GOOD

37.5%

< 6 months

6 – 24 months

% ICFI = 6

18.2%

Mean ICFI score

3.82

Continuing breastfeeding

% Currently breastfed

89.8%

Dietary diversity

% Component Score = 2

60.6%

Meal frequency

% Component Score ≥ 2

34.3%
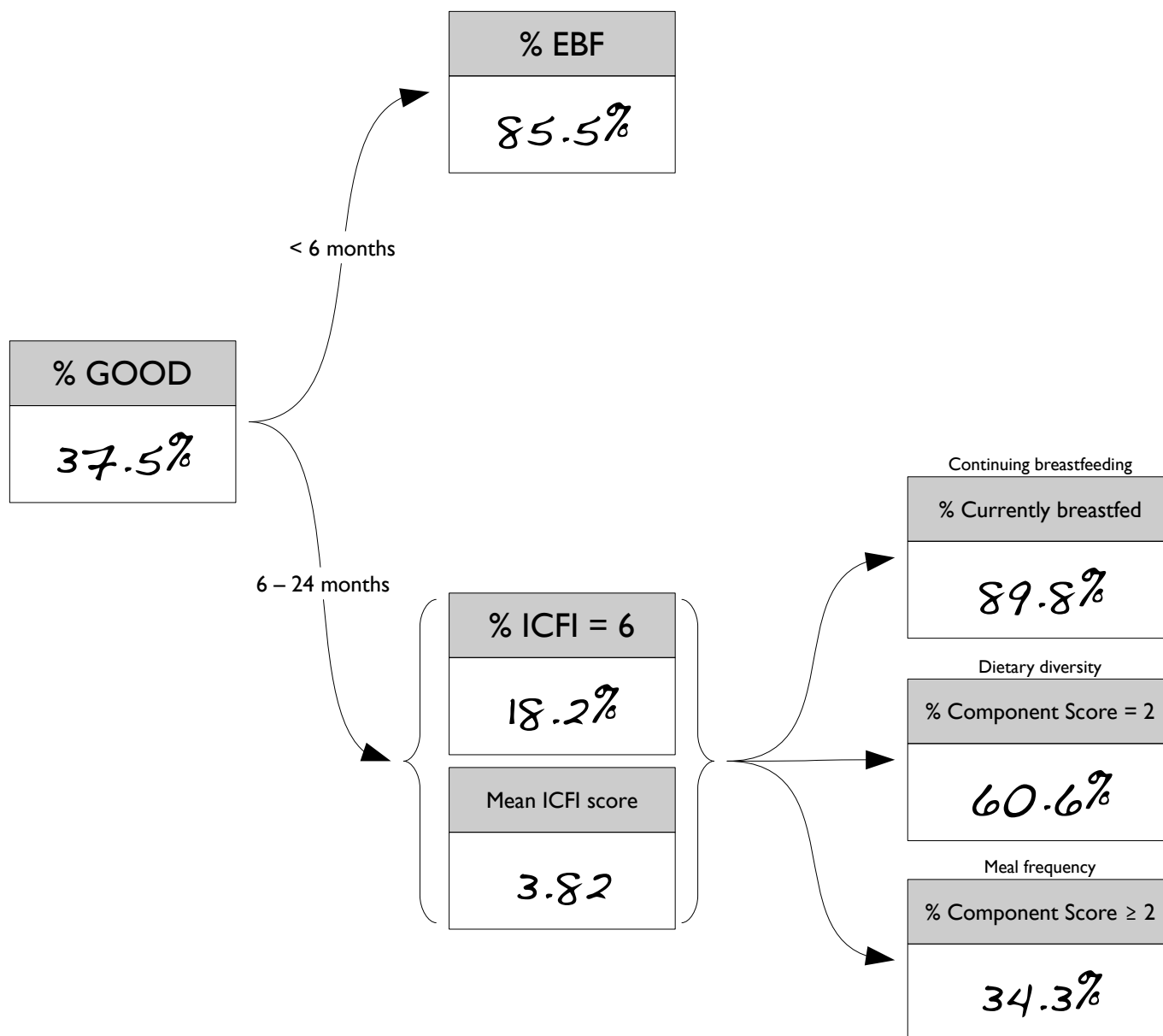
Data shown are for illustration purposes only

In this example, the poor performance is predominantly due to poor feeding practices in older children in terms of meal frequency and (to a lesser extent) dietary diversity. It would be sensible for the IYCF program being monitored in this example to focus their attention on improving complementary feeding practices.

The IYCF dataset

The IYCF dataset is collected using a short (i.e. single page) questionnaire :

IYCF Behavioural Indicators Questionnaire

F1 : Is [NAME OF CHILD] currently breastfed?

|__| 1 Yes |__| 2 No

F2 : Does [NAME OF CHILD] take any food or drink other than breastmilk?

|__| 1 Yes |__| 2 No

If NO then STOP!

F3 : How many times was [NAME OF CHILD] fed mashed or pureed food or solid or semi-solid food as a meal or a snack since this time yesterday?

Number of times : |__|__|

If ZERO then STOP!

F4 : Since this time yesterday has [NAME OF CHILD] received any of the following things to eat or drink?

Tick all that apply.

A Tinned milk, powdered milk, fresh milk, sour milk, cheese, yoghurt |__|

B Any food made from grain, roots, tubers, or plantain (millet, wheat, |__|
   bread flour, rice flour, cassava flour, maize flour, corn flour,
   corn meal, bulgar, barley, sorghum, rice, corn, gari, foo-foo,
   porridge, Irish potatoes, white sweet potatoes, yams, cassava,
   plantain

C Any food made from fruits or vegetables with yellow or orange flesh |__|
   such as carrots, pumpkin, red sweet potatoes, oranges, lemons,
   pawpaw, pineapple, mango **OR** dark green leafy vegetables such as
   cassava leaves, potato leaves, crain-crain, greens, kalami **OR** and
   food made with red palm oil or red palm nuts

D Any other fruits or vegetables |__|

E Any food made from lentils, beans, peas, groundnuts, sesame, nuts, |__|
   benni (sesame) seeds, or other seeds

F Any meat, bush-meat, liver, kidney, heart, chicken, duck, fish, |__|
   seafood, crab, lobster, shrimp, snails

G Eggs or any food made with eggs |__|

Entry and analysis of IYCF data

Here is an example of some IYCF indicator data that has been entered into a spreadsheet package :

	A	B	C	D	E	F	G	H	I	J	K
1	AGE	F1	F2	F3	F4A	F4B	F4C	F4D	F4E	F4F	F4G
2	24	1	1	3	1	1	2	2	1	1	2
3	9	1	1	2	1	1	2	2	1	1	2
4	10	1	1	3	2	1	1	2	2	2	2
5	4	1	2								
6	21	1	1	3	1	1	1	1	1	1	1
					1	1	2	2	1	1	
190	15	1	1	2	2						
191	0	1	2								
192	1	1	1	1	2	1	2	2	2	2	2
193	5	1	2								
194											
195											

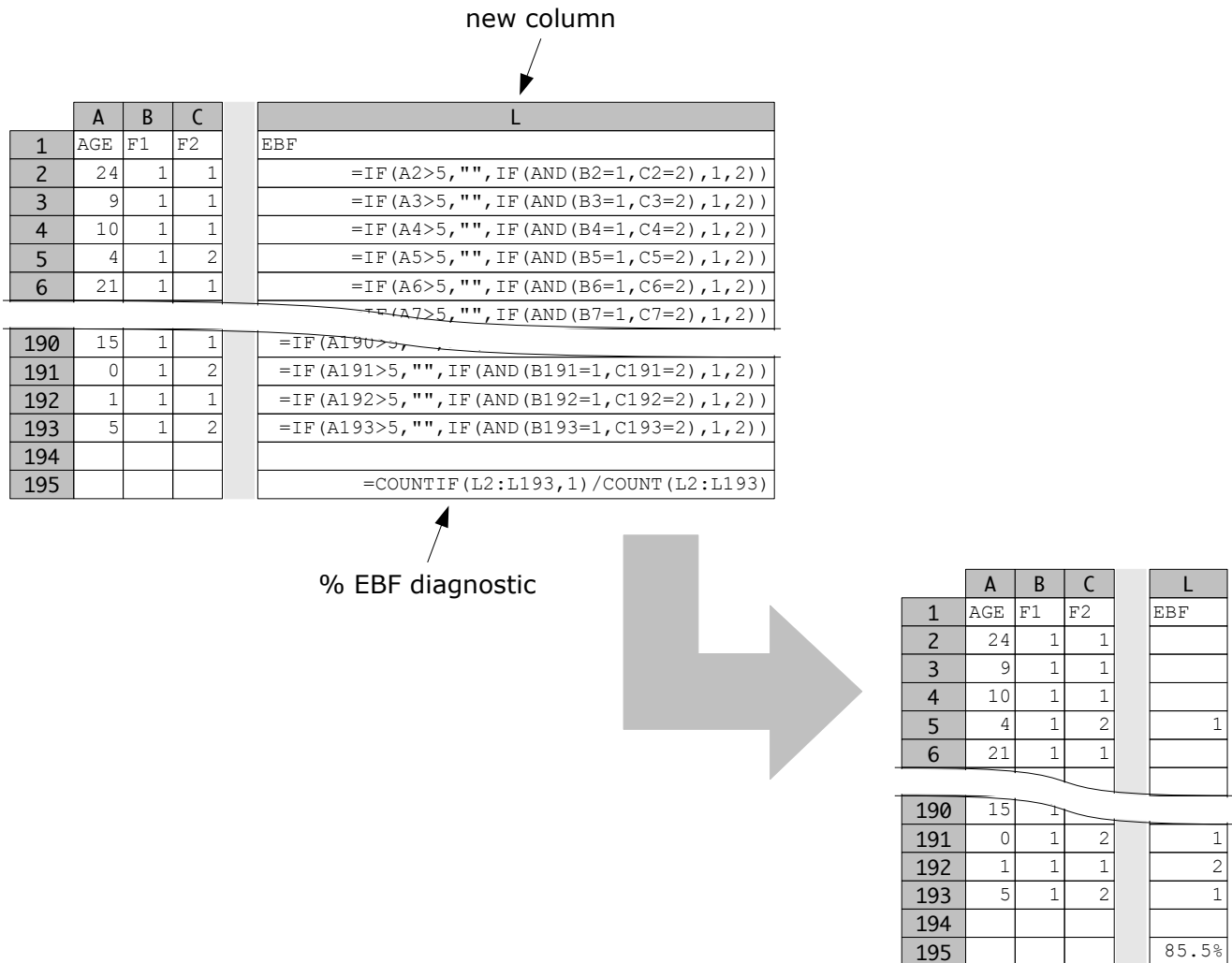Data shown are for illustration purposes only

Note that cells are left blank / empty when data is not-applicable or is missing.

Age data is taken from the core survey dataset.

Calculation of the primary indicator from the survey data is a multi-step process.

Exclusive breastfeeding to six months

Here is the procedure for calculating the exclusive breastfeeding component of the IYCF indicator :

new column

	A	B	C	L
1	AGE	F1	F2	EBF
2	24	1	1	=IF(A2>5,"",IF(AND(B2=1,C2=2),1,2))
3	9	1	1	=IF(A3>5,"",IF(AND(B3=1,C3=2),1,2))
4	10	1	1	=IF(A4>5,"",IF(AND(B4=1,C4=2),1,2))
5	4	1	2	=IF(A5>5,"",IF(AND(B5=1,C5=2),1,2))
6	21	1	1	=IF(A6>5,"",IF(AND(B6=1,C6=2),1,2))
				=IF(A7>5,"",IF(AND(B7=1,C7=2),1,2))
190	15	1	1	=IF(A190>5,
191	0	1	2	=IF(A191>5,"",IF(AND(B191=1,C191=2),1,2))
192	1	1	1	=IF(A192>5,"",IF(AND(B192=1,C192=2),1,2))
193	5	1	2	=IF(A193>5,"",IF(AND(B193=1,C193=2),1,2))
194				
195				=COUNTIF(L2:L193,1)/COUNT(L2:L193)

% EBF diagnostic

	A	B	C	L
1	AGE	F1	F2	EBF
2	24	1	1	
3	9	1	1	
4	10	1	1	
5	4	1	2	1
6	21	1	1	
190	15	1		
191	0	1	2	1
192	1	1	1	2
193	5	1	2	1
194				
195				85.5%

Data shown are for illustration purposes only

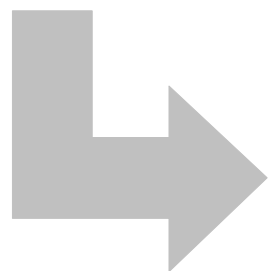Note that the % EBF diagnostic indicator is also calculated at this step.

Breastfeeding score for older children

Here is the procedure for calculating the breastfeeding score component of the ICFI score :

new column

	A	B	M
1	AGE	F1	BF
2	24	1	=IF(A2<6,"",AND(A2>5,A2<12,B2=1)*2+AND(A2>11,B2=1))
3	9	1	=IF(A3<6,"",AND(A3>5,A3<12,B3=1)*2+AND(A3>11,B3=1))
4	10	1	=IF(A4<6,"",AND(A4>5,A4<12,B4=1)*2+AND(A4>11,B4=1))
5	4	1	=IF(A5<6,"",AND(A5>5,A5<12,B5=1)*2+AND(A5>11,B5=1))
6	21	1	=IF(A6<6,"",AND(A6>5,A6<12,B6=1)*2+AND(A6>11,B6=1))
			=IF(A7<6,"",AND(A7>5,A7<12,B7=1)*2+AND(A7>11,B7=1))
190	15	1	=IF(A190<6,"",AND(A190>5,...))
191	0	1	=IF(A191<6,"",AND(A191>5,A191<12,B191=1)*2+AND(A191>11,B191=1))
192	1	1	=IF(A192<6,"",AND(A192>5,A192<12,B192=1)*2+AND(A192>11,B192=1))
193	5	1	=IF(A193<6,"",AND(A193>5,A193<12,B193=1)*2+AND(A193>11,B193=1))
194			
195			=COUNTIF(M2:M193,">0")/COUNT(M2:M193)

Continuing breastfeeding diagnostic

	A	B	M
1	AGE	F1	BF
2	24	1	1
3	9	1	2
4	10	1	2
5	4	1	
6	21	1	1
			0
190	15		
191	0	1	
192	1	1	
193	5	1	
194			
195			89.8%

Data shown are for illustration purposes only

Note that the continuing breastfeeding diagnostic indicator is also calculated at this step.

Dietary diversity

The dietary diversity (number of food groups consumed in the previous 24 hours) is scored differently in different age-groups.

The first step in working with dietary diversity is to count the number of food groups consumed in the previous 24 hours by children aged between 6 and 24 months :

new column

	E	F	G	H	I	J	K		N
1	F4A	F4B	F4C	F4D	F4E	F4F	F4G		FG7
2	1	1	2	2	1	1	2		=IF(A2<6,"",COUNTIF(E2:K2,1))
3	1	1	2	2	1	1	2		=IF(A3<6,"",COUNTIF(E3:K3,1))
4	2	1	1	2	2	2	2		=IF(A4<6,"",COUNTIF(E4:K4,1))
5									=IF(A5<6,"",COUNTIF(E5:K5,1))
6	1	1	1	1	1	1	1		=IF(A6<6,"",COUNTIF(E6:K6,1))
									=IF(A7<6,"",COUNTIF(E7:K7,1))
190	2	2	2	2	2	2	2		
191									=IF(A191<6,"",COUNTIF(E191:K191,1))
192	2	1	2	2	2	2	2		=IF(A192<6,"",COUNTIF(E192:K192,1))
193									=IF(A193<6,"",COUNTIF(E193:K193,1))
194									
195									
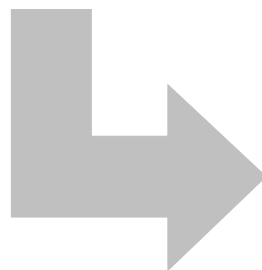
	E	F	G	H	I	J	K		N
1	F4A	F4B	F4C	F4D	F4E	F4F	F4G		FG7
2	1	1	2	2	1	1	2		4
3	1	1	2	2	1	1	2		4
4	2	1	1	2	2	2	2		2
5									
6	1	1	1	1	1	1	1		7
							1	1	5
190	2	2	2	2					
191									
192	2	1	2	2	2	2	2		
193									
194									
195									

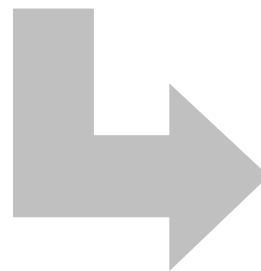Data shown are for illustration purposes only

Dietary diversity 6 - 9 months

Dietary diversity (number of food groups consumed in the previous 24 hours) is scored differently in different age-groups.

Here is the procedure for scoring dietary diversity for children aged between 6 and 9 months :

new column

	A		N	O
1	AGE		FG7	DD1
2	24		4	=IF(AND(A2>5,A2<9),(N2=1)+(N2>1)*2,"")
3	9		4	=IF(AND(A3>5,A3<9),(N3=1)+(N3>1)*2,"")
4	10		2	=IF(AND(A4>5,A4<9),(N4=1)+(N4>1)*2,"")
5	4			=IF(AND(A5>5,A5<9),(N5=1)+(N5>1)*2,"")
6	21		7	=IF(AND(A6>5,A6<9),(N6=1)+(N6>1)*2,"")
				=IF(AND(A7>5,A7<9),(N7=1)+(N7>1)*2,"")
190	15		5	=IF(AND(A190>5,
191	0			=IF(AND(A191>5,A191<9),(N191=1)+(N191>1)*2,"")
192	1			=IF(AND(A192>5,A192<9),(N192=1)+(N192>1)*2,"")
193	5			=IF(AND(A193>5,A2<193),(N193=1)+(N193>1)*2,"")
194				
195				

	A		N	O
1	AGE		FG7	DD1
2	24		4	
3	9		4	
4	10		2	
5	4			
6	21		7	
			5	0
190	15			
191	0			
192	1			
193	5			
194				
195				

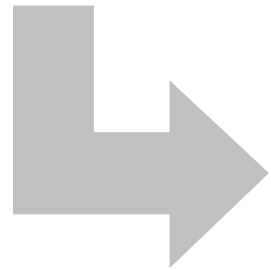Data shown are for illustration purposes only

Dietary diversity 9 - 12 months

Dietary diversity (number of food groups consumed in the previous 24 hours) is scored differently in different age-groups.

Here is the procedure for scoring dietary diversity for children aged between 9 and 12 months :

new column

	A		N	O	P
1	AGE		FG7	DD1	DD2
2	24		4		=IF(AND(A2>8,A2<12),OR(N2=1,N2=2)+(N2>2)*2,"")
3	9		4		=IF(AND(A3>8,A3<12),OR(N3=1,N3=2)+(N3>2)*2,"")
4	10		2		=IF(AND(A4>8,A4<12),OR(N4=1,N4=2)+(N4>2)*2,"")
5	4				=IF(AND(A5>8,A5<12),OR(N5=1,N5=2)+(N5>2)*2,"")
6	21		7		=IF(AND(A6>8,A6<12),OR(N6=1,N6=2)+(N6>2)*2,"")
					=IF(AND(A7>8,A7<12),OR(N7=1,N7=2)+(N7>2)*2,"")
190	15		5		=IF(AND(A190>8,A190...
191	0				=IF(AND(A191>8,A191<12),OR(N191=1,N191=2)+(N191>2)*2,"")
192	1				=IF(AND(A192>8,A192<12),OR(N192=1,N192=2)+(N192>2)*2,"")
193	5				=IF(AND(A193>8,A193<12),OR(N193=1,N193=2)+(N193>2)*2,"")
194					
195					

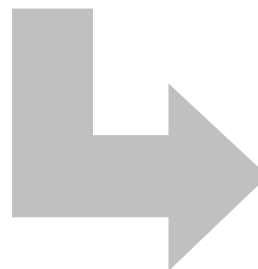|	A		N	O	P
1	AGE		FG7	DD1	DD2
2	24		4		
3	9		4		2
4	10		2		1
5	4				
6	21		7		
			5	0	
190	15				
191	0				
192	1				
193	5				
194					
195					

Data shown are for illustration purposes only

Dietary diversity 12 - 24 months

Dietary diversity (number of food groups consumed in the previous 24 hours) is scored differently in different age-groups.

Here is the procedure for scoring dietary diversity for children aged 12 months and older :

new column

	A		N	O	P	Q
1	AGE		FG7	DD1	DD2	DD3
2	24		4			=IF(A2>11,OR(N2=2,N2=3)+(N2>3)*2,"")
3	9		4		2	=IF(A3>11,OR(N3=2,N3=3)+(N3>3)*2,"")
4	10		2		1	=IF(A4>11,OR(N4=2,N4=3)+(N4>3)*2,"")
5	4					=IF(A5>11,OR(N5=2,N5=3)+(N5>3)*2,"")
6	21		7			=IF(A6>11,OR(N6=2,N6=3)+(N6>3)*2,"")
						=IF(A7>11,OR(N7=2,N7=3)+(N7>3)*2,"")
190	15		5			=IF(A190>11,
191	0					=IF(A191>11,OR(N191=2,N191=3)+(N191>3)*2,"")
192	1					=IF(A192>11,OR(N192=2,N192=3)+(N192>3)*2,"")
193	5					=IF(A193>11,OR(N193=2,N193=3)+(N193>3)*2,"")
194						
195						

	A		N	O	P	Q
1	AGE		FG7	DD1	DD2	DD3
2	24		4			2
3	9		4		2	
4	10		2		1	
5	4					
6	21		7			2
			5	0		2
190	15					
191	0					
192	1					
193	5					
194						
195						

Data shown are for illustration purposes only

Dietary diversity score

The age-specific dietary diversity scores can now be combined :

new column

	A		N	O	P	Q	R
1	AGE		FG7	DD1	DD2	DD3	DDS
2	24		4			2	=IF(A2>5,SUM(O2:Q2),"")
3	9		4		2		=IF(A3>5,SUM(O3:Q3),"")
4	10		2		1		=IF(A4>5,SUM(O4:Q4),"")
5	4						=IF(A5>5,SUM(O5:Q5),"")
6	21		7			2	=IF(A6>5,SUM(O6:Q6),"")
							=IF(A7>5,SUM(O7:Q7),"")
190	15		5			2	
191	0						=IF(A191>5,SUM(O191:Q191),"")
192	1						=IF(A192>5,SUM(O192:Q192),"")
193	5						=IF(A193>5,SUM(O193:Q193),"")
194							
195							=COUNTIF(R2:R193,2)/COUNT(R2:R193)

Dietary diversity diagnostic
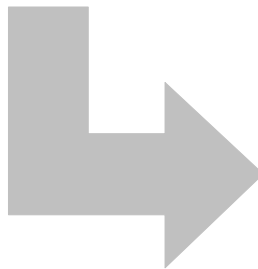
	A		N	O	P	Q	R
1	AGE		FG7	DD1	DD2	DD3	DDS
2	24		4			2	2
3	9		4		2		2
4	10		2		1		1
5	4						
6	21		7			2	2
					0	2	2
190	15		5				
191	0						
192	1						
193	5						
194							
195							60.6%

Data shown are for illustration purposes only

Note that the dietary diversity diagnostic indicator is also calculated at this step.

Meal frequency 6 - 9 months

Meal frequency is scored differently in different age-groups.

Here is the procedure for scoring meal frequency for children aged between 6 and 9 months :

new column

	A	D	S
1	AGE	F3	MF1
2	24	3	=IF(AND(A2>5,A2<9),(D2=1)+(D2>1)*2,"")
3	9	2	=IF(AND(A3>5,A3<9),(D3=1)+(D3>1)*2,"")
4	10	3	=IF(AND(A4>5,A4<9),(D4=1)+(D4>1)*2,"")
5	4		=IF(AND(A5>5,A5<9),(D5=1)+(D5>1)*2,"")
6	21	3	=IF(AND(A6>5,A6<9),(D6=1)+(D6>1)*2,"")
			=IF(AND(A7>5,A7<9),(D7=1)+(D7>1)*2,"")
190	15	2	=IF(AND(A190>5,...
191	0		=IF(AND(A191>5,A191<9),(D191=1)+(D191>1)*2,"")
192	1	1	=IF(AND(A192>5,A192<9),(D192=1)+(D192>1)*2,"")
193	5		=IF(AND(A193>5,A193<9),(D193=1)+(D193>1)*2,"")
194			
195			
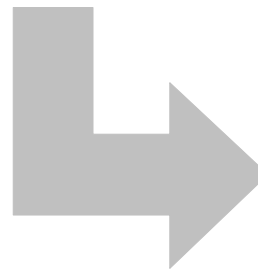
	A	D	S
1	AGE	F3	MF1
2	24	3	
3	9	2	
4	10	3	
5	4		
6	21	3	
			0
190	15		
191	0		
192	1	1	
193	5		
194			
195			

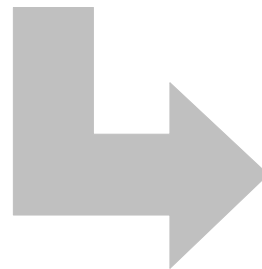Data shown are for illustration purposes only

Meal frequency 9 - 12 months

Meal frequency is scored differently in different age-groups.

Here is the procedure for scoring meal frequency for children aged between 9 and 12 months :

new column

	A	D	S	T
1	AGE	F3	MF1	MF2
2	24	3		=IF(AND(A2>8,A2<12),OR(D2=1,D2=2)+(D2>2)*2,"")
3	9	2		=IF(AND(A3>8,A3<12),OR(D3=1,D3=2)+(D3>2)*2,"")
4	10	3		=IF(AND(A4>8,A4<12),OR(D4=1,D4=2)+(D4>2)*2,"")
5	4			=IF(AND(A5>8,A5<12),OR(D5=1,D5=2)+(D5>2)*2,"")
6	21	3		=IF(AND(A6>8,A6<12),OR(D6=1,D6=2)+(D6>2)*2,"")
				=IF(AND(A7>8,72<12),OR(D7=1,D7=2)+(D7>2)*2,"")
190	15	2		=IF(AND(A190>8,A190...
191	0			=IF(AND(A191>8,A191<12),OR(D191=1,D191=2)+(D191>2)*2,"")
192	1	1		=IF(AND(A192>8,A192<12),OR(D192=1,D192=2)+(D192>2)*2,"")
193	5			=IF(AND(A193>8,A193<12),OR(D193=1,D193=2)+(D193>2)*2,"")
194				
195				

	A	D	S	T
1	AGE	F3	MF1	MF2
2	24	3		
3	9	2		1
4	10	3		2
5	4			
6	21	3		
				0
190	15			
191	0			
192	1	1		
193	5			
194				
195				

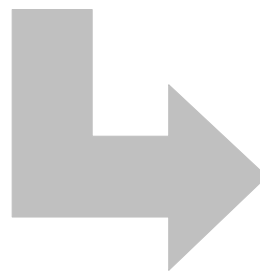Data shown are for illustration purposes only

Meal frequency 12 - 24 months

Meal frequency is scored differently in different age-groups.

Here is the procedure for scoring meal frequency for children aged 12 months and older :

new column

	A	D	S	T	U
1	AGE	F3	MF1	MF2	MF3
2	24	3			=IF(A2>11,(D2=2)+(D2=3)*2+(D2>3)*3,"")
3	9	2		1	=IF(A3>11,(D3=2)+(D3=3)*2+(D3>3)*3,"")
4	10	3		2	=IF(A4>11,(D4=2)+(D4=3)*2+(D4>3)*3,"")
5	4				=IF(A5>11,(D5=2)+(D5=3)*2+(D5>3)*3,"")
6	21	3			=IF(A6>11,(D6=2)+(D6=3)*2+(D6>3)*3,"")
					=IF(A7>11,(D7=2)+(D7=3)*2+(D7>3)*3,"")
190	15	2			=IF(A190>11,...
191	0				=IF(A191>11,(D191=2)+(D191=3)*2+(D191>3)*3,"")
192	1	1			=IF(A192>11,(D192=2)+(D192=3)*2+(D192>3)*3,"")
193	5				=IF(A193>11,(D193=2)+(D193=3)*2+(D193>3)*3,"")
194					
195					

	A	D	S	T	U
1	AGE	F3	MF1	MF2	MF3
2	24	3			2
3	9	2		1	
4	10	3		2	
5	4				
6	21	3			1
					0
190	15	2			
191	0				
192	1	1			
193	5				
194					
195					

Data shown are for illustration purposes only

Meal frequency score

The age-specific meal frequency scores can now be combined :

new column

	A	D	S	T	U	V
1	AGE	F3	MF1	MF2	MF3	MFS
2	24	3			2	=IF(A2>5,SUM(S2:U2),"")
3	9	2		1		=IF(A3>5,SUM(S3:U3),"")
4	10	3		2		=IF(A4>5,SUM(S4:U4),"")
5	4					=IF(A5>5,SUM(S5:U5),"")
6	21	3			2	=IF(A6>5,SUM(S6:U6),"")
						=IF(A7>5,SUM(S7:U7),"")
190	15	2			1	
191	0					=IF(A191>5,SUM(S191:U191),"")
192	1	1				=IF(A192>5,SUM(S192:U192),"")
193	5					=IF(A193>5,SUM(S193:U193),"")
194						
195						=COUNTIF(V2:V193,">1")/COUNT(V2:V193)

Meal frequency diagnostic
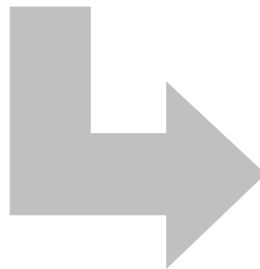
	A	D	S	T	U	V
1	AGE	F3	MF1	MF2	MF3	MFS
2	24	3			2	2
3	9	2		1		1
4	10	3		2		2
5	4					
6	21	3			1	2
	0					1
190	15	2				
191	0					
192	1	1				
193	5					
194						
195						34.3%

Data shown are for illustration purposes only

Note that the meal frequency diagnostic indicator is also calculated at this step.

ICFI score

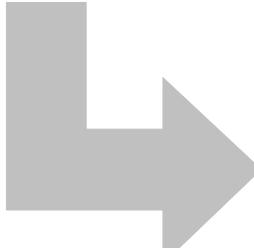The ICFI score is the sum of the breastfeeding, dietary diversity, and meal frequency scores :

$$ICFI = Breastfeeding + Dietary\ Diversity + Meal\ Frequency$$

Here is the procedure for calculating the ICFI score:

new column

	A	M	R	V	W
1	AGE	BF	DDS	MFS	ICFI
2	24	1	2	2	=IF(A2<6,"",M2+R2+V2)
3	9	2	2	1	=IF(A3<6,"",M3+R3+V3)
4	10	2	1	2	=IF(A4<6,"",M4+R4+V4)
5	4				=IF(A5<6,"",M5+R5+V5)
6	21	1	2	2	=IF(A6<6,"",M6+R6+V6)
				1	=IF(A7<6,"",M7+R7+V7)
190	15		2	1	
191	0	1			=IF(A191<6,"",M191+R191+V191)
192	1				=IF(A192<6,"",M192+R192+V192)
193	5				=IF(A193<6,"",M193+R193+V193)
194					
195		89.8%	60.6%	34.3%	=AVERAGE(W2:W193)

ICFI diagnostic

	A	M	R	V	W
1	AGE	BF	DDS	MFS	ICFI
2	24	1	2	2	5
3	9	2	2	1	5
4	10	2	1	2	5
5	4				
6	21	1	2	2	4
				1	3
190	15				
191	0				
192	1				
193	5				
194					
195		89.8%	60.6%	34.3%	3.82

Data shown are for illustration purposes only

Note that one of the ICFI diagnostic indicators is also calculated at this step.

Good practice 6 - 24 months

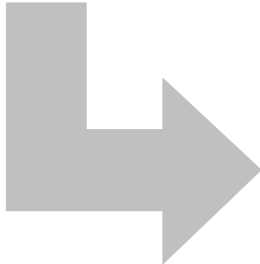We define good IYCF feeding practice as an ICFI score of six:

		Classification	
		Good	Not good
Age	< 6 months	Exclusively breastfed	Not exclusively breastfed
	6 – 24 months	ICFI = 6	ICFI < 6

Here is the procedure for doing this :

new column

	W	X
1	ICFI	ICFI6
2	5	=IF(A2<6,"",IF(W2=6,1,2))
3	5	=IF(A3<6,"",IF(W3=6,1,2))
4	5	=IF(A4<6,"",IF(W4=6,1,2))
5		=IF(A5<6,"",IF(W5=6,1,2))
6	4	=IF(A6<6,"",IF(W6=6,1,2))
		=IF(A7<6,"",IF(W7=6,1,2))
190		=IF(A...
191		=IF(A191<6,"",IF(W191=6,1,2))
192		=IF(A192<6,"",IF(W192=6,1,2))
193		=IF(A193<6,"",IF(W193=6,1,2))
194		
195	3.82	=COUNTIF(X2:X193,1)/COUNT(X2:X193)

ICFI diagnostic

	W	X
1	ICFI	ICFI6
2	5	2
3	5	2
4	5	2
5		
6	4	2
	3	2
190		
191		
192		
193		
194		
195	3.82	18.2%

Data shown are for illustration purposes only

Note that the second ICFI diagnostic indicator is calculated at this step.

The IYCF indicator

This is a combination of exclusive breastfeeding in children under six months and an ICFI score of six in older children :
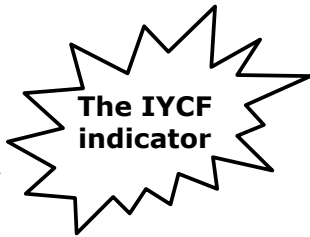
		Classification	
		Good	Not good
Age	< 6 months	Exclusively breastfed	Not exclusively breastfed
	6 – 24 months	ICFI = 6	ICFI < 6
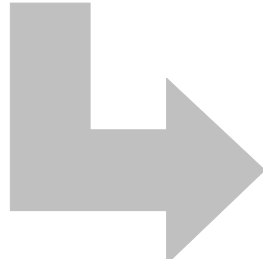
Here is the procedure for doing this :

new column

	A	L	X	Y
1	AGE	EBF	ICFI6	IYCF
2	24		2	=IF(A2<6,L2,X2)
3	9		2	=IF(A3<6,L3,X3)
4	10		2	=IF(A4<6,L4,X4)
5	4	1		=IF(A5<6,L5,X5)
6	21		2	=IF(A6<6,L6,X6)
				=IF(A7<6,L7,X7)
190	15			
191	0	1		=IF(A191<6,L191,X191)
192	1	2		=IF(A192<6,L192,X192)
193	5	1		=IF(A193<6,L193,X193)
194				
195		85.5%	18.2%	=COUNTIF(Y2:Y193,1)/COUNT(Y2:Y193)

The IYCF indicator

	A	L	X	Y
1	AGE	EBF	ICFI6	IYCF
2	24		2	2
3	9		2	2
4	10		2	2
5	4	1		1
6	21		2	2
			2	2
190	15			
191	0	1		1
192	1	2		2
193	5	1		1
194				
195		85.5%	18.2%	37.5%

Data shown are for illustration purposes only

Reporting the IYCF indicator

The IYCF indicator should be presented as a hierarchy of main indicator and diagnostic indicators :

% EBF
85.5%

< 6 months

% GOOD
37.5%

6 – 24 months

% ICFI = 6
18.2%

Mean ICFI score
3.82

Continuing breastfeeding

% Currently breastfed
89.8%

Dietary diversity

% Component Score = 2
60.6%

Meal frequency

% Component Score ≥ 2
34.3%
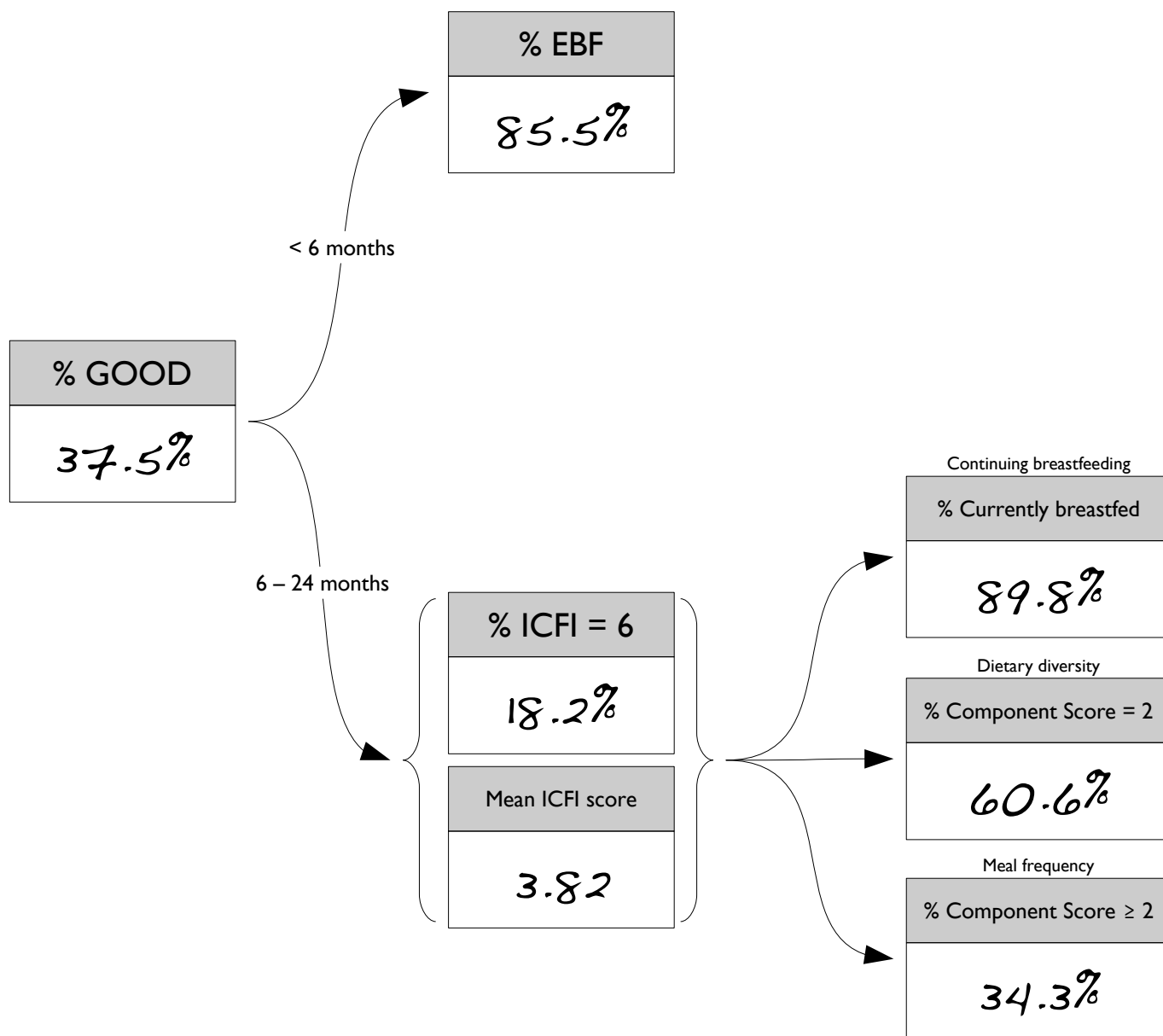
Data shown are for illustration purposes only

Appendix 2

WASH indicators calculated from survey data

The WASH dataset

The WASH dataset is collected using a short (i.e. three page) questionnaire. Here is the first page of the questionnaire :

W A S H   I n d i c a t o r s   Q u e s t i o n n a i r e

W1 : What is the main source of <u>drinking</u> <u>water</u> for members of your household?

    Tick one box only ...

        Piped water into dwelling |__| 1
        Piped water into yard / plot |__| 2
        Public tap / standpipe |__| 3
        Tube-well / borehole |__| 4
        Protected dug well |__| 5
        Unprotected dug well |__| 6
        Protected spring |__| 7
        Unprotected spring |__| 8
        Rainwater collection |__| 9
        Bottled water |__| 10
        Cart with small tank / drum |__| 11
        Tanker-truck |__| 12
        Surface water (river, dam,
          lake, pond, stream, canal,
          irrigation channels) |__| 13
        Other |__| 14

W2 : What is the main source of water used by your household for other purposes such as cooking and hand washing?

    Tick one box only ...

        Piped water into dwelling |__| 1
        Piped water into yard / plot |__| 2
        Public tap / standpipe |__| 3
        Tube-well / borehole |__| 4
        Protected dug well |__| 5
        Unprotected dug well |__| 6
        Protected spring |__| 7
        Unprotected spring |__| 8
        Rainwater collection |__| 9
        Bottled water |__| 10
        Cart with small tank / drum |__| 11
        Tanker-truck |__| 12
        Surface water (river, dam,
          lake, pond, stream, canal,
          irrigation channels) |__| 13
        Other |__| 14

The WASH dataset

The WASH dataset is collected using a short (i.e. three page) questionnaire. Here is the second page of the questionnaire :

```
W3 : Do you do anything to make water safer to drink?

                    |__| 1 Yes              |__| 2 No → go to W5

      if NO, go to W5


W4 :  What do you usually do to the water to make it safer to
      drink?

      Do not prompt

      Probe 'Anything else?'

      Record all items mentioned ...

            (a) Boil                          |__|
            (b) Add bleach / chlorine tablet  |__|
            (c) Strain it through a cloth     |__|
            (d) Use a water filter...
                  ... gravel / ceramic / sand |__|
            (e) Solar disinfection            |__|
            (f) Let it stand and settle       |__|
            (g) Other                         |__|
            (h) Don't know                    |__|


W5 : What kind of toilet facility do members of your household
     usually use?

          Flush or pour flush ...

              ... where does it flush to?

                  Piped sewer system    |__| 1
                  Septic tank           |__| 2
                  Pit latrine           |__| 3
                  Elsewhere             |__| 4
                  Don't know            |__| 5

            VIP latrine                 |__| 6
            Pit latrine with slab       |__| 7
            Pit latrine without slab    |__| 8
            Composting toilet           |__| 9
            Bucket                      |__| 10
            Hanging latrine             |__| 11
            No facilities or bush or field |__| 12 → go to W7
```

The WASH dataset

The WASH dataset is collected using a short (i.e. three page) questionnaire. Here is the third page of the questionnaire :

```
W6 :  Do you share this facility with other households?

                     __                          __
                    |__| 1 Yes                  |__| 2 No


W7 : The last time [NAME OF CHILD] passed stools, what was done
     to dispose of the stools?

     Do not prompt
                                                      __
          Child used toilet / latrine           |__| 1
          Put into toilet or latrine            |__| 2
          Put into drain or ditch               |__| 3
          Thrown into garbage                   |__| 4
          Buried                                |__| 5
          Left in open                          |__| 6
          Other                                 |__| 7
          Don't know                            |__| 8


W8 : Please tell me all of the occasions when is it important for
     you to wash your hands ...

     Probe 'Any other occasion?'

     Do not prompt

     Record all occasions mentioned ...
                                                   __
          (a) Before eating                  |__|
          (b) Before feeding a child         |__|
          (c) Before cooking  / preparing food |__|
          (d) After defecation / urination     |__|
          (e) After cleaning a child ...        __
                  ... that has defecated      |__|
```

Entry and analysis of WASH data

Here is an example of some WASH indicator data that has been entered into a spreadsheet package :

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	W1	W2	W3	W4A	W4B	W4C	W4D	W4E	W4F	W4G	W4H	W5	W6	W7	W8A	W8B	W8C	W8D	W4E
2	13	13	2	2	2	2	2	2	2	2	2	8	1	2	1	2	2	2	2
3	6	6	1	1	2	2	2	2	2	2	2	8	1	2	1	2	2	1	2
4	13	13	2	2	2	2	2	2	2	2	2	4	1	4	2	2	2	1	1
5	6	6	1	1	2	2	2	2	2	2	2	9	1	2	2	2	2	1	1
6	13	13	2	2	2	2	2	2	2	2	2	9	2	2	1	2	2	1	2
									2	2	2	8	2	4	1	2	2	2	1
190	5	5	2	2	2	2	2	2	2										
191	5	5	2	2	2	2	2	2	2	2	2	8	1	7	1	2	1	1	2
192	7	7	2	2	2	2	2	2	2	2	2	8	2	2	1	2	1	1	2
193	5	5	2	2	2	2	2	2	2	2	2	8	1	3	1	2	1	2	2
194																			
195																			

Data shown are for illustration purposes only

The WASH indicators

The WASH indicators are :

WASH1	Access to an improved source of drinking water
WASH2	Access to an improved source of water for household purposes
WASH3	Access to an improved water source
WASH4	Adequate water treatment
WASH5	Probable safe drinking water
WASH6	Access to an improved sanitation facility
WASH7	Sanitary disposal of children's faeces
WASH8	Knowledge of five critical moments for hand washing

WASH1 : Improved source of drinking water

Indicator WASH1 is calculated using data from question W1.

If the reported source for drinking water (W1) is one of :

   (1) Piped water into dwelling

   (2) Piped water to yard / plot

   (3) Public tap or standpipe

   (4) Tubewell / borehole

   (5) Protected dug well

   (7) Protected spring

   (9) Rainwater collection

   (10) Bottled water

then the household uses an improved source of drinking water.

The indicator is calculated as :

$$WASH1 = \frac{W1\,in\,\{\,1,\,2,\,3,\,4,\,5,\,7,\,9,\,10\,\}}{total\ number\ of\ records} \times 100$$

WASH1 : Improved source of drinking water

Here is the procedure for calculating indicator WASH1 using a spreadsheet package :

new column inserted

	A	B
1	W1	WASH1
2	13	=OR(A2<6,A2=7,A2=9,A2=10)
3	6	=OR(A3<6,A3=7,A3=9,A3=10)
4	13	=OR(A4<6,A4=7,A4=9,A4=10)
5	6	=OR(A5<6,A5=7,A5=9,A5=10)
6	13	=OR(A6<6,A6=7,A6=9,A6=10)
		=OR(A7<6,A7=7,A7=9,A7=10)
190	5	
191	5	=OR(A191<6,A191=7,A191=9,A191=10)
192	7	=OR(A192<6,A192=7,A192=9,A192=10)
193	5	=OR(A193<6,A193=7,A193=9,A193=10)
194		
195		=COUNTIF(B2:B193,TRUE)/(COUNTIF(B2:B193,TRUE)+COUNTIF(B2:B193,FALSE))
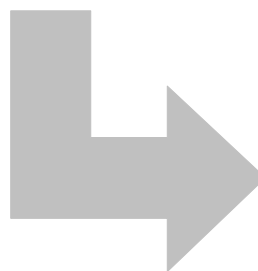
	A	B
1	W1	WASH1
2	13	FAlSE
3	6	FALSE
4	13	FALSE
5	6	FALSE
6	13	FALSE
		FALSE
190	5	
191	5	TRUE
192	7	TRUE
193	5	TRUE
194		
195		46.4%

Data shown are for illustration purposes only

WASH2 : Improved source of household water

Indicator WASH2 is calculated using data from question W2.

If the reported water source of general household water (W2) is one of :

(1) Piped water into dwelling

(2) Piped water to yard / plot

(3) Public tap or standpipe

(4) Tubewell / borehole

(5) Protected dug well

(7) Protected spring

(9) Rainwater collection

then the household uses an improved source of water for general household use.

The indicator is calculated as :

$$WASH2 = \frac{W2\,in\{\ 1,\ 2,\ 3,\ 4,\ 5,\ 7,\ 9\ \}}{total\ number\ of\ records} \times 100$$

WASH2 : Improved source of household water

Here is the procedure for calculating indicator WASH2 using a spreadsheet package :

new column inserted

	A	B	C	D
1	W1	WASH1	W2	WASH2
2	13	FAlSE	13	=OR(C2<6,C2=7,C2=9)
3	6	FALSE	6	=OR(C3<6,C3=7,C3=9)
4	13	FALSE	13	=OR(C4<6,C4=7,C4=9)
5	6	FALSE	6	=OR(C5<6,C5=7,C5=9)
6	13	FALSE	13	=OR(C6<6,C6=7,C6=9)
				=OR(C7<6,C7=7,C7=9)
190	5	TRUE	5	
191	5	TRUE	5	=OR(C191<6,C191=7,C191=9)
192	7	TRUE	7	=OR(C192<6,C192=7,C192=9)
193	5	TRUE	5	=OR(C193<6,C193=7,C193=9)
194				
195		46.4%		=COUNTIF(D2:D193,TRUE)/(COUNTIF(D2:D193,TRUE)+COUNTIF(D2:D193,FALSE))
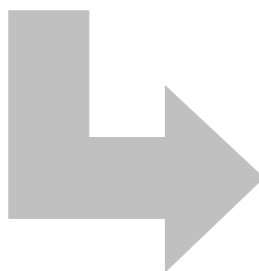
	A	B	C	D
1	W1	WASH1	W2	WASH2
2	13	FAlSE	13	FAlSE
3	6	FALSE	6	FALSE
4	13	FALSE	13	FALSE
5	6	FALSE	6	FALSE
6	13	FALSE	13	FALSE
		FAlSE	13	FALSE
190	5	TRUE		
191	5	TRUE	5	TRUE
192	7	TRUE	7	TRUE
193	5	TRUE	5	TRUE
194				
195		46.4%		46.4%

Data shown are for illustration purposes only

WASH3 : Access to an improved water source

Indicator WASH3 combines indicators WASH1 and WASH2 :

WASH3 is TRUE if either WASH1 is TRUE or WASH2 is TRUE

The indicator is calculated as :

$$WASH3 = \frac{\begin{array}{c}\textit{number of records with}\\ \textit{WASH1=TRUE or WASH2=TRUE}\end{array}}{\textit{total number of records}} \times 100$$

Here is the procedure for calculating indicator WASH3 using a spreadsheet package :

new column inserted

	A	B	C	D	E
1	W1	WASH1	W2	WASH2	WASH3
2	13	FAlSE	13	FAlSE	=OR(B2,D2)
3	6	FALSE	6	FALSE	=OR(B3,D3)
4	13	FALSE	13	FALSE	=OR(B4,D4)
5	6	FALSE	6	FALSE	=OR(B5,D5)
6	13	FALSE	13	FALSE	=OR(B6,D6)
					=OR(B7,D7)
190	5	TRUE	5	TRUE	
191	5	TRUE	5	TRUE	=OR(B191,D191)
192	7	TRUE	7	TRUE	=OR(B192,D192)
193	5	TRUE	5	TRUE	=OR(B193,D193)
194					
195		46.4%		46.4%	=COUNTIF(E2:E193,TRUE)/(COUNTIF(E2:E193,TRUE)+COUNTIF(E2:E193,FALSE))
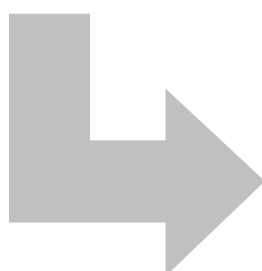
	A	B	C	D	E
1	W1	WASH1	W2	WASH2	WASH3
2	13	FAlSE	13	FAlSE	FALSE
3	6	FALSE	6	FALSE	FALSE
4	13	FALSE	13	FALSE	FALSE
5	6	FALSE	6	FALSE	FALSE
6	13	FALSE	13	FALSE	FALSE
	13			FALSE	FALSE
190	5	TRUE			
191	5	TRUE	5	TRUE	TRUE
192	7	TRUE	7	TRUE	TRUE
193	5	TRUE	5	TRUE	TRUE
194					
195		46.4%		46.4%	46.4%

Data shown are for illustration purposes only

WASH4 : Adequate water treatment

Indicator WASH4 is calculated using data from question W4.

WASH4 is TRUE if one or more of the following water treatments is reported as being used to make water safer to drink :

  (a) Boil

  (b) Add bleach / chlorine tablet

  (d) Use of a water filter

  (e) Solar disinfection

The indicator is calculated as :

$$WASH4 = \frac{\begin{array}{c} \textit{number of records with} \\ \textit{W4A=YES or W4B=YES or W4D=YES or W4E=YES} \end{array}}{\textit{total number of records}} \times 100$$

WASH4 : Adequate water treatment

Here is the procedure for calculating indicator WASH4 using a spreadsheet package :

new column inserted

	G	H	I	J	K	L	M	N	O
1	W4A	W4B	W4C	W4D	W4E	W4F	W4G	W4H	WASH4
2	2	2	2	2	2	2	2	2	=OR(G2=1,H2=1,J2=1,K2=1)
3	1	2	2	2	2	2	2	2	=OR(G3=1,H3=1,J3=1,K3=1)
4	2	2	2	2	2	2	2	2	=OR(G4=1,H4=1,J4=1,K4=1)
5	1	2	2	2	2	2	2	2	=OR(G5=1,H5=1,J5=1,K5=1)
6	2	2	2	2	2	2	2	2	=OR(G6=1,H6=1,J6=1,K6=1)
									=OR(G7=1,H7=1,J7=1,K7=1)
190	2	2	2	2	2	2	2	2	
191	2	2	2	2	2	2	2	2	=OR(G191=1,H191=1,J912=1,K191=1)
192	2	2	2	2	2	2	2	2	=OR(G192=1,H192=1,J192=1,K192=1)
193	2	2	2	2	2	2	2	2	=OR(G193=1,H193=1,J193=1,K193=1)
194									
195									=COUNTIF(O2:O193,TRUE)/(COUNTIF(O2:O193,TRUE)+COUNTIF(O2:O193,FALSE))
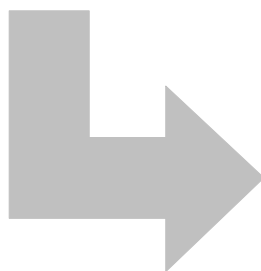
	G	H	I	J	K	L	M	N	O
1	W4A	W4B	W4C	W4D	W4E	W4F	W4G	W4H	WASH4
2	2	2	2	2	2	2	2	2	FALSE
3	1	2	2	2	2	2	2	2	TRUE
4	2	2	2	2	2	2	2	2	FALSE
5	1	2	2	2	2	2	2	2	TRUE
6	2	2	2	2	2	2	2	2	FALSE
					2	2	2	2	FALSE
190	2	2	2	2					
191	2	2	2	2	2	2	2	2	FALSE
192	2	2	2	2	2	2	2	2	FALSE
193	2	2	2	2	2	2	2	2	FALSE
194									
195									14.1%

Data shown are for illustration purposes only

WASH5 : Probable safe drinking water

Indicator WASH5 combines indicators WASH1 and WASH4 :

WASH5 is TRUE if either WASH1 is TRUE or WASH4 is TRUE

The indicator is calculated as :

$$WASH5 = \frac{\substack{\textit{number of records with} \\ \textit{WASH1=TRUE or WASH4=TRUE}}}{\textit{total number of records}} \times 100$$

Here is the procedure for calculating indicator WASH5 using a spreadsheet package :

new column inserted

	A	B		O	P
1	W1	WASH1		WASH4	WASH5
2	13	FAlSE		FALSE	=OR(B2,O2)
3	6	FALSE		TRUE	=OR(B3,O3)
4	13	FALSE		FALSE	=OR(B4,O4)
5	6	FALSE		TRUE	=OR(B5,O5)
6	13	FALSE		FALSE	=OR(B6,O6)
					=OR(B7,O6)
190	5	TRUE		FALSE	
191	5	TRUE		FALSE	=OR(B191,O191)
192	7	TRUE		FALSE	=OR(B192,O192)
193	5	TRUE		FALSE	=OR(B193,O193)
194					
195		46.4%		14.1%	=COUNTIF(P2:P193,TRUE)/(COUNTIF(P2:P193,TRUE)+COUNTIF(P2:P193,FALSE))
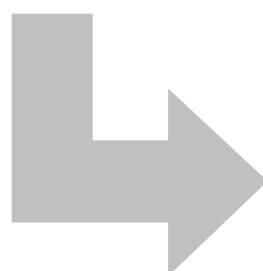
	A	B		O	P
1	W1	WASH1		WASH4	WASH5
2	13	FAlSE		FALSE	FALSE
3	6	FALSE		TRUE	TRUE
4	13	FALSE		FALSE	FALSE
5	6	FALSE		TRUE	TRUE
6	13	FALSE		FALSE	FALSE
				FALSE	FALSE
190	5	TRUE			
191	5	TRUE		FALSE	TRUE
192	7	TRUE		FALSE	TRUE
193	5	TRUE		FALSE	TRUE
194					
195		46.4%		14.1%	54.2%

Data shown are for illustration purposes only

WASH6 : Access to an improved sanitation facility

Indicator WASH6 is calculated using data from question W5 and question W6.

WASH6 is TRUE if :

The type of latrine used (W5) is one of the following :

(1) Flush / pour to piped sewer system

(2) Flush / pour to septic tank

(3) Flush / pour to pit latrine

(5) Flush / pour to don't know (SPECIAL CASE)

(6) VIP latrine

(7) Pit latrine with slab

(9) Composting toilet

AND :

The latrine is <u>not</u> shared (W6)

The indicator is calculated as :

$$WASH6 = \frac{W5\,in\{\,1,\,2,\,3,\,5,\,6,\,7,\,9\,\}\,and\,W6 = NO}{total\ number\ of\ records} \times 100$$

WASH6 : Access to an improved sanitation facility

Here is the procedure for calculating indicator WASH6 using a spreadsheet package :

new column inserted

	Q	R	S
1	W5	W6	WASH6
2	8	1	=AND(NOT(R2=1),OR(Q2<4,Q2=5,Q2=6,Q2=7,Q2=9))
3	8	1	=AND(NOT(R3=1),OR(Q3<4,Q3=5,Q3=6,Q3=7,Q3=9))
4	4	1	=AND(NOT(R4=1),OR(Q4<4,Q4=5,Q4=6,Q4=7,Q4=9))
5	9	1	=AND(NOT(R5=1),OR(Q5<4,Q5=5,Q5=6,Q5=7,Q5=9))
6	9	2	=AND(NOT(R6=1),OR(Q6<4,Q6=5,Q6=6,Q6=7,Q6=9))
			=AND(NOT(R7=1),OR(Q7<4,Q7=5,Q7=6,Q2=7,Q7=9))
190	8	2	=AND(NOT(R190=1),.....
191	8	1	=AND(NOT(R191=1),OR(Q191<4,Q191=5,Q191=6,Q191=7,Q191=9))
192	8	2	=AND(NOT(R192=1),OR(Q192<4,Q192=5,Q192=6,Q192=7,Q192=9))
193	8	1	=AND(NOT(R193=1),OR(Q193<4,Q193=5,Q193=6,Q193=7,Q193=9))
194			
195			=COUNTIF(S2:S193,TRUE)/(COUNTIF(S2:S193,TRUE)+COUNTIF(S2:S193,FALSE))
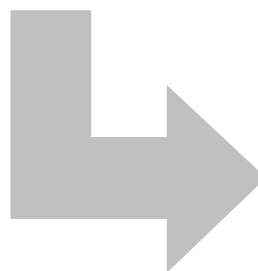
	Q	R	S
1	W5	W6	WASH6
2	8	1	FALSE
3	8	1	FALSE
4	4	1	FALSE
5	9	1	FALSE
6	9	2	TRUE
		2	FALSE
190	8		
191	8	1	FALSE
192	8	2	FALSE
193	8	1	FASLE
194			
195			17.7%

Data shown are for illustration purposes only

WASH7 : Sanitary disposal of children's faeces

Indicator WASH7 is calculated using data from question W7. WASH7 is TRUE if any of the following methods of faeces disposal is reported :

(1) Child used toilet / latrine

(2) Put into toilet or latrine

(5) Buried

The indicator is calculated as :

$$WASH7 = \frac{W7\,in\,\{\,1,\,2,\,5\,\}}{total\ number\ of\ records} \times 100$$

Here is the procedure for calculating indicator WASH7 using a spreadsheet package :

new column inserted

	T	U
1	W7	WASH7
2	2	=OR(T2=1,T2=2,T2=5)
3	2	=OR(T3=1,T3=2,T3=5)
4	4	=OR(T4=1,T4=2,T4=5)
5	2	=OR(T5=1,T5=2,T5=5)
6	2	=OR(T6=1,T6=2,T6=5)
		=OR(T7=1,T7=2,T7=5)
190	2	
191	7	=OR(T191=1,T191=2,T191=5)
192	2	=OR(T192=1,T192=2,T192=5)
193	3	=OR(T193=1,T193=2,T193=5)
194		
195		=COUNTIF(U2:U193,TRUE)/(COUNTIF(U2:U193,TRUE)+COUNTIF(U2:U193,FALSE))
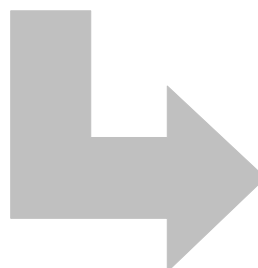
	T	U
1	W7	WASH7
2	2	TRUE
3	2	TRUE
4	4	FALSE
5	2	TRUE
6	2	TRUE
	4	FALSE
190	2	
191	7	FALSE
192	2	TRUE
193	3	FALSE
194		
195		71.9%

Data shown are for illustration purposes only

WASH8 : Knowledge of hand washing

Indicator WASH8 is calculated using data from question W8.

It is a score (1, 2, 3, 4, 5) of the number of items reported from the list:

(a) Before eating

(b) Before feeding a child

(c) Before cooking / preparing food

(d) After defecation / urination

(e) After cleaning a child that has defecated or …
   … changing a child's nappy

The indicator is calculated as :

$$WASH8 = median\,of \left(\begin{array}{c} Count\ of\ YES\ responses\ to \\ W8A,\ W8B,\ W8C,\ W8D,\ and\ W8E \end{array} \right)$$

WASH8 : Knowledge of hand washing

Here is the procedure for calculating indicator WASH8 using a spreadsheet package :

new column inserted

	V	W	X	Y	Z	AA
	W8A	W8B	W8C	W8D	W8E	WASH8
1	W8A	W8B	W8C	W8D	W8E	WASH8
2	1	2	2	2	2	=COUNTIF(V2:Z2,1)
3	1	2	2	1	2	=COUNTIF(V3:Z3,1)
4	2	2	2	1	1	=COUNTIF(V4:Z4,1)
5	2	2	2	1	1	=COUNTIF(V5:Z5,1)
6	1	2	2	1	2	=COUNTIF(V6:Z6,1)
					1	=COUNTIF(V7:Z7,1)
190	1	2	1	2	2	
191	1	2	1	1	2	=COUNTIF(V191:Z191,1)
192	1	2	1	1	2	=COUNTIF(V192:Z192,1)
193	1	2	1	2	2	=COUNTIF(V193:Z193,1)
194						
195						=MEDIAN(AA2:AA193)
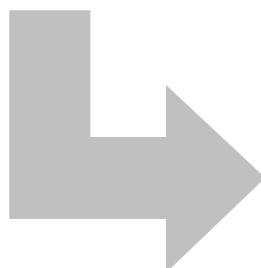
	V	W	X	Y	Z	AA
1	W8A	W8B	W8C	W8D	W8E	WASH8
2	1	2	2	2	2	1
3	1	2	2	1	2	2
4	2	2	2	1	1	2
5	2	2	2	1	1	2
6	1	2	2	1	2	2
				2	1	2
190	1	2	1			
191	1	2	1	1	2	3
192	1	2	1	1	2	3
193	1	2	1	2	2	2
194						
195						3

Data shown are for illustration purposes only

Credits

This handbook is the work of many people :

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