Use Logic Checks

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What is a logic check?

Logic checks allow you to flag indicator results that fail common-sense comparisons to numbers, other indicators, or other disaggregations. You can design your own logic checks in DevResults based on your indicators and view any data that violates these rules. Examples of logic checks include:

- Number of trainees should be under 1,000.
- Number of administrators should be greater than or equal to the number of administrators who were trained.
- Doctors + nurses should be less than or equal to the total number of medical professionals.
- Metric tons of corn produced should be less than 40% of total metric tons of crops produced.

When logic checks are calculated, any data that does **not** meet the statement you define in the logic check will throw a warning violation.

Create a logic check

Go to Tools > Logic Checks.



Click on the + New Logic Check button in the lower right corner.

Sample Organization DevResults		Quic	k search.	(Q 🕜 Help
Data Program Info Tools Adr	ninistratio	on Bookmarks			
Home 🕨 Tools 🔺 Logic Checks					
4 of 4 logic checks shown	•	Search logic checks			٩ 🗘 -
 Reporting periods with warnings 2017 Q2 		Name	∱ Wa	rnings	Formula
2017 02		Certifications earned should be 10 or less		22	[4.1.1-e] <= 10
□ 2017 Q4		Flag gender disparities in agricultural training		3	[1-c Male] < [1-c Female]*3
2018 Q1		More than 1000 nets should be purchased per location		8	[3.1.1-d] > 1000
🗌 2019 Q1		Regions with under 5000 individuals receiving agricultural support		13	[1-c] >= 5000
 2019 Q2 2019 Q3 2019 Q4 		4 logic checks		•	
DevResults					+ New Logic Check

This will open a **Create New Logic Check** pop-up. Give your logic check a name and click the **+ Create Logic Check** button.

Create New Lo	ogic Check	×
Name	Children who slept under a net must be less than all children surveyed]
O Cancel	Create Logic	Check

In the left and right boxes in the **Definition** section, add the indicators, values, or expressions you'd like to compare. To reference an indicator, put its code in square brackets like [this], e.g. [3.1-N]. When you click outside the editing box, the system will confirm that it recognizes your indicator code or it will give you an error that it does not recognize your indicator code.

Between the two boxes, select the desired operator for your comparison. The options are:

- = (equal to)
- \geq (greater than or equal to)
- >(greater than)
- \leq (less than or equal to)
- < (less than)</p>
- \neq (not equal to)

You have the option to add a note about this logic check in the **Notes** box. Use this as an explanation for other users so that if they have data that violates the logic check, they have an understanding of what needs to be fixed.

Here's a sample:

Example Organization DevResults			Quick search	٩	🕑 Help	
Data Program Info Tools Administration Bookmarks						
Home 🔺 Tools 🔺 Logic Checks 🎽 Children who slept under a net must be less	than all children su	irveyed				
Children who slept under a net	: must b	e less than a	ll children	sur	veyed	🗿 History
Notes						
The number of children under 5 years old who were reported as having slep equal to the total number of children under 5 years old in households surve			less than or			
Definition						
Indicator results that do not meet this criteria will be flagged for review.						
[3.1-N]	<u>≤</u>	[3.1-D]				
 Component indicators: 3.1-N # children under 5 years old who slept under an insecticide-treated net (ITN) the previous night 		Component indicator 3.1-D # children under 5 insecticide-treated nets (years old in households surve	eyed about		
	_			_		
DevResults					1 Delete this	logic check

Referencing Disaggregations: If you want the logic check calculation to compare categories for an indicator's disaggregation, use a vertical bar (i.e. pipe operator:) after the code within the bracket. For example, male children would be written as **[3.1-N]Male]**. You can also reference multiple disaggregations if your indicator is cross-disaggregated, such as **[3.1-N]Male]Rural]**.

Algebraic Expressions: In the definition boxes, you can add algebraic expressions. For example, you might create the logic check $[3.1-D] > [3.1-N]^{*4}$. This logic check means that you expect the total number of children surveyed to be more than four times the number of children reported as sleeping under nets.

Multiple Indicators: You can also use multiple indicators in a definition box. So we might have [3.1-D] = [3.1-N] + [3.2], if 3.2 collects the number of children reported as having *not* slept under a net.

Imagine a scenario where you want to check for gender disparities in your survey sample. You want to flag any results where the total male children surveyed is over 100 more than the total female children surveyed. That definition would 1) use an expression with more than one indicator, 2) reference indicator disaggregations, and 3) compare to a fixed value.

Definition			
Indicator results that do not meet this criteria will be fla	igged fo	or revie	ew.
[3.1-D Male] - [3.1-D Female]	≤	~	100
 Component indicators: 3.1-D # children under 5 years old in households surveyed about insecticide-treated nets (ITN) Sex: Male 3.1-D # children under 5 years old in households surveyed about insecticide-treated nets (ITN) Sex: Female 			

View warnings

Once the logic check is created, you can run it immediately using the **Run logic check** button in the lower right. Logic checks are run automatically every 15 minutes, or you can immediately run the logic checks by clicking on the **Run Logic Check** button. The **Warnings** section will show any indicator performance data that does *not* meet the logic check's criteria, listed by activity. You can view these by reporting period using the **Reporting Period** dropdown.

Example Organization DevResults				Quick search	Q (?) Help	
Data Program Info Tools Administratio						
Home 🔸 Tools 🔺 Logic Checks 🔺 Children who slept	under a net must be less t	han all children sur	veyed			
Children who slept up	nder a net	must be	e less tha	an all children	surveyed	Ö History
Notes						
The number of children under 5 years old who were equal to the total number of children under 5 years e	reported as having slept old in households survey	underneath an inse ed about insect-trea	ect-treated net (ITN) s ated nets (ITNs).	hould be less than or		
Definition						
Indicator results that do not meet this criteria will be	lagged for review.					
[3.1-N]		<u> </u>	[3.1-D]			
Component indicators: 3.1-N # children under 5 years old who slept und net (ITN) the previous night	er an insecticide-treated			: indicators: en under 5 years old in households surv aated nets (ITN)	veyed about	
Warnings	-	-	-		-	1
Reporting Period 2021 Q3 🗸					Ru	in Logic Check
Activity 1		Place		Left	Right	
Healthy Children Campaign	Centre de Santé de Kassa	атногуа		4557	4506	
DevResults					📋 Delete th	is logic check

Reporting period pages for each activity show that activity's indicators and data for that period. Any logic check violations will be tallied in the **Warnings** column. Warnings are given for any indicators involved in the logic check on either side of the operator.

	Example Organization DevResults			Qu	ick searc	h	۹	? Help	
	Program Info Tools Administration Bookmarks								
Home 🕨	Program Info 🔸 Time 🔸 Reporting Periods 🔸 2021 Q3 🔸 Healthy Children Campaign						🖸 In Pro		~
Цор	lthy Children Campaign					STATUS		ogress	Ŷ
	,								
	Sebastian Foundation								
Indicat	1075 Data Tables Narrative Discussion Forms								
								0	ð -
=	Search indicators							~	
_	Search Indicators		Goographic			Proviour	Current		% Target
		Data Source	Geographic Disaggregatic	Warnings	omments	Previous Results	Current Results	Target	% Target Reached
ê This I	reporting period's submission window is closed. Owners and results approvers can edit this data, but other users cannot.	Data Source	Disaggregatic	Warnings 1	omments			Target	% Target Reached 0%
ê This I Code 🛧	reporting period's submission window is closed. Owners and results approvers can edit this data, but other users cannot. Indicator		Disaggregatic	Warnings 1 1	omments		Results	Target	Reached 0%
ê This n Code ↑ 3.1-D	reporting period's submission window is closed. Owners and results approvers can edit this data, but other users cannot. Indicator # children under 5 years old in households surveyed about insecticide rested ness (TN) # children under 5 years old who slept under an insecticide treated net (TN) the previous right	Direct Entry	Disaggregatic Location	Warnings 1 1	omments		Results 4,506	Target	Reached 0%
● This n Code ↑ 3.1-D 3.1-N	reporting period's submission window is closed. Owners and results approvers can edit this data, but other users cannot. Indicator # children under 5 years old in households surveyed about insecticide rested ness (TN) # children under 5 years old who slept under an insecticide treated net (TN) the previous right	Direct Entry Direct Entry	Disaggregatic Location Location	Warnings 1 1	omments		Results 4,506	Target	Reached 0% 0%
A This I Code ↑ 3.1-D 3.1-N F-3.1.1-g	reporting period's submission window is closed. Owners and results approvers can edit this data, but other users cannot. Indicater # children under 5 years old in households surveyed about insecticide treated nets (ITN) # children under 5 years old who slept under an insecticide treated net (ITN) the previous night % pregnant women who slept under an insecticide treated net (ITN) the previous night	Direct Entry Direct Entry Formula	Disaggregatic Location Location Location	Warnings 1 1	omments		Results 4,506	Target	Reached 0% 0% 0%
6 This 1 Code ↑ 3.1-D 3.1-N F-3.1-1-g F-3.3-e F-3.3-f	reporting period's submission window is closed. Owners and results approvers can edit this data, but other users cannot. Indicator # children under 5 years old in households surveyed about insectioner terated nets (ITN) # children under 5 years old who slept under an insecticide-treated net (ITN) the previous night # pregnant women who slept under an insecticide-treated net (ITN) the previous night # health facilities with established capacity to manage acute under-nutrition	Direct Entry Direct Entry Formula Direct Entry	Disaggregatic Location Location Location Location Location	Warnings 1 1	omments		Results 4,506	Target	Reached 0% 0% 0% 0%
6 This i Code ↑ 3.1-D 3.1-N F-3.1-1-g F-3.3-e F-3.3-f F-4.1.2-c	reporting period's submission window is closed. Owners and results approvers can edit this data, but other users cannot. Indicator # children under 5 years old in households surveyed about insecticide rested nets (TN) # children under 5 years old who slept under an insecticide-treated net (TN) the previous night % program women who slept under an insecticide-treated net (TN) the previous night % program women who slept under an insecticide-treated net (TN) the previous night # children under five stabilized capacity to manage acuse under-nutrition # children under five who received Vitamin A from USG-supported programs # children # childr	Direct Entry Direct Entry Formula Direct Entry Direct Entry	Disaggregatic Location Location Location Location Location	Warnings 1 1	omments		Results 4,506	Target	Reached 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%
6 This I Code ↑ 3.1-D 3.1-N F-3.1-1-g F-3.3-e F-3.3-f F-4.1.2-c F-4.1.3-a	reporting period's submission window is closed. Owners and results approvers can edit this data, but other users cannot. Indicater # children under 5 years old in households surveyed about insecticide treated nets (ITN) # children under 5 years old who slept under an insecticide treated net (ITN) the previous right % pregnant women who slept under an insecticide-treated net (ITN) the previous right % pregnant women who slept under an insecticide-treated net (ITN) the previous right # children under factlise who escleved transform S form SG-support gorgams # secondary school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # secondary school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass for school commutes # school students provided with a bus pass pass for school commutes # school	Direct Entry Direct Entry Formula Direct Entry Direct Entry Direct Entry Formula	Disaggregatic Location Location Location Location Location Prefecture	Warnings 1	omments		Results 4,506	Target	Reached

When you click on an indicator with a warning, you can see the details of the warning in a pop-up by clicking on the warning icon.

Example Organization DevResults			Quick sea	rch	Q 🛛 🖓 H	elp
Data Program Info Tools Adminis						
Home Program Info Time Reporting Period	s ► 2021 Q3	Healthy Child	ren Campaign	* CTATUR	s 🖸 in Progress	
31-N # children under 5 yea	ussion Fo rs old W	rms 7ho slept	under	an inse	cticide-	Indicator Info
treated net (ITN) the particular of the particul		-	lts approver	s can edit thi		users cannot.
	Sex					
Location	Male	Female	Total	Comment	Warnings	
Boké / Boffa / Centre de Santé de Kassambiya	2,377	2,180	4,557		[3.1-N] <= [3.1	
Boké / Boffa / Katia					[3,1-14] <= [3,1	
DevResults						✓ Done

When do logic checks run?

Logic checks are re-run automatically system-wide every 15 minutes.

You can also click the **Recalculate logic checks** button to manually recalculate them at any time from the logic check definition page:

Example Organization DevResults				Quick search	Q 🥐 Help)
Data Program Info Tools Administrati	on Bookmarks					
Home Fools Fools Children who slept	under a net must be less th	nan all children surve	eyed			
Children who slept up	nder a net	must be	e less tha	an all children	surveyed or Histor	ry
Notes						
The number of children under 5 years old who were equal to the total number of children under 5 years	reported as having slept (old in households surveye	underneath an inseo d about insect-treat	t-treated net (ITN) s ed nets (ITNs).	hould be less than or		
Definition						
Indicator results that do not meet this criteria will be	flagged for review.					
[3.1-N]		<u>≤</u> v	[3.1-D]			
Component indicators: 3.1-N # children under 5 years old who slept und net (ITN) the previous night	ler an insecticide-treated			: indicators: en under 5 years old in households surv eated nets (ITN)	eyed about	
Warnings						
Reporting Period 2021 Q3 🗸					Run Logic Check	
Activity 1		Place		Left	Right	
Healthy Children Campaign	Centre de Santé de Kassa	mbiya		4557	4506	
DevResults					a Delete this logic check	J

Or the activity's reporting period page:



Or from the data entry page for the indicator:

DevResults			Q	uick search	Q ?	Help	
Data Program Info Tools Adminis							
ome 🔸 Program Info 🔺 Time 🔺 Reporting Period	ls ► 2021 Q3	 Healthy Childr 	ren Campaign	# children ur STAT	Us 🖸 in Prog	ross	
-lealthy Children Ca	mpai	m		3141		1035	
021 Q3 Sebastian Foundation	mpar	911					
	cussion For	ms					
110 # children under 5 yea		househ	olds su	rveyed about	t	i Ind	licator In
	'c (ITN)						
insecticide-treated net	.5 (1111)						
insecticide-treated net	.5 (1114)						
insecticide-treated net	.5 (1114)						
INSECTICICE-TREATED NET	. ,	ners and resul	ts approvers	s can edit this data, bu	it other users ca	annot.	
	. ,	ners and resul	ts approvers	s can edit this data, bu		a nnot. Recalculate lop	zic checks
	. ,	ners and resul	its approvers	։ can edit this data, bւ			gic checks
	is closed. Own	ners and resul	its approvers Total	i can edit this data, bu Comment			gic checks
This reporting period's submission window	r is closed. Own						gic checks
This reporting period's submission window Location	y is closed. Own	Female	Total				gic checks
This reporting period's submission window Location Boké / Boffa / Centre de Santé de Kassambiya	y is closed. Own	Female	Total				gic checks
This reporting period's submission window Location Boké / Boffa / Centre de Santé de Kassambiya Boké / Boffa / Katia	y is closed. Own	Female	Total				gic checks
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Do logic check warnings prevent submission of indicator data?

Logic checks can be used to flag incorrect data, but they can also be used to flag unexpected or undesirable outcomes that are nonetheless correct. For this reason, logic check warnings do **not** prevent the submission of data. Logic check warnings are intended to assist reviewers in assessing data prior to approval.

How do I resolve a logic check?

When you **view warnings** and see that some data violates a logic check, examine the data to identify whether 1) there is an error with the data or whether 2) the data is correct and the warning indicates the need for a programmatic shift. If there is an error with the data, edit the indicator results to correct the data it or return the data to a partner to correct. Once corrected, the warning remains until the logic checks are recalculated automatically (which happens every 15 min) or **manually, by clicking the Recalculate logic checks button.**

Didn't answer your question? Please email us athelp@devresults.com.

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