

BeSD-TI

Behavioural and Social Drivers of Vaccination – Tools for Impact

Forms and Variable Lists (FVL) Structured for Compatibility with BeSD-TI

Draft Version 1.0
Revised December 2024



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Table of Contents

Acknowledgments	2
Introduction	3
Form BeSD CH Vx – Sample Questions for a BeSD Childhood Vx Form	4
Form BeSD COVID-19 Vx – Sample Questions for a BeSD COVID-19 Vx Form	11
Form BeSD CM – Cluster-level Metadata.....	19

Acknowledgments

The Behavioural and Social Drivers of Vaccination – Tools for Impact (BeSD-TI) software was developed in 2024 for the World Health Organization by Biostat Global Consulting.

This document was written by Mary Kay Trimner and Caitlin Clary in 2024.

Introduction

The Forms and Variable Lists (FVL) document is intended to fill two purposes:

1. It lists questions that may be used in questionnaires assessing behavioural and social drivers (BeSD) of vaccination. The questions listed here conform with the BeSD surveys outlined in the World Health Organization's (WHO) 2022 guidance.¹ Two types of BeSD surveys are considered:
 - BeSD of childhood vaccination
 - BeSD of COVID-19 vaccination
2. It lists variable names, variable types, and question response coding schemes that define what it means for datasets to be compatible with the freely available WHO software called *Behavioral and Social Drivers of Vaccination – Tools for Impact* (BeSD-TI).^{2,3} To be analyzed with BeSD-TI, survey datasets should use precisely the same variable names as those found here, precisely the same variable types specified, and precisely the same response coding for categorical variables.

This document uses the word “form” loosely – it does not provide field-ready paper questionnaire forms, but rather lists questions, response options, and skip patterns. The questions listed here could be reformatted into field-ready questionnaire forms in either paper or electronic formats.

While this document suggests many survey questions, we might also consider each form to be a template for a survey dataset to be analyzed with BeSD-TI. BeSD-TI does not require all the variables listed and conversely a BeSD-TI compatible dataset may include additional variables that are not listed in this document.

For more guidance on collecting, analyzing, and using BeSD data, refer to the WHO's 2022 guidebook.¹

¹ World Health Organization. (2022). Behavioural and social drivers of vaccination: tools and practical guidance for achieving high uptake. <https://iris.who.int/handle/10665/354459>

² Available on GitHub at: <https://github.com/BiostatGlobalConsulting/BeSDTI>. Refer to the BeSD-TI User's Guide (in the Documentation folder of the GitHub repository) for more information on installing and using BeSD-TI.

³ Pronounced *bestie*.

Form BeSD CH Vx – Sample Questions for a BeSD Childhood Vx Form

Item	Question	Responses	Skip	Required	Notes
<i>Interviewer information</i>					
date_of_interview	Date of interview	Date			As implemented in ODK, this field is restrained to be the current date.
name_of_interviewer	Name of interviewer	Free text			
supervisor	Name of supervisor	Free text			
<i>Location information</i>					
Country	Country [Alpha-3 code]	Free text			
Districtname	District name [4-30 characters]	Free text			
Clusternum	Cluster number	Number			
Housenum	Household number/ID	Number or string			
PUID	Participant unique identifier	Free text			
Area	Area type	1. Rural 2. Urban			
<i>Introduction</i>					
CHI_consent	Would you be willing to take the survey?	0. No 1. Yes	0 → Skip to last question (Go to interviewer_remarks)		
<i>Demographics</i>					
CHI_age	How old are you? [Years]	Number (0-99)			
CHI_gender	This may seem obvious, but I have to ask the question. What is your gender?	1. Woman 2. Man 3. Non-binary 4. Prefer not to say			The third response option can be included in contexts where specific third-gender categories are culturally recognized; this response option can be adapted as appropriate based on in-country considerations or consultation.
CHI_parcar	Are you the parent or primary caregiver of any children who are younger than 5 years old?	0. No 1. Yes	0 → Skip to last question (Go to interviewer_remarks)		
CHI_chi5	How many children do you have who are younger than 5 years old?	Number (1-10)			

Item	Question	Responses	Skip	Required	Notes
<i>Data on child</i>					
CHI_chirel	What is your relationship to your child?	1. Mother 2. Father 3. Grandparent 4. Uncle or Aunt 5. Brother or sister 6. Other?	<i>Anything but 6 → Skip next question (Go to CHI_chiage)</i>		
CHI_chirelother	Please specify the other relationship to the child:	Free text			
CHI_chiage	How old is your youngest child? [Years]	0. Less than 1 year old 1. 1 year old 2. 2 years old 3. 3 years old 4. 4 years old			This question collects the age of the youngest child in number of completed years.
CHI_chigender	Is your youngest child?	1. Female 2. Male 3. Non-binary 4. Prefer not to say			The third response option can be included in contexts where specific third-gender categories are culturally recognized; this response option can be adapted as appropriate based on in-country considerations or consultation.
<i>Childhood vaccination BeSD questions</i>					
CHI_vaccs	[COUNTRY NAME] has a schedule of vaccines for children. As far as you know, has your child had none of these vaccines, some of these vaccines or all of these vaccines?	1. None 2. Some 3. All			Full vaccination status should be recorded as recommended in the World Health Organization vaccination coverage cluster surveys: reference manual. https://apps.who.int/iris/handle/10665/272820 The text in square brackets is to be locally adapted to include the country name.
CHI_intent	[COUNTRY NAME] has a schedule of vaccines for children. Do you want your child to get none of these vaccines, some of these vaccines or all of these vaccines?	1. None 2. Some 3. All			“Want” is similar to desire, prefer, like, plan and intend. It might identify a plan for future action but can also be about willingness. “Recommended” is similar to advised, suggested, standard or nationally recommended; it refers to the national vaccination schedule of recommended vaccines for children. The text in square brackets is to be locally adapted to include the country name.

Item	Question	Responses	Skip	Required	Notes
CHI_confb	How important do you think vaccines are for your child's health?	1. Not at all important 2. A little important 3. Moderately important 4. Very important			
CHI_confs	How safe do you think vaccines are for your child?	1. Not at all safe 2. A little safe 3. Moderately safe 4. Very safe			The main idea is the belief that vaccination is safe and is not dangerous or harmful. "Do you think" is included so that respondents do not see the survey as a test or as demeaning them for what they may not know.
CHI_confh	How much do you trust the health workers who give children vaccines?	1. Not at all 2. A little 3. Moderately 4. Very much			"Trust" refers to the belief that the health worker will be competent, reliable and give good health care. "Health worker" will need local adaptation to indicate the medical professionals responsible for recommending and administering childhood vaccination (i.e. health provider, general practitioner, or pediatrician and assisting nurses or vaccinators).
CHI_normp	Do you think most parents you know get their children vaccinated?	0. No 1. Yes			Includes friends, people at work and people in the neighbourhood who they may not have close social ties to. It does not include people they have never met.
CHI_normf	Do you think most of your close family and friends want you to get your child vaccinated?	0. No 1. Yes			Includes people with opinions the respondent would listen to or feel some degree of pressure to heed.
CHI_normr	Do you think your religious leaders want you to get your child vaccinated?	0. No 1. Yes			Includes priests, clerics, imams, rabbis and others in similar roles.
CHI_normc	Do you think your community leaders want you to get your child vaccinated?	0. No 1. Yes			"Community" may refer to a neighbourhood or region or social group defined by a characteristic such as race or national origin. "Community leader" includes people who represent a neighbourhood, region or subgroup of people.

Item	Question	Responses	Skip	Required	Notes
CHI_rechcw	Has a health worker recommended your child be vaccinated?	0. No 1. Yes			“Recommended” includes raising the topic during a clinic visit, saying the child is due and offering advice to get the child vaccinated. The term “health worker” must be locally adapted to indicate the medical professional most likely to/responsible for recommending childhood vaccination (i.e. health provider, general practitioner or pediatrician)
CHI_recall	Have you ever been contacted about your child being due for vaccination?	0. No 1. Yes			
CHI_travel	If it was time for your child to get vaccinated, would the mother need permission to take your child to the clinic?	0. No 1. Yes			“Time to get vaccinated” is similar to the child being due for vaccines. “Clinic” refers to the clinic, doctor’s office, primary care practice, vaccination clinic, centre or mobile service that delivers the vaccines for the child.
CHI_where	Do you know where to go to get your child vaccinated?	0. No 1. Yes			
CHI_tookc	Have you personally ever taken your youngest child to get vaccinated?	0. No 1. Yes			
CHI_avail	Have you ever been turned away when you tried to get your child vaccinated?	0. No 1. Yes			“Turned away” refers to staff at the clinic saying the vaccine was not available, a sign saying the clinic was out of stock or being unable to see a vaccine provider because of other problems at the clinic.
CHI_afford	How easy is it to pay for vaccination? When you think about the cost, please consider any payments to the clinic, the cost of getting there, plus the cost of taking time away from work.	1. Not at all easy 2. A little easy 3. Moderately easy 4. Very easy			“Easy to pay” refers to the total costs associated with vaccinating being something the respondent can pay for, costing an amount the respondent can pay for and being within the respondent’s means.
CHI_access	How easy is it to get vaccination services for your child?	1. Not at all easy 2. A little easy 3. Moderately easy 4. Very easy			

Item	Question	Responses	Skip	Required	Notes
CHI_lowacnoth	<p><i>Question group: what makes it hard to get vaccination services for your child?</i></p> <p>Nothing, it's not hard</p>	<p>0. No</p> <p>1. Yes</p>	<p><i>1 → Skip next section</i> (Go to CHI_satis)</p>		<p>Respondents can choose multiple response options here. There is no skip logic for this question, it must be asked of all respondents.</p> <p>"Nothing. It's not hard" is an exclusive response option (it cannot be selected alongside other response options) available for those who do not think it is difficult to get vaccination services for their child.</p>
<i>If the answer to CHI_lowacnoth was 'No' then the respondent should answer 'Yes' to at least one of the following options</i>					
CHI_lowachard	<p><i>Question group: what makes it hard to get vaccination services for your child?</i></p> <p>Getting to the clinic is hard</p>	<p>0. No</p> <p>1. Yes</p>			Refers to geographical distance and barriers related to transportation.
CHI_lowacopen	<p><i>Question group: what makes it hard to get vaccination services for your child?</i></p> <p>The clinic opening times are inconvenient</p>	<p>0. No</p> <p>1. Yes</p>			Refers to opening hours that do not suit the respondent.
CHI_lowacaway	<p><i>Question group: what makes it hard to get vaccination services for your child?</i></p> <p>The clinic sometimes turns people away without vaccinating</p>	<p>0. No</p> <p>1. Yes</p>			Refers to the clinic sending people, who came specifically for vaccination, home without vaccination.
CHI_lowactime	<p><i>Question group: what makes it hard to get vaccination services for your child?</i></p> <p>The waiting time in the clinic takes too long</p>	<p>0. No</p> <p>1. Yes</p>			Refers to the waiting times at the clinic.
CHI_lowacelse	<p><i>Question group: what makes it hard to get vaccination services for your child?</i></p> <p>Is there something else?</p>	<p>0. No</p> <p>1. Yes</p>	<p><i>0 → Skip next question</i> (Go to CHI_satis)</p>		
CHI_lowacother	<p><i>Question group: what makes it hard to get vaccination services for your child?</i></p> <p>Please specify "Other" reasons why it is hard to get vaccination services</p>	Free text			
End question group: what makes it hard to get vaccination services for your child?					

Item	Question	Responses	Skip	Required	Notes
CHI_satis	How satisfied are you with the vaccination services?	1. Not at all satisfied 2. A little satisfied 3. Moderately satisfied 4. Very satisfied			"Satisfied" refers to how good the services and experience were for the respondent, and how pleased or happy they felt about the visit and the interactions that took place. "Vaccination services" refers to work done by vaccination clinic staff who greet the patient, handle paperwork and payment, and administer the vaccine. "Not at all" is bad and not acceptable. "Not very" is okay, adequate and not bad. "Somewhat" is positive but not the best possible. "Very" is great, fantastic and outstanding.
CHI_qualinoth	<i>Question group: what is not satisfactory about the vaccination services?</i> Nothing, you are satisfied	0. No 1. Yes	1 → Skip to last question (Go to interviewer_remarks)		Respondents can choose multiple response options here. There is no skip logic for this question, it must be asked of all respondents. "Nothing, you are satisfied" is an exclusive response option (it cannot be selected alongside other response options) available for respondents who are satisfied with the vaccination services.
<i>If the answer to CHI_qualinoth was 'No' then the respondent should answer 'Yes' to at least one of the following options</i>					
CHI_qualiavail	<i>Question group: what is not satisfactory about the vaccination services?</i> Vaccine is not always available	0. No 1. Yes			Refers to people being turned away due to lack of vaccine (stockouts).
CHI_qualiopen	<i>Question group: what is not satisfactory about the vaccination services?</i> The clinic does not open on time	0. No 1. Yes			Refers to the clinic not operating according to the hours advertised.
CHI_qualiwait	<i>Question group: what is not satisfactory about the vaccination services?</i> Waiting times are long	0. No 1. Yes			The perception that the service was poorly organized for time, and that staff were unable to provide efficient, quick service.

CHI_qualiclean	<p><i>Question group: what is not satisfactory about the vaccination services?</i></p> <p>The clinic is not clean</p>	<p>0. No</p> <p>1. Yes</p>			Any complaint about the place where vaccines are given, including location, and building structure. This includes lack of cleanliness and poor maintenance. This includes vaccine vials, needles, fridges for storing vaccines as well as furniture in the clinic, reception and waiting rooms, or even appearance of personnel, such as appropriate attire, clean appearance, and uniforms.
CHI_qualipoor	<p><i>Question group: what is not satisfactory about the vaccination services?</i></p> <p>Staff are poorly trained</p>	<p>0. No</p> <p>1. Yes</p>			The perception that the service received was not as promised or that the quality of service was not reliable or consistent. The respondent may perceive that staff did not fulfil their role very well, that the staff were not well trained or prepared for their responsibilities, or that the staff lacked the confidence or skill to deliver the service expected.
CHI_qualirespect	<p><i>Question group: what is not satisfactory about the vaccination services?</i></p> <p>Staff are not respectful</p>	<p>0. No</p> <p>1. Yes</p>			Refers to inability to inspire confidence, put parents at ease and communicate competence. It includes staff being discourteous, impolite and unable to reassure parents. Staff can show respect in verbal and non-verbal ways.
CHI_qualitime	<p><i>Question group: what is not satisfactory about the vaccination services?</i></p> <p>Staff do not spend enough time with people</p>	<p>0. No</p> <p>1. Yes</p>			The perceived lack of empathy a respondent may experience from vaccination clinic staff, and perception of a rushed service or lack of time dedicated to reassuring parents and answering their questions.
CHI_qualielse	<p><i>Question group: what is not satisfactory about the vaccination services?</i></p> <p>Is there something else?</p>	<p>0. No</p> <p>1. Yes</p>	<p>0 → Skip next question</p> <p>(Go to interviewer_remarks)</p>		
CHI_qualiother	<p><i>Question group: what is not satisfactory about the vaccination services?</i></p> <p>Please specify "Other" reasons vaccination services are not satisfactory</p>	Free text			
End question group: what is not satisfactory about the vaccination services?					
interviewer_remarks	Interviewer's remarks	Free text			

Form BeSD COVID-19 Vx – Sample Questions for a BeSD COVID-19 Vx Form

Item	Question	Responses	Skip	Required	Notes
<i>Interviewer information</i>					
date_of_interview	Date of interview	Date			As implemented in ODK, this field is restrained to be the current date.
name_of_interviewer	Name of interviewer	Free text			
supervisor	Name of supervisor	Free text			
<i>Location information</i>					
Country	Country [Alpha-3 code]	Free text			
Districtname	District name [4-30 characters]	Free text			
Clusternum	Cluster number	Number			
Housenum	Household number/ID	Number or string			
PUID	Participant unique identifier	Free text			
Area	Area type	1. Rural 2. Urban			
<i>Introduction</i>					
COV_consent	Would you be willing to take the survey?	0. No 1. Yes	0 → Skip to last question (Go to interviewer_remarks)		
<i>Demographics</i>					
COV_age	How old are you? [Years]	Number (0-99)			
COV_gender	This may seem obvious, but I have to ask the question. What is your gender?	1. Woman 2. Man 3. Non-binary 4. Prefer not to say			The third response option can be included in contexts where specific third-gender categories are culturally recognized; this response option can be adapted as appropriate based on in-country considerations or consultation.

Item	Question	Responses	Skip	Required	Notes
COV_occup	Which of the following best describes your work during the COVID-19 pandemic?	1. Health worker 2. Essential services worker 3. Educator 4. Other worker 5. None of the above	<i>Anything but 1 → Skip next question</i> <i>(Go to COV_condi)</i>		“Essential services worker” refers to other non-health frontline workers (e.g. police, transport service workers, grocery store staff). The categories may be locally adapted to ensure they are appropriate to the specific context and allow disaggregated data as needed. Some countries may choose to delineate between front-line and non-front-line health workers.
COV_hwrole	What is your current role?	1. Doctor 2. Nurse 3. Paramedic/first responder 4. Community health worker 5. Traditional healer 6. Other health worker			The response options offered should be adapted in-country at national or even subnational level to reflect the most appropriate role categorizations based on the types of health workers most likely to be at risk of COVID-19 infection/most exposed to COVID-19.
COV_condition	Do you have a chronic condition? This could include, for example, obesity, diabetes, lung disease, or another long-term condition.	0. No 1. Yes 2. Not sure			
<i>COVID-19 specific questions</i>					
COV_diagn	To your knowledge, have you ever had COVID-19?	0. No 1. Yes	<i>0 → Skip next two questions</i> <i>(Go to COV_risks)</i>		When a COVID-19 vaccine becomes available in-country, researchers may choose to include a question to assess whether the respondent has received a COVID-19 vaccine. If several are available in the country, a question that asks which vaccine the respondent received may also be added.
COV_diagnsever	Were your COVID19 symptoms mild or severe?	0. Mild 1. Severe			
COV_diagnstest	Was your COVID19 diagnosis confirmed by a test?	0. No 1. Yes			
COV_risks	How concerned are you about getting COVID-19?	1. Not at all concerned 2. A little concerned 3. Moderately concerned 4. Very concerned			“Concern” is similar to worry or thinking about a problem; it is not directly about fear or anxiety or emotion.
<i>COVID-19 BeSD questions</i>					

Item	Question	Responses	Skip	Required	Notes
COV_vaccs	Have you received a COVID-19 vaccine?	0. No 1. Yes, you received one dose 2. Yes, you received two doses 3. Yes, you received three or more doses 4. Not sure			A “not sure” response option is included here as it is likely some adults may not easily be able to recall such information.
COV_intent	Do you want to get a COVID-19 vaccine?	0. No, you do not want to 1. Yes, you do want to 2. You are not sure 3. You are already vaccinated			Countries can choose to add an open-text follow up question for those who answer “no”: What is the main reason you would not get a COVID-19 vaccine if it were available to you?
COV_confb	How important do you think getting a COVID-19 vaccine is for your health?	1. Not at all important 2. A little important 3. Moderately important 4. Very important			
COV_confs	How safe do you think a COVID-19 vaccine is for you?	1. Not at all safe 2. A little safe 3. Moderately safe 4. Very safe			The main idea is the belief that the vaccine is safe and is not dangerous or harmful.
COV_seefr	Do you think that getting a COVID-19 vaccine will allow you to see your family and friends again?	0. No 1. Yes			
COV_confh	How much do you trust the health workers who would give you a COVID-19 vaccine?	1. Not at all 2. A little 3. Moderately 4. Very much			“Trust” refers to belief that the health worker who gives vaccines will be competent, reliable and give good health care. “Health worker” will need local adaptation to indicate the medical professionals responsible for recommending and administering adult vaccination (i.e. general practitioner, health provider or primary health care physician and assisting nurses or vaccinators).
COV_normp	Do you think most adults you know will get a COVID-19 vaccine, if it is recommended to them?	0. No 1. Yes			Includes friends, people at work, and people in the neighbourhood who they may not have close social ties to. It does not include people they have never met.

Item	Question	Responses	Skip	Required	Notes
COV_normw	Do you think most of the people you work with will get a COVID-19 vaccine?	0. No 1. Yes 2. Not currently working	2 → <i>Skip question COV_onsite</i>		Includes all colleagues and people at their place of work who could be eligible for a COVID-19 vaccine.
COV_normf	Do you think most of your close family and friends want you to get a COVID-19 vaccine?	0. No 1. Yes			Includes people with opinions the respondent would listen to or feel some degree of pressure to heed.
COV_normr	Do you think your religious leaders want you to get a COVID-19 vaccine?	0. No 1. Yes			Includes priests, clerics, imams, rabbis and others in similar roles.
COV_normc	Do you think other community leaders want you to get a COVID-19 vaccine?	0. No 1. Yes			“Community” may refer to a neighbourhood or region or a social group defined by a characteristic such as race or national origin. “Community leader” includes people who represent a neighbourhood, region or subgroup of people.
COV_rechw	Has a health worker recommended you get a COVID-19 vaccine?	0. No 1. Yes			“Recommended” includes raising the topic during a clinic visit, saying the person is due and offering advice to get vaccinated. The term “health worker” must be adapted to reflect local language (e.g. health care provider, general practitioner, vaccinator)
COV_recall	Have you ever been contacted about being due for a COVID-19 vaccine?	0. No 1. Yes			
COV_travel	If it was time for you to get a COVID-19 vaccine, would you need permission to go and get it?	0. No 1. Yes			
COV_where	Do you know where to go to get a COVID-19 vaccine for yourself?	0. No 1. Yes			
COV_onsite	Is a COVID-19 vaccine available for you to get at your place of work?	0. No 1. Yes	<i>Skip if the answer to COV_normw was 2</i>		
COV_afford	How easy it to pay for COVID-19 vaccination? When you think about the cost, please consider any payments to the clinic, the cost of getting there and the cost of taking time away from work.	1. Not at all easy 2. A little easy 3. Moderately easy 4. Very easy			Refers to the total costs associated with vaccinating being something the respondent can pay for, costing an amount the respondent can pay for and being within the respondent's means.

Item	Question	Responses	Skip	Required	Notes
COV_access	How easy is it to get a COVID-19 vaccine for yourself?	1. Not at all easy 2. A little easy 3. Moderately easy 4. Very easy			"Easy" refers to achievable, possible without great effort, not hard and not difficult. "Vaccination services" refers to access to vaccination.
COV_lowacnoth	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> Nothing, it's not hard	0. No 1. Yes	1 → Skip next section (Go to COV_satis)		"Nothing, it's not hard" is an exclusive response option (it cannot be selected alongside other response options) available for those who do not think it is difficult to get COVID-19 vaccines.
<i>If the answer to COV_lowacnoth was 'No' then the respondent should answer 'Yes' to at least one of the following options</i>					
COV_lowacavail	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> COVID-19 vaccination is not yet available for me	0. No 1. Yes			
COV_lowachard	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> Making an appointment is hard	0. No 1. Yes			
COV_lowacsite	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> The vaccination site is hard to get to	0. No 1. Yes			Refers to geographical distance and logistics of getting to the place where COVID-19 vaccines are offered being difficult or inconvenient.
COV_lowacopen	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> The opening times are inconvenient	0. No 1. Yes			Refers to opening hours that do not suit the respondent.
COV_lowacwait	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> The waiting time takes too long	0. No 1. Yes			Refers to the waiting times at the place of vaccination.
COV_lowacwork	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> I am unable to leave work duties	0. No 1. Yes			Refers to the health worker being unable to make time for vaccination alongside their work responsibilities.
COV_lowacaway	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> Sometimes people are turned away without vaccination	0. No 1. Yes			Refers to sending people, who came specifically for vaccination, home without vaccination.

Item	Question	Responses	Skip	Required	Notes
COV_lowacelse	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> Is there something else?	0. No 1. Yes	0 → Skip next question (Go to COV_satis)		
COV_lowacother	<i>Question group: what makes it hard for you to get a COVID-19 vaccine?</i> Please record "Other" reason why it is hard to get a COVID-19 vaccine	Free text			
End question group: what makes it hard for you to get a COVID-19 vaccine?					
COV_satis	How satisfied are you with COVID-19 vaccination services?	1. Not at all satisfied 2. A little satisfied 3. Moderately satisfied 4. Very satisfied			<p>"Satisfied" refers to how good the services and experience were for the respondent, and how pleased or happy they felt about the visit and the interactions that took place.</p> <p>"Vaccination services" refers to work done by vaccination clinic staff who greet the patient, handle paperwork and payment, and administer the vaccine.</p> <p>"Not at all" is bad and not acceptable.</p> <p>"Not very" is okay, adequate and not bad.</p> <p>"Somewhat" is positive but not the best possible.</p> <p>"Very" is great, fantastic and outstanding.</p>
COV_qualinoth	<i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i> Nothing, you are satisfied	0. No 1. Yes	1 → Skip to last question (Go to interviewer_remarks)		<p>"Nothing, I am satisfied" is an exclusive response option (it cannot be selected alongside other response options) available for respondents who are satisfied with the vaccination services.</p>
If the answer to COV_qualinoth was 'No' then the respondent should answer 'Yes' to at least one of the following options					
COV_qualiavail	<i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i> Vaccine is not available	0. No 1. Yes			Refers to people being turned away due to lack of vaccine (stockouts).

Item	Question	Responses	Skip	Required	Notes
COV_qualiopen	<p><i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i></p> <p>The vaccination site does not open on time</p>	<p>0. No</p> <p>1. Yes</p>			Refers to the clinic not operating according to the hours advertised.
COV_qualiwait	<p><i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i></p> <p>Waiting times are long</p>	<p>0. No</p> <p>1. Yes</p>			The perception that the service was poorly organized for time, and that staff were unable to provide efficient, quick service.
COV_qualiclean	<p><i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i></p> <p>The vaccination site is not clean</p>	<p>0. No</p> <p>1. Yes</p>			Refers to any complaint about the place where vaccines are given, including location and building structure. This includes lack of cleanliness and poor maintenance. This includes vaccine vials, needles, fridges for storing vaccines as well as furniture in the clinic, reception and waiting rooms, or even appearance of personnel, such as appropriate attire, clean appearance, and uniforms.
COV_qualipoor	<p><i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i></p> <p>Staff are poorly trained</p>	<p>0. No</p> <p>1. Yes</p>			The perception that the service received was not as promised or that the quality of service was not reliable or consistent. The respondent may perceive that staff did not fulfil their role very well, that the staff were not well trained or prepared for their responsibilities, or that the staff lacked the confidence or skill to deliver the service expected.
COV_qualirespect	<p><i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i></p> <p>Staff are not respectful</p>	<p>0. No</p> <p>1. Yes</p>			Refers to inability to inspire confidence, put parents at ease and communicate competence. It includes staff being discourteous, impolite, and unable to reassure parents. Staff can show respect in verbal and non-verbal ways.
COV_qualitime	<p><i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i></p> <p>Staff do not spend enough time with people</p>	<p>0. No</p> <p>1. Yes</p>			The perceived lack of empathy a respondent may experience from vaccination clinic staff, and perception of a rushed service or lack of time dedicated to reassuring parents and answering their questions.

Item	Question	Responses	Skip	Required	Notes
COV_qualielse	<i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i> Is there something else?	0. No 1. Yes	<i>0 → Skip next question (Go to interviewer_remarks)</i>		
COV_qualiother	<i>Question group: what is not satisfactory about the COVID-19 vaccination services?</i> Please record "Other" reasons COVID-19 vaccination services are not satisfactory	Free text			
<i>End question group: what is not satisfactory about the COVID-19 vaccination services?</i>					
interviewer_remarks	Interviewer's remarks	Free text			

Form BeSD CM – Cluster-level Metadata

When analyzing BeSD data collected as part of a survey from a probability sample, including a cluster-level metadata (CM) dataset that describes clusters, strata, and weights is the recommended approach to account for survey design in a BeSD-TI analysis (alternatively, design variables could be included in the survey dataset). The CM dataset may include additional variables, such as variables summarizing other characteristics of clusters.

The CM dataset is not required in order to perform a BeSD-TI analysis. If provided, the CM dataset should conform to the following guidelines:

Variable	Label	Responses	Required?
stratum_id	Stratum ID number	Number	Yes
stratum_name	Stratum name	Free text	Yes
cluster_id	Cluster ID number	Number	Yes
cluster_name	Cluster name	Free text	Yes
province_id*	Province ID number	Number	No
province_name	Province name	Free text	No
urban_cluster	Is the cluster urban?	1 = yes; 0 = no Or we might say: 1 = Urban; 0 = Rural	No; include if you intend to stratify results by urbanicity
psweight_ch**	Post-stratified sampling weight for the cohort in a child vaccination BeSD survey	Number	For childhood vaccination BeSD analyses, yes
psweight_cov**	Post-stratified sampling weight for the cohort in a COVID-19 vaccination BeSD survey	Number	For COVID-19 vaccination BeSD analyses, yes

* The CM dataset defines which strata (values of stratum_id) are nested within which administrative units (values of province_id). Every row in CM with the same value of stratum_id should also have the same value of province_id.

** By default BeSD-TI assumes that every respondent in the same cluster will have the same post-stratified weight. This is not *universally* true; if survey weights vary within a cluster in your survey then code the psweight_ch/psweight_cov variables with missing values in the CM dataset, and include a survey weight variable in the survey dataset rather than in the CM dataset.