

## Supplementary materials

**S1 data:** Questionnaire (English and Amharic version)

### English version

**Questionnaire for assessment of factors associated with diarrhea in Addis Ababa and Debre Berhan, Ethiopia.**

#### I. Patient information

1. Name of health facility \_\_\_\_\_
2. Identification number (card number) \_\_\_\_\_
3. Address \_\_\_\_\_

#### II. Socio-demographic information for under-five children

S.No	Questions (for child and caregiver)	Response
1.	Age of the child	_____ (in month) or _____ (in year)
2.	Sex of the child	<input type="checkbox"/> Male <input type="checkbox"/> Female
3.	Relation of the respondent to the child?	<input type="checkbox"/> Mother <input type="checkbox"/> Guardian (caregiver) <input type="checkbox"/> Other (specify)
4.	Age of the mother or guardian (caregiver)	_____
5.	Sex of the guardian (if not mother)	<input type="checkbox"/> Male <input type="checkbox"/> Female
6.	How many person are in the household?	_____
7.	How many children are in the family?	_____
8.	Birth order	_____

9.	Educational level of the mother or guardian	<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary <input type="checkbox"/> Junior secondary <input type="checkbox"/> Preparatory <input type="checkbox"/> College or University
10.	Educational level of the father	<input type="checkbox"/> Illiterate <input type="checkbox"/> Primary <input type="checkbox"/> Junior secondary <input type="checkbox"/> Preparatory <input type="checkbox"/> College or university
11.	Marital status of the mother or guardian	<input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Other (specify)
12.	Ethnic groups	<input type="checkbox"/> Amhara <input type="checkbox"/> Oromo <input type="checkbox"/> Tigray <input type="checkbox"/> Other (specify)
13.	Occupation (Mother)	<input type="checkbox"/> Employed <input type="checkbox"/> Self-employed <input type="checkbox"/> Other (specify)
	Occupation (Father)	<input type="checkbox"/> Employed <input type="checkbox"/> Self-employed <input type="checkbox"/> Other (specify)
14.	Family income per month (in birr)	_____

### III. Clinical features

15.	Time of illness started	_____
16.	Duration of diarrhea in days	_____
17.	Stool frequency per day	_____
18.	Types of diarrhea	<input type="checkbox"/> Watery <input type="checkbox"/> Mucoid <input type="checkbox"/> Bloody <input type="checkbox"/> Loose
19.	Child dehydration status	<input type="checkbox"/> Mild <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/> None
20.	Other clinical feature	
	Fever	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Vomiting	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Nausea	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Increased thirst	<input type="checkbox"/> Yes <input type="checkbox"/> No

	Abdominal distension	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Other (specify)	_____
<b>21.</b>	Previous treatment	<input type="checkbox"/> Yes <input type="checkbox"/> No
	If yes when?	_____

#### IV. Behavioural and health related factors related to under-five children

<b>22.</b>	How the child is cared daily at home?	<input type="checkbox"/> With house worker <input type="checkbox"/> With mother <input type="checkbox"/> In day care <input type="checkbox"/> Other (specify)___
<b>23.</b>	Feeding practice	<input type="checkbox"/> Exclusive breast milk <input type="checkbox"/> Breast milk & solid food <input type="checkbox"/> Solid food only <input type="checkbox"/> Formula Milk
<b>24.</b>	Duration of breastfeeding	<input type="checkbox"/> < 1year <input type="checkbox"/> 1-2 years <input type="checkbox"/> > 2years
<b>25.</b>	Beginning age of supplementary feeding	<input type="checkbox"/> < 6 moths <input type="checkbox"/> 6-12 moths <input type="checkbox"/> > 12 months
<b>26.</b>	What method do you use to feed your child?	<input type="checkbox"/> Hand <input type="checkbox"/> Cup or spoon <input type="checkbox"/> Bottle
<b>27.</b>	When do you wash your hand?	<input type="checkbox"/> Before food preparation <input type="checkbox"/> Before and after feeding <input type="checkbox"/> After latrine <input type="checkbox"/> After cleaning child's bottom
<b>28.</b>	What do you use for hand washing?	<input type="checkbox"/> Soaps <input type="checkbox"/> Water only <input type="checkbox"/> Others
<b>29.</b>	Do your child eat by himself/herself?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>30.</b>	Do your child wash his/her hands before feeding?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>31.</b>	How the child dispose his/her	<input type="checkbox"/> With diaper <input type="checkbox"/> Latrine <input type="checkbox"/> Ground

	feces?	<input type="checkbox"/> On baby potty (popo) <input type="checkbox"/> Under clothes
32.	Where do you dispose your child's stool?	<input type="checkbox"/> Child use latrine <input type="checkbox"/> Put into latrine <input type="checkbox"/> Thrown in garbage <input type="checkbox"/> Buried <input type="checkbox"/> Left on the ground
33.	Where do you dispose water used for washing your child's stool?	<input type="checkbox"/> Put in latrine <input type="checkbox"/> Thrown on the ground <input type="checkbox"/> Thrown in the garbage <input type="checkbox"/> No water used
34.	What vaccines your child has taken?	<input type="checkbox"/> Measles vaccine <input type="checkbox"/> Rota vaccine <input type="checkbox"/> Other (specify)
35.	Nutritional status of the child	<input type="checkbox"/> Under nutrition <input type="checkbox"/> Normal
36.	Is there any family member who travel abroad?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, when? _____

#### V. Environmental exposure variables

37.	House ownership	<input type="checkbox"/> Private <input type="checkbox"/> Rented <input type="checkbox"/> Other (specify)
38.	Is a separate kitchen available?	<input type="checkbox"/> Yes <input type="checkbox"/> No
39.	Ownership of latrine	<input type="checkbox"/> Shared <input type="checkbox"/> Private <input type="checkbox"/> Public
40.	What types of toilet does the household mainly use?	<input type="checkbox"/> Pit latrine with slab <input type="checkbox"/> Pit latrine without a slab or pour-flush latrine <input type="checkbox"/> Open field <input type="checkbox"/> Other (specify)_____
41.	Does hand washing facility is available near to latrine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
42.	How often is the latrine cleaned?	<input type="checkbox"/> Every time it is spoiled <input type="checkbox"/> Every day <input type="checkbox"/> 1-2 times a week <input type="checkbox"/> Not cleaned
43.	Where is your refuse container (bin) located?	<input type="checkbox"/> Kept indoors <input type="checkbox"/> Outdoors <input type="checkbox"/> Do not own a bin

44.	Does your bin have a properly fitting lid?	<input type="checkbox"/> Yes <input type="checkbox"/> No
45.	If your waste is not collected, how do you dispose of your waste?	<input type="checkbox"/> Burn <input type="checkbox"/> Burry <input type="checkbox"/> Dump <input type="checkbox"/> Other (specify)_____
46.	How often is your waste/refuse collected by local authority?	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Never <input type="checkbox"/> Other (specify)_____
47.	Are there any domestic animals in the compound?	<input type="checkbox"/> Yes <input type="checkbox"/> No
48.	What types of animals are in the house or the yard?	<input type="checkbox"/> Cattle <input type="checkbox"/> Goats <input type="checkbox"/> Dog <input type="checkbox"/> Chicken <input type="checkbox"/> Other specify
49.	Where do you mainly get your drinking water from?	<input type="checkbox"/> Tape water <input type="checkbox"/> Packed water <input type="checkbox"/> Protected spring/well water <input type="checkbox"/> Unprotected spring/well water <input type="checkbox"/> Other ___
50.	Time to obtain drinking water (shift)	<input type="checkbox"/> No shift (daily) <input type="checkbox"/> Shift <input type="checkbox"/> if shift, how long? _____
51.	What treatment of water do you use?	<input type="checkbox"/> Filtering <input type="checkbox"/> Boiling <input type="checkbox"/> None <input type="checkbox"/> Other (specify)_____
52.	What kind of utensils do you use for storing water?	<input type="checkbox"/> Storage containers without lid <input type="checkbox"/> Storage containers with lid
53.	Do you always clean and empty the storage container before replacing with fresh water?	<input type="checkbox"/> Yes <input type="checkbox"/> No

**Data collector name** \_\_\_\_\_ **Date** \_\_\_\_\_ **Signature** \_\_\_\_\_

**Amharic version**

ዕድሜያቸው ከ5 ዓመት በታች በሆኑ ህጻናት ላይ ለሚከሰተው የተቅማጥ በሽታ ተያያዥነት ያላቸውን ነገሮች ለዳሰስ የተዘጋጀ መጥይቅ

**ሀ. የህፃናት (የታካሚው) መረጃ**

1. የህክምና አገልግሎት መስጫ ስም \_\_\_\_\_
2. የህመምተኛ መለያ ቁጥር (ካርድ ቁጥር) \_\_\_\_\_
3. አድራሻ \_\_\_\_\_

**ለ. ማህበራዊና የወሳኝ ኩነቶች መረጃ**

ተ.ቁ.	መጥይቆች(ለህጻኑና አሳዳጊ)	ምላሽ
1.	የህፃን/ኗ ዕድሜ	_____
2.	የህፃን/ኗ የታ	<input type="checkbox"/> ወንድ <input type="checkbox"/> ሴት
3.	ከህፃን/ኗ ጋር ያለው ዝምድና	<input type="checkbox"/> ወላጅ እናት <input type="checkbox"/> አሳዳጊ <input type="checkbox"/> ሌላ (ይጠቀስ)
4.	የህፃን/ኗ እናት/አሳዳጊ ዕድሜ	_____
5.	የህፃን/ኗ አሳዳጊ ጾታ (ከእናት ውጭ ከሆነ)	<input type="checkbox"/> ወንድ <input type="checkbox"/> ሴት
6.	የቤተሰብ ብዛት ስንት ነው?	
7.	በቤት ውስጥ ምን ያህል ህጻናት አሉ?	_____
8.	ስንተኛ ልጅ ነው?	
9.	የህጻኑ አሳዳጊ የትምህርት ደረጃ	<input type="checkbox"/> ያልተማረ <input type="checkbox"/> የመጀመሪያ ደረጃ <input type="checkbox"/> መለስተኛና ሁለተኛ ደረጃ <input type="checkbox"/> መሰናዶ <input type="checkbox"/> ኮሌጅ ወይም ዩኒቨርሲቲ
10.	የአባት የትምህርት ደረጃ	<input type="checkbox"/> መለስተኛና ሁለተኛ ደረጃ <input type="checkbox"/> መሰናዶ <input type="checkbox"/> ኮሌጅ ወይም ዩኒቨርሲቲ
11.	የህጻኑ አሳዳጊ የጋብቻ ሁኔታ	<input type="checkbox"/> ያላባ <input type="checkbox"/> ያባ <input type="checkbox"/> ሌላ (ይገለጽ)
12.	የስራ ሁኔታ (የእናት)	<input type="checkbox"/> ተቀጣሪ <input type="checkbox"/> የራስ ተቀጣሪ <input type="checkbox"/> ሌላ (ይገለጽ)
	የስራ ሁኔታ (የአባት)	<input type="checkbox"/> ተቀጣሪ <input type="checkbox"/> የራስ ተቀጣሪ <input type="checkbox"/> ሌላ (ይገለጽ)
13.	የቤተሰብ ወርሃዊ ገቢ (ቡብር)	
14.	ባለፈው ሳምንት ውስጥ ጥሬ አትክልት፣ፍራፍሬና ስጋ ልጆትን	<input type="checkbox"/> አዎ <input type="checkbox"/> አላበላሁም

	አብልተውታል?
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**ሐ. ከህጻኑ በሽታ ጋር የሚያያዙ ምልክቶችና ተያያዥ ነገሮች**

ተ.ቁ.	መጠይቆች	ምላሽ
15.	ህመሙ የጀመረበት ጊዜ	_____
16.	ተቅማጡ የቆየበት ጊዜ (በቀን)	_____
17.	የተቅማጥ ወይም የሰገራ ድግግሞሽ በቀን	_____
18.	የተቅማጡ ዓይነት	<input type="checkbox"/> ውሃማ <input type="checkbox"/> ዝልግልግ <input type="checkbox"/> ደም የቀላቀለ <input type="checkbox"/> የላላ (ቀጠን ያለ)
19.	የህፃኑ/ኗ ውሃነስነት (ድርቀት) ሁኔታ	<input type="checkbox"/> ቀላል <input type="checkbox"/> መካከለኛ <input type="checkbox"/> አስከፊ <input type="checkbox"/> የለም
20.	ሌሎች የታዩ ምልክቶች	
	ትኩሳት	<input type="checkbox"/> አዎ <input type="checkbox"/> የለም
	ማስታወክ	<input type="checkbox"/> አዎ <input type="checkbox"/> የለም
	ማቅለሽለሽ	<input type="checkbox"/> አዎ <input type="checkbox"/> የለም
	ውሃ የመጥማት መጨመር	<input type="checkbox"/> አዎ <input type="checkbox"/> የለም
	የሆድ መነፋት	<input type="checkbox"/> አዎ <input type="checkbox"/> የለም
	ሌላ (ይገለጽ)	_____
21.	ከዚህ በፊት የተወሰደ መድሃኒት	<input type="checkbox"/> አዎ <input type="checkbox"/> የለም
	ከተወሰደ መቼ?	_____

**መ. ከህጻኑ ጋር ተያያዥነት ያላቸው ባህሪያትና ጤና ነክ አጋላጭ ነገሮች**

22.	ህፃኑ/ኗ በቤት ውስጥ የሚከባከብበት ሁኔታ	<input type="checkbox"/> በቤት ሰራተኛ <input type="checkbox"/> በወላጅ እናት <input type="checkbox"/> ህጻናት መቆያ <input type="checkbox"/> ሌላ (ይጠቀስ)
23.	የአመጋገብ ሁኔታ	<input type="checkbox"/> የእናት ጡት ብቻ <input type="checkbox"/> የጡት ወተትና ተጨማሪ ምግብ ጋር <input type="checkbox"/> ምግብ ብቻ <input type="checkbox"/> የተዘጋጀ ወተት
24.	የእናት ጡት የጠባበቅ ጊዜ	<input type="checkbox"/> ከ1 ዓመት ያንሳል <input type="checkbox"/> 1-2 ዓመት <input type="checkbox"/> ከ2 ዓመት በላይ
25.	ተጨማሪ ምግብ የተጀመረበት ጊዜ	<input type="checkbox"/> ከ6 ወር በፊት <input type="checkbox"/> 6-12 ወር <input type="checkbox"/> ከ12 ወር በላይ

26.	ልጅን የሚመግቡበት መንገድ ምድን ነው?	<input type="checkbox"/> በእጅ <input type="checkbox"/> በሳህን ወይም በማንኪያ <input type="checkbox"/> በጡጦ
27.	እጅን መቼና ምን ጊዜ ይታጠባሉ?	<input type="checkbox"/> ከምግብ ዝግጅት በፊት <input type="checkbox"/> ልጅን ከመመገብ በፊትና ኋላ <input type="checkbox"/> ከሽንት ቤት በኋላ <input type="checkbox"/> ልጁን ካጸዳሁ (ካካ) በኋላ
28.	እጅን ለመታጠብ ምን ይጠቀማሉ?	<input type="checkbox"/> ሳሙና <input type="checkbox"/> ውሃ ብቻ <input type="checkbox"/> ሌላ-----
29.	ህጻኑ በራሱ ይመገባል?	<input type="checkbox"/> ይመገባል <input type="checkbox"/> አይመገብም
30.	ህጻኑ እጁን/ጁን ከምግብ በፊት ይታጠባል?	<input type="checkbox"/> ይታጠባል <input type="checkbox"/> አይታጠብም
31.	ህጻኑ እነዴት ይጸዳዳል?	<input type="checkbox"/> በዳይፐር <input type="checkbox"/> ሽንት ቤት <input type="checkbox"/> ፖፖ <input type="checkbox"/> ወለሉ ላይ <input type="checkbox"/> በልብስ ላይ <input type="checkbox"/> ሌላ (ጥቀስ) -----
32.	የህኑን ሰገራ እንዴት ነው የሚያስወግዱት?	<input type="checkbox"/> ህጻኑ ሽንት ቤት ይጠቀማል <input type="checkbox"/> ሽንት ቤት <input type="checkbox"/> ቆሻሻ ማጠራቀሚያ ላይ <input type="checkbox"/> ውጭ (መስክ) ይጣላል
33.	ህኑን ያጸዳበትን ወሃ የሚያስወግዱበት የት ነው?	<input type="checkbox"/> ሽንት ቤት <input type="checkbox"/> መስክ <input type="checkbox"/> ቆሻሻ ማጠራቀሚያ <input type="checkbox"/> በውሃ አይጸዳዳም
34.	ህጻኑ የተከተበው የክትባት ዓይነት?	<input type="checkbox"/> ኩፍኝ <input type="checkbox"/> ሮታ <input type="checkbox"/> ሌላ (ይጠቀስ)
35.	ኑትሪሽናል (ውፍረቱ) ደረጃው	<input type="checkbox"/> ዝቅተኛ <input type="checkbox"/> ጤናማ <input type="checkbox"/> ከፍተኛ
36.	ባለፉት 2 ሳምንታት የጉዞ ታሪክ ያለው የቤተሰብ አባል አለ?	<input type="checkbox"/> አለ <input type="checkbox"/> የለም <input type="checkbox"/> ካለ መቼ?____ የት?____

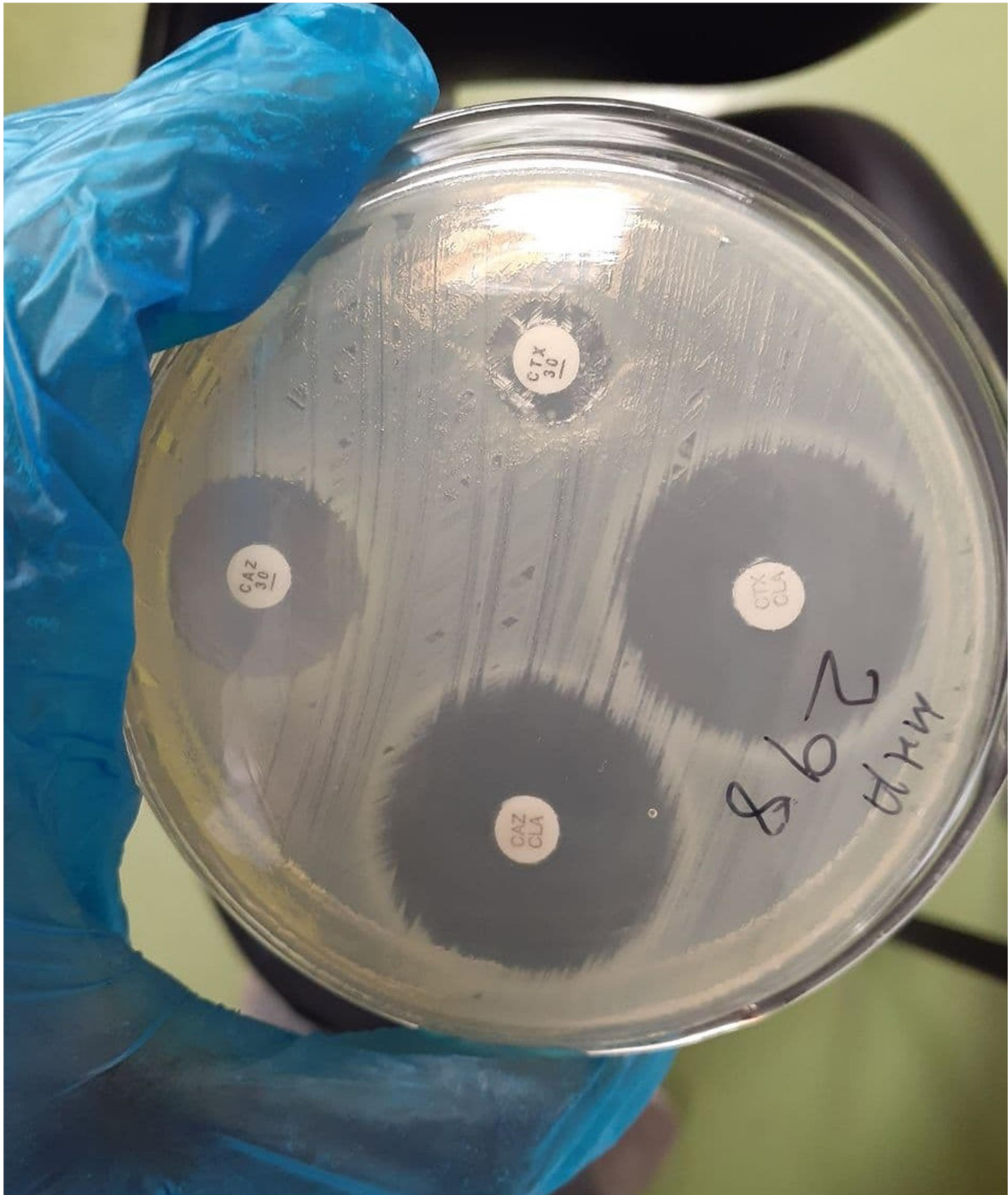
**ሠ. አካባቢያዊ አጋላጭ ነገሮች**

37.	የቤት ባለቤትነት	<input type="checkbox"/> የግል <input type="checkbox"/> ኪራይ <input type="checkbox"/> ሌላ (ይጠቀስ)
38.	ለብቻ ማድ ቤት አለ?	<input type="checkbox"/> አዎ <input type="checkbox"/> የለም
39.	የሽንትቤት አጠቃቀም ሁኔታ	<input type="checkbox"/> በጋራ <input type="checkbox"/> የግል <input type="checkbox"/> የህዝብ
40.	የሚጠቀሙት የሽንት ቤት ዓይነት	<input type="checkbox"/> ዘመናዊ (ሴራሚክ) <input type="checkbox"/> ባህላዊ (ጉድጓድ ብቻ) <input type="checkbox"/> መስክ ላይ <input type="checkbox"/> ሌላ (ይጠቀስ)
41.	የጅ መታጠቢያ በሽንት ቤት አቅራቢያ አለ?	<input type="checkbox"/> አለ <input type="checkbox"/> የለም



42.	ሽንትቤቱ ምን ያክል ጊዜ ይጸዳል?	<input type="checkbox"/> በሚቆሽሽ ጊዜ <input type="checkbox"/> በየ ቀኑ <input type="checkbox"/> ሁለት ጊዜ በሳምንት <input type="checkbox"/> አይጸዳም
43.	ቆሻሻ ማጠራቀሚያ የሚቀመጥበት ቦታ የት ነው?	<input type="checkbox"/> ግቢ ውስጥ <input type="checkbox"/> ከግቢ ውጭ <input type="checkbox"/> ማጠራቀሚያ የለም
44.	የቆሻሻ ማጠራቀሚያው ተገቢ ክዳን አለው?	<input type="checkbox"/> አለው <input type="checkbox"/> ለውም
45.	የቆሻሻ ማጠራቀሚያ ከሌሎች ቆሻሻውን እንዴት ያሰወግዳሉ?	<input type="checkbox"/> ማቃጠል <input type="checkbox"/> መቅበር <input type="checkbox"/> መስክ ላይ ማፍሰስ <input type="checkbox"/> ሌላ (ይጠቀስ)
46.	ቆሻሻ አስወጋጆች በምን ያክል ጊዜ ቆሻሻን ይሰበስባሉ?	<input type="checkbox"/> በየቀኑ <input type="checkbox"/> በየሳምንቱ <input type="checkbox"/> በየወሩ <input type="checkbox"/> የሚሰበስብ የለም
47.	የቤት እንስሳት በግቢ ወስጥ አለ?	<input type="checkbox"/> አለ <input type="checkbox"/> የለም
48.	ካለ ምን ዓይነት እንስሳት ነው?	<input type="checkbox"/> ከብት <input type="checkbox"/> ፍየል <input type="checkbox"/> ውሻ <input type="checkbox"/> ዶሮ <input type="checkbox"/> ሌላ (ይጠቀስ)
49.	የመጠጥ ውሃ ምንጭ	<input type="checkbox"/> ሷሸ ውሃ <input type="checkbox"/> እሽግ ውሃ <input type="checkbox"/> ሌላ (ትቀስ)
50.	የውሃው ምንጭ አቅርቦት እንዴት ነው?	<input type="checkbox"/> ለሰዓታት ይቋረጣል <input type="checkbox"/> ለቀናት ይቋረጣል <input type="checkbox"/> ለሳምንት ይቋረጣል <input type="checkbox"/> ከሳምንት በላይ ይቋረጣል <input type="checkbox"/> አይቋረጥም
51.	ውሃ በምን ያክማሉ?	<input type="checkbox"/> ማጣራት <input type="checkbox"/> ማፍላት <input type="checkbox"/> የለም <input type="checkbox"/> ሌላ (ይጠቀስ)
52.	ውሃን በምን ዓይነት ዕቃ ያስቀምጣሉ?	<input type="checkbox"/> ክዳን ባለው <input type="checkbox"/> ክዳን በሌለው
53.	የውሃ ማጠራቀሚያ ዕቃውን በአድስ ውሃ ለመተካት ሁልጊዜ በማጠብ ባዶውን ይቀመጣል?	<input type="checkbox"/> አወ <input type="checkbox"/> አይደለም

የመረጃ ሰብሳቢ ስም \_\_\_\_\_ ፊርማ \_\_\_\_\_ ቀን \_\_\_\_\_



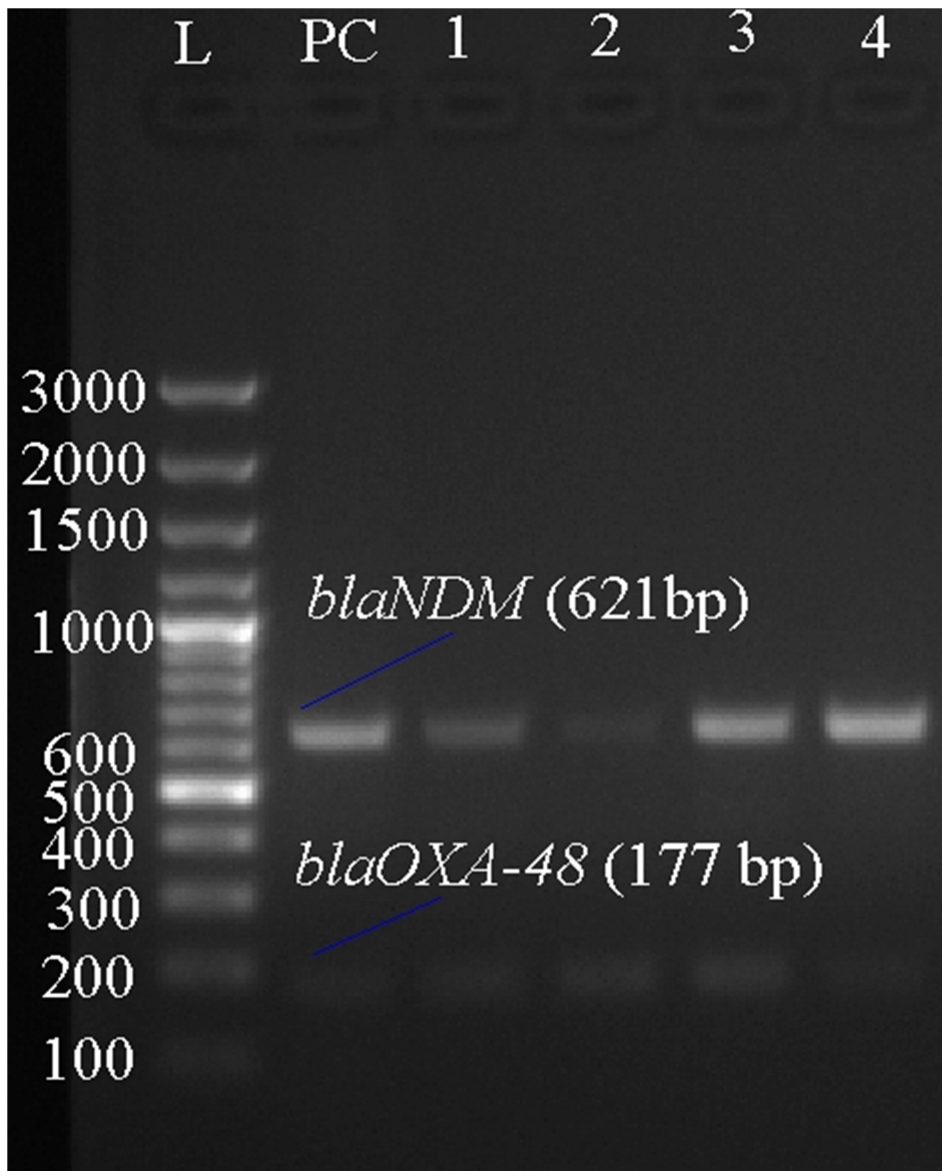
**S1 Figure.** Extended spectrum  $\beta$  lactamase (ESBL) positive strain done using combination disk method. The result shows a  $\geq 5$ mm increase in a zone diameter for either antimicrobial agent tested in combination (CAZ\_CLA=Ceftazidime clavulanate, and CTX\_CLA=Cefotaxime clavulanate) versus the zone diameter of the agent when tested alone (CAZ=Ceftazidime, and CTX=Cefotaxime).

**S1 Table.**  $\beta$ -lactamase genes detected in MDR and ESBL-producing DEC pathotype isolated from under-five children in Addis Ababa and Debre Berhan, Ethiopia.

Isolate ID	Pathotype	$\beta$ -lactamase genes					Study area
		<i>bla</i> <sub>CTX-M</sub>	<i>bla</i> <sub>TEM</sub>	<i>bla</i> <sub>SHV</sub>	<i>bla</i> <sub>NDM</sub>	<i>bla</i> <sub>OXA-48</sub>	
ET-1	ETEC	+	+	+	+	+	AA
ET-2	ETEC	+	+	-	+	+	
ET-3	ETEC	-	+	-	-	-	
ET-4	ETEC	+	+	-	-	-	
ET-5	ETEC	+	+	+	-	-	DB
ET-6	ETEC	+	-	-	-	-	
EA-1	EAEC	+	+	-	-	-	AA
EA-2	EAEC	+	+	+	-	-	
EA-3	EAEC	-	+	+	-	-	
EA-4	EAEC	+	+	+	-	-	
EA-5	EAEC	+	+	-	-	-	DB
EA-6	EAEC	+	+	+	-	-	
EA-7	EAEC	+	-	+	-	-	AA
EA-8	EAEC	+	-	+	-	-	DB
EA-9	EAEC	+	+	+	-	-	AA
EA-10	EAEC	+	+	+	-	-	
EA-11	EAEC	+	+	+	-	-	
EA-12	EAEC	+	-	-	+	+	
EA-13	EAEC	+	+	-	-	-	DB
EA-14	EAEC	-	+	+	+	+	AA
EA-15	EAEC	+	+	-	-	-	
EP-1	EPEC	-	+	-	-	-	AA
EP-2	EPEC	-	+	-	-	-	DB

EP-3	EPEC	-	+	+	-	-	AA
EI-1	EIEC	-	+	+	-	-	AA
EI-2	EIEC	-	+	+	-	-	DB
ST-1	STEC	+	-	-	-	-	DB
ST-2	STEC	+	+	+	-	-	AA
ST-3	STEC	+	+	+	-	-	DB
HB-1	Hybrid	+	-	+	-	-	AA

Abbreviations: EPEC=Enteropathogenic Escherichia coli, ETEC= Enterotoxigenic Escherichia coli, EIEC= Enteroinvasive Escherichia coli, EAEC=Enteroaggregative Escherichia coli, STEC= Shiga-toxin producing Escherichia coli, DEAE=Diffusely adherent Escherichia coli, AA=Addis Ababa, DB=Debre Berhan



**S2 Figure.** Gel image of the carbapenemase genes detected in DEC pathotypes isolated from under-five children, Addis Ababa and Debre Berhan, Ethiopia 2020/21. Notes: Lane L, 100 kb+ DNA ladder; 1 = positive control [*bla*<sub>NDM</sub> (621bp), and *bla*<sub>OXA-48</sub> (177 bp)]; Lanes 1–4 are positive for *bla*<sub>NDM</sub> and *bla*<sub>OXA-48</sub>.