

A young girl with dark hair in a braid, wearing a light green dress, is smiling and pointing to a purple mark on her finger. The background is a solid blue color.

unicef 
for every child

VACCINATION IN YEMEN:

SAVING LIVES, PROTECTING THE ECONOMY

CONTENTS

Vaccines missed, lives lost	4
The risks of not vaccinating children	9
Vaccines protect children from deadly diseases and safeguard future generations	11
What is UNICEF doing to help	13
Female health care workers are the first line of defense against preventable diseases	14
Call to action	15

To download the full report, please visit: www.unicef.org

Published by:
UNICEF Yemen
Email: sanaa@unicef.org

© United Nations Children's Fund (UNICEF), April 2024

Cover photo: A young girl beams with joy, displaying her marked finger after being vaccinated against polio as part of the ongoing precautionary campaign in Aden, Yemen, supported by UNICEF.
©UNICEF/Alfilastini

This page: Health volunteer Naseem holds five-month-old child after vaccinating her as part of a polio vaccination campaign that took place across Yemen in late 2020.
©UNICEF/Marish



Vaccination plays a crucial role in public health, averting more than 4 million child deaths globally every year.¹ By building immunity in individuals, vaccines curtail disease spread, creating healthier and wealthier communities, and pushing toward global health targets such as the Sustainable Development Goals.



Sick children risk malnutrition, and may face hindered mental development, affecting their future productivity.

©UNICEF/Alghabri

VACCINES MISSED, LIVES LOST

In Yemen, far too many young lives are lost to diseases we know how to prevent. In 2022, the country sadly saw the deaths of 41,000 children² from illnesses that could have been treated or avoided altogether. Imagine, every 13 minutes, a family grieves for a child they've lost.

Today, many parts of the world are stopping the spread of illnesses like measles or whooping cough (pertussis) with high vaccine rates. However, Yemen is lagging behind. This is because vaccination rates for young children are alarmingly low, with less than 30% of two-to-three-year-olds fully immunized, risking outbreaks.

Measles, polio and diphtheria, tetanus and pertussis (DTP) immunization rates stand at just 41%, 46% and 55%, far below the threshold needed to ensure herd immunity and safeguard children's health. A combination of a lack of access to health care, vaccine hesitancy and conflict has caused diseases – that were once kept at bay – to make a comeback.

The impact of this poor vaccination coverage is worrying. In 2023, 137 young children under the age of 5 were infected with measles, a highly contagious disease, every day. Too often, these were 'zero-dose' children – children who have not been reached by routine vaccinations.

¹ UNICEF Data, June 2023. <https://data.unicef.org/topic/child-health/immunization/#:~:text=The%20cost%20of%20a%20vaccine,countries%20between%202021%20and%202030.>

² UNICEF and Central Statistical Organization, Yemen Multiple Indicator Cluster Survey 2022–2023, Survey Findings Report.

SITUATION:

Yemen's children are facing outbreaks of diseases that could be stopped by vaccines.

Measles, polio and diphtheria, tetanus and pertussis (DTP) immunization rates stand at just 41%, 46% and 55%, far below the threshold needed to ensure herd immunity and safeguard children's health.



SITUATION IN 2023:

MEASLES

51,000 suspected cases of measles in 2023

An average of **137** children under the age of 5 infected every day

WHOPPING COUGH (PERTUSSIS)

8,679 cases reported in 2023, with **11** children dying from the disease.

DIPHTHERIA

Diphtheria killed **122** children out of 2,055 suspected cases reported in 2023. This means that 7 out of every 100 sick children died from diphtheria.



POLIO

271 cases as of the end of December 2023, with **88.5%** (240 cases) recorded in the northern governorates.

Today, some diseases thought to be in the past, like polio, are returning, especially in the northern governorates. However, the number of children infected in the south is low as vaccination campaigns in the southern governorates take place to fight against polio. Yet, one child missed by these efforts is too many. Vaccines can save lives, but only if they reach every child.

We need to support the health care system and provide resources to reach remote areas. We also need to educate communities about the importance and safety of vaccines. No child's life should be cut short by illness we can easily prevent.

YEMEN'S IMMUNIZATION COVERAGE IS STILL LOW AND NEEDS TO BE IMPROVED SIGNIFICANTLY.

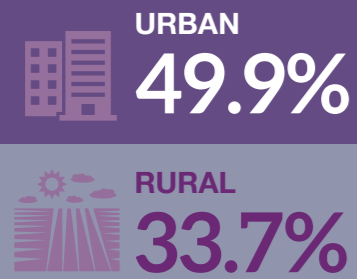


> It's time to change this story. We must ensure that every child in Yemen has access to vaccines, regardless of where they live.

CHILDREN WHO ARE FULLY VACCINATED³



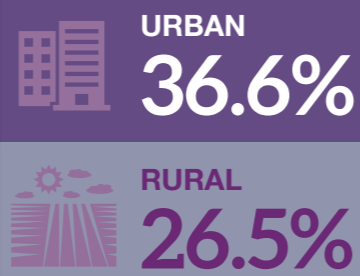
Children between 1 to 2 years of age who have received all the basic vaccinations



TOTAL 38.3%



Children between 2 and 3 years of age who have received all the basic vaccinations



TOTAL 29.5%

³ UNICEF and Central Statistical Organization, Yemen Multiple Indicator Cluster Survey 2022–2023, Survey Findings Report.

IMMUNIZATION IS ONE OF THE BEST THINGS MONEY CAN BUY



PREVENTION COSTS LESS THAN CURE:

Giving vaccines to prevent illness can save a lot of out-of-pocket money for the family – about

16 times the cost of vaccination!⁵



FUTURE ECONOMIC BENEFITS:

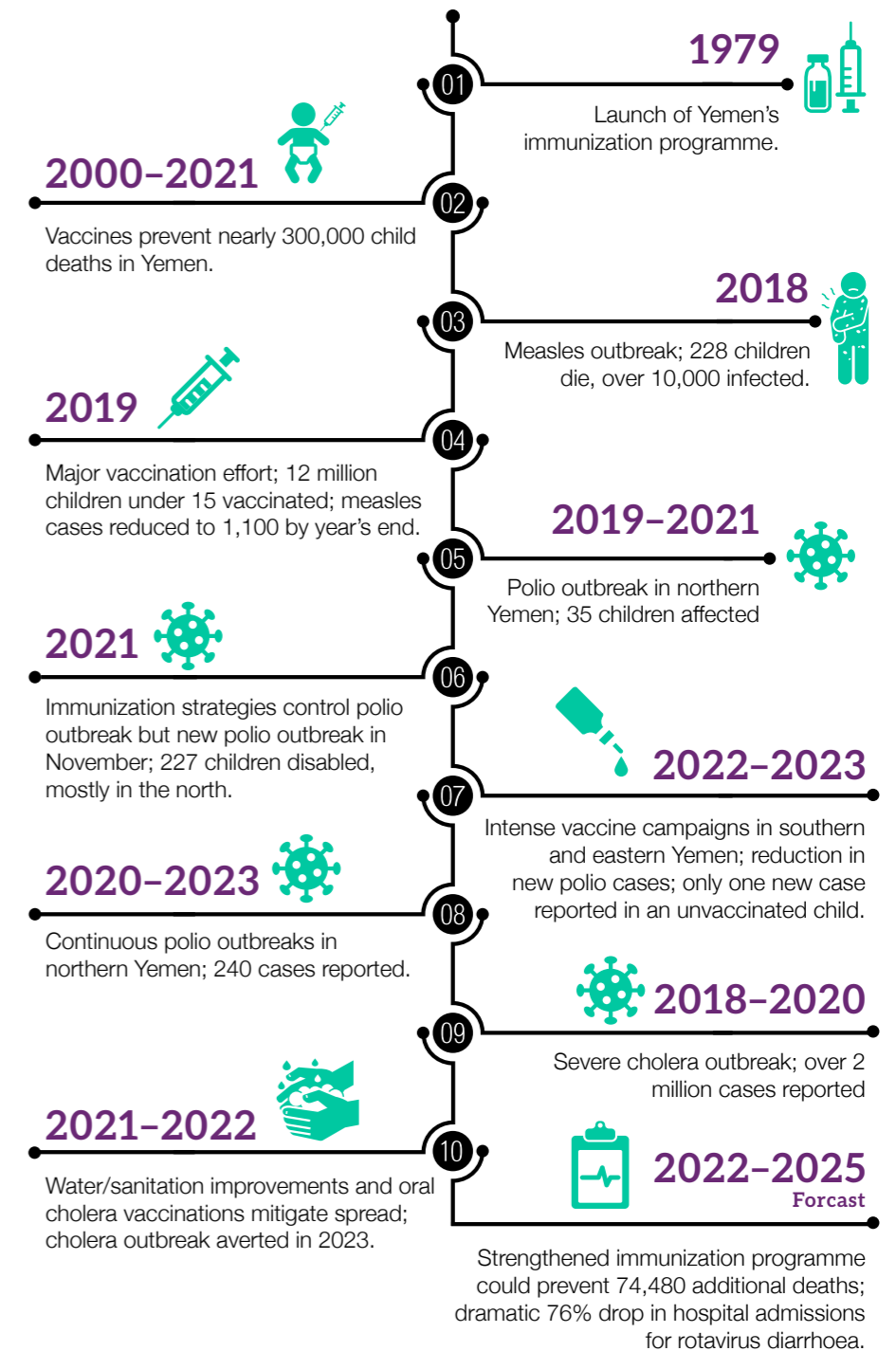
Every dollar spent on vaccination delivers a return on investment of **\$20** in low- and middle-income countries.⁶

⁴ Ibid.
⁵ Sachiko Ozawa, Samantha Clark, Allison Portnoy, Simrun Grewal, Logan Brenzel and Damian G. Walker 'Return On Investment from Childhood Immunization In Low- And Middle-Income Countries', 2011-20, *Health Affairs*, 35, no.2 (2016):199-207.
⁶ UNICEF report on immunization, July 2023.

VACCINES ARE COST-EFFECTIVE AND YIELD HIGH RETURNS

Economically, vaccines pack a punch: they are cost-effective and yield high investment returns. Vaccines provide significant savings by avoiding the direct and indirect costs associated with treating preventable diseases and possible long-term disability. UNICEF data shows that investing US\$1 in childhood vaccination can potentially yield a return on investment of US\$20 in low- and middle-income countries between 2021 and 2030.⁴ Vaccines, therefore, strike a rare balance, being a cornerstone of both health and economic savvy.

VACCINES HAVE BEEN SAVING LIVES IN YEMEN





Vaccines stored in a solar refrigerator are inspected by a health worker at a health facility in Bani Alhareth, Sana'a. UNICEF is the lead agency in supporting the cold chain system in Yemen. During the last five years, UNICEF provided more than 2,400 solar refrigerators to health facilities across Yemen.

©UNICEF/Alaidroos

VACCINES ARE SAFE

The vaccines arriving in Yemen have been strictly evaluated for safety, ensuring their reliability when they reach communities. The World Health Organization prequalifies these vaccines, meaning they meet international standards. An investment in cold chain systems that store and transport vaccines at the right temperature in special refrigerators and freezers ensures vaccines stay potent until use. So far, 82% of the health facilities in Yemen have functional refrigerators, including solar-powered ones. In monitoring vaccinations, most side effects have been found to be mild and short-lived, and no severe vaccine reactions have been reported in Yemen thus far.

STRONG VACCINATION EFFORTS HAVE STRENGTHENED YEMEN'S HEALTH SYSTEM

Yemen's health ministry, with support from partners, has made vaccinations a key part of improving its health system. Using vaccination as an entry point, UNICEF and its partners invest significantly, allocating around US\$168 million annually to sustain the functionality of almost 3,000 health centres in Yemen, with plans to extend coverage to all 5,000 centres, and supporting over 15,000 workers with regular stipends. The World Health Organization contributes US\$32 million for training and emergency responses, collaborating with donors to enhance health services. Gavi, focusing on children's vaccine access, contributes over US\$66 million, preventing the complete collapse of the health system in Yemen. The risk of losing these funds underscores the potential consequences for the stability and functionality of Yemen's health infrastructure.

Yemen has also been praised worldwide for its successful strategy of integrated public health outreach, which continues to vaccinate many mothers and children.



> **Yemen has also been praised worldwide for its successful strategy of integrated public health outreach, which continues to vaccinate many mothers and children.**

THE RISKS OF NOT VACCINATING CHILDREN

In nations burdened by conflict, poverty, and under-resourced services such as Yemen, the failure to vaccinate can significantly harm children, families, and communities, despite vaccines being a key preventative measure against diseases.

The long-term health risks for unvaccinated children can be severe and even life-threatening. Vaccines protect against diseases such as polio, which can cause permanent paralysis, measles, which can result in brain damage and death, and diphtheria, which can cause severe respiratory difficulties. Skipping vaccines puts children at risk of not just getting sick but also long-term issues like disabilities that can affect their whole life.

Lower vaccination rates in Yemen can lead to disease outbreaks that **stress its already struggling health care system** by requiring costly medical treatment, surveillance, and mass vaccination campaigns to restore herd immunity.

Vaccine-preventable diseases can cause a **financial domino effect**; parents miss work to nurse sick children, reducing productivity and income, while hefty long-term health care cost can fuel poverty. Sick children miss school, risk malnutrition, and may face hindered mental development, affecting their future productivity.



> **Skipping vaccines puts children at risk of not just getting sick but also long-term issues like disabilities that can affect their whole life.**

A father holds his child and smiles after she received measles and rubella vaccine during a nationwide vaccination campaign in 2019.

©UNICEF/ Alaidroos



VACCINES PROTECT CHILDREN FROM DEADLY DISEASES AND SAFEGUARD FUTURE GENERATIONS



Fadhel Ali Hassan, 25, a father of two children, Aden Governorate.



Three-year-old Jumu'ah Fadhel lost her twin sister to measles, Aden Governorate.



Jumu'ah Fadhel getting her vaccines.



Health care worker, Entisar Ali, with Jumu'ah's mother and her baby, Ali.

All photos: ©UNICEF /Hayyan

“My greatest regret is losing my daughter to a disease that could have been prevented with a free vaccine,” says Fadhel Ali Hassan, a feeling shared by far too many parents in Yemen.

Although the nearest health centre is only half an hour away from Fadhel's home, his twin baby girls were unvaccinated and contracted measles. As their health deteriorated rapidly over three days, and their painful skin rashes and fevers intensified, only one of them survived the trip to the hospital.

Measles is a highly contagious viral disease that commonly affects children. Measles causes painful skin rashes, sore eyes, fever, stiff muscles, and severe coughing for almost everyone who contracts the virus. Children with malnutrition are the most vulnerable.

“Our oversight, negligence, and failure to vaccinate our children exposed them to a deadly disease and we are so sorry that it happened. We have learned the most painful lesson that life could have taught us. We had to watch our baby die before our eyes, and there was nothing we could do at that point,” says Fadhel.

Vaccination campaign

Between January and July 2022, around 1,400 children in Yemen were suspected of having measles, and 15 died of the disease in seven governorates, including Aden.

Amid this measles outbreak and a polio outbreak, UNICEF and its partners supported the Ministry of Public Health's vaccination campaign, administering polio vaccines to children aged 0 to 10 years and measles vaccines to those aged 6 months to 10 years.

Education can save lives

Health literacy plays a significant role in reducing illness within a population. When people are informed about health matters, they can make choices that decrease the incidence of disease. In Yemen, enhancing the understanding of health can lead to transformative shifts in societal habits and cultural perceptions with lasting positive effects on the collective health of the community.

Educating the public about vaccines serves multiple purposes: it deconstructs prevalent misinformation, fosters more receptive attitudes toward immunization, and prepares individuals to better manage any adverse reactions that might arise post-vaccination. Thus, well-disseminated vaccine information can be crucial in bolstering the efficacy of public health initiatives.

WHAT IF CHILDREN DON'T GET VACCINATED?

To demonstrate what can happen to a family, who did not vaccinate their child, imagine that Sanaa and Mohammed are a couple, who welcomed their second child, Waed in February 2023.

Their first child, born five years earlier in 2018, was vaccinated according to the recommended schedule.

However, for Waed, they chose to diverge from this path and not get him vaccinated.

This decision increases Waed's susceptibility to common childhood illnesses and disability compared to his older brother, who received a full course of vaccinations.

IF WAED GETS MEASLES, THIS IS WHAT HE, HIS FAMILY AND HIS COUNTRY AS A WHOLE ARE LIKELY TO FACE.



The family will need to pay for treatment and other associated costs. Depending on Waed's case, the expenses can reach hundreds of dollars, whereas the measles vaccine costs less than US\$1 per child.⁷



Little Waed could become blind or deaf or get severe pneumonia, or if the complications from measles are severe, he could even die.



Waed's parents would spend time in hospital, a time that they could have spent working or looking after their other kids, who are now left at home alone.



Waed could develop diarrhoea and mouth wounds, making him lose his appetite at time when he needs good nutrition to recover properly. This could lead to malnutrition and weaken his immune system, thus increasing his susceptibility to other infections.



If other children around Waed are not vaccinated, his infectious disease could spread to 9 out of 10 other children.



Measles and other repeated infections could keep Waed out of school and set him back educationally.



Repeated infections and malnutrition could affect Waed's mental growth and make it hard for him to learn, affecting his future and Yemen's development.

⁷ WHO data; <https://www.who.int/news-room/fact-sheets/detail/measles>

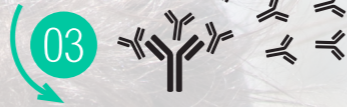
HOW VACCINES HELP TO PROTECT OUR HEALTH



01 INVASION ALERT:
When a germ (like a virus or bacteria) invades your body, it can cause illness.



02 IMMUNE RESPONSE:
Your immune system responds to this invasion. It's like your body's army, fighting off the intruders.



03 MEMORY CELL CREATION:
While fighting off the germs, your immune system creates memory cells, which remember how to defend against that particular germ in the future.



04 INTRODUCTION VIA VACCINE:
A vaccine introduces a safe component of a germ (like a dead or weakened version, or just a piece of it) into your body without making you sick.



05 TRAINING THE TROOPS:
This safe component acts as a training exercise for your immune system. It learns how to fight the germ without the risk of a full-blown infection.



06 NO REAL THREAT:
Because the vaccine does not contain the live germ, it does not cause disease in the vaccinated person.



07 MEMORY CELL REINFORCEMENT:
As the immune system trains to fight the germ, it creates new memory cells specifically tailored to that germ.



08 EFFICIENT RESPONSE:
After vaccination, if the full-strength, live germ ever invades your body, your immune system recognizes it immediately.



09 QUICK ACTION:
Your immune system responds faster and more effectively, because the memory cells are ready to instruct your immune forces to attack straight away.



10 PROTECTION:
This quick and strong response often prevents the germ from causing disease or leads to a milder form of the disease, which is a sign of immunity.



All vaccines that arrive in Yemen have been carefully checked and approved for safety by the World Health Organization.

WHAT IS UNICEF DOING TO HELP

UNICEF is working with the Yemeni government to make sure children get the vaccines they need, especially after many missed out during the conflict and COVID-19 pandemic.

Firstly, UNICEF is helping the government to run a catch-up campaign. This catch-up provides a second chance for children who did not get their vaccines on time. The goal is to make sure they receive those missed shots.

Secondly, UNICEF is supporting the government to restore vaccination rates back up to what they were before or even better. We want to make sure that children born in 2023 and 2024 are vaccinated as they should be, based on the rates seen in 2019.

Lastly, we're working to strengthen the national immunization programme. This involves making improvements within primary health care – by training health workers, making sure vaccines are available and stored correctly, and keeping track of who has been vaccinated. This helps the community bounce back from any setbacks and makes it easier to reach all the children with vaccines in the future, including those who have not received any vaccines.

UNICEF's plan is comprehensive. It is not just about vaccinating, but making sure the whole system works better so every child has a chance to be healthy.



We want to make sure that children born in 2023 and 2024 are vaccinated as they should be.

Ministry of Health staff check the Vaccine Vial Monitors at Aden airport as a part of a quality control inspection. UNICEF is the main provider of childhood vaccines in the world. In 2023, UNICEF delivered more than 25 million doses of vaccines to Yemen to ensure vaccine availability for all children.

© UNICEF/ALfilastini



FEMALE HEALTH CARE WORKERS ARE THE FIRST LINE OF DEFENSE AGAINST PREVENTABLE DISEASES

“As the mother of a young child, one of the worst moments of my life happened when I met a baby girl who had gone blind from measles. The fact that it was preventable and was in part the result of Yemen’s deteriorating health care system is what motivated me to become a vaccinator,” said Ghadah

Obaid, a health worker from Aden, Yemen.

In a country with an alarming number of preventable childhood diseases and deaths, immunization programmes can make a significant difference to families and entire communities.

UNICEF ensures that the most vulnerable populations – women and children – are protected against the spread of diseases and viruses through vaccine management activities and community engagement sessions.

Vaccinators at the heart of Yemen’s health care system

In the immunization department of Dar Sa’ad Medical Compound, in Aden, Ghadah Obaid scurries down the hallway to administer vaccines to women and children, offering them reassurance about vaccine safety and efficacy; and encourages them to tell their families and friends about the programme.

Each day, the centre vaccinates approximately 35 children, but sometimes that number jumps to as many as 100 when there is an influx of newborns in the region.

Despite having to travel long distances to reach the most vulnerable populations, Ghadah takes part in door-to-door immunization campaigns to ensure that no child slips through the cracks. No matter how extreme the temperature is Ghadah has the full support of her family – especially her husband, Ehab.

“Ghadah’s job is a calling more than an occupation,” he says. “I encourage her to show up every day because she is so passionate about it, and she has my full respect. If she arrives home late, we manage to eat whatever is available at home. I want to share a message to other husbands whose wives work in health care: support them and help them to do the right thing. Our entire community – and future



Ghadah, 51, is a health worker actively engaged in vaccinating children in Yemen to protect them from childhood diseases.



Ghadah provides oral polio vaccines to children in the city of Aden, June 2022. Children should have access to vaccines, regardless of where they live. No child’s life should be cut short by illness we can easily prevent.

All photos: ©UNICEF /Hayyan

generations – stand to gain from their contributions.”

A humanitarian mission

Although Ghadah has noticed a significant uptick in the number of people being vaccinated, she still has to dispel stigmas, rumours, and myths about vaccine safety and efficacy daily. “Over the past 11 years, a big part of my role has been helping Yemenis to understand that many diseases and epidemics could be eliminated, and the mortality and morbidity rates could be reduced,” Ghadah explains.

The power of partnerships

During a measles outbreak in 2023, Yemen reported over 51,000 cases. In response, an integrated measles campaign was conducted in southern governorates, with over 1.15 million children between 6 months and 5 years of age vaccinated and over 1 million children receiving vitamin A supplements.

CALL TO ACTION



Children wait to be vaccinated in Dhamar, Yemen during a UNICEF-backed mobile measles and rubella vaccination campaign in 2019.

© UNICEF/ALqafalah

While much has been done to improve vaccination coverage in Yemen and ensure children are kept healthy and protected, it is essential to bridge the gaps and bring life-saving vaccines to all corners, leaving no child behind. We are appealing for the following action:

TO THE AUTHORITIES IN YEMEN,

Implement the **National Child and Adolescent Health Strategy** focusing on immunization by:

Securing political commitment: Mobilize robust and sustained political support at all levels to ensure Yemeni children receive vaccinations to protect them from infectious diseases.

Employing locally-tailored strategies: Launch community-driven, culturally-tailored campaigns to encourage families to prioritize children’s access to primary health care and vaccinations, especially in hard-to-reach areas.

TO THE COMMUNITY AND PARENTS,

Strengthen community engagement: Start community-driven social mobilization activities to encourage every family to get their children vaccinated, stressing the importance of bringing children to primary health care facilities, and use local leaders for culturally relevant outreach.

TO THE TECHNICAL LINE MINISTRIES,

Work together across sectors: Build multi-sector partnerships, including across education, social services and other sectors, to support comprehensive immunization and health promotion efforts efficiently. Strengthen partnerships for maximum impact and resource optimization.

To the Ministry of Finance: Allocate domestic resources to immunization programmes and primary health care to get the highest return on investment. Investing in immunization for children is also an investment in the future of Yemen.

TO THE INTERNATIONAL HEALTH COMMUNITY,

Sustain investments in immunization and health system: Invest in sustainable and necessary technical, financial, and material resources to strengthen the primary health care and community health system. Empower communities, establish a robust link between formal health systems and communities, and prioritize sustainability.

Follow us on



<https://www.facebook.com/unicefyemen>



https://twitter.com/UNICEF_Yemen/status/1323559001251086337



<https://www.youtube.com/user/UNICEFYemenwebsite>



https://www.instagram.com/unicef_yemen/

<https://www.unicef.org/yemen/>