

It is estimated that, around the world, more than 30 000 women die each year as a result of severe infections when giving birth. Even more newborn babies—more than 400 000 a year—lose their lives to severe infections. The vast majority of these deaths occur in developing countries. The situation will get a lot worse if and when antibiotics that treat these infections become less effective.

In high-income countries, maternal and newborn deaths from infection are now rare. The early 20th century saw massive improvements in hygiene and infection control, and maternal mortality rates started to fall. Widespread use of antibiotics to treat infection when it occurred pushed mortality rates down further.

There has been progress in developing countries too. Recent efforts to prevent infections, through better water, sanitation and hygiene, and widespread use of antibiotics have contributed to significant improvements in child and maternal mortality. But these gains are fragile.

The power of antibiotics has led people to overuse them. To take too many antibiotics, for the wrong reasons. And to feed them to animals and fish to boost food production. The more antibiotics are used, the more bugs are exposed to them, the quicker they become resistant, and the drugs stop working. And no one is developing new antibiotics to replace those that are losing their power.

The situation today

While there is very little good data available on the prevalence of infections that are resistant to antibiotics, current estimates suggest that more than 200 000 newborns die each year from infections that do not respond to available drugs.

Studies based mostly on data from larger hospitals—where there is more risk of bacteria circulating that are resistant to antibiotics—suggest that in about 4 of every 10 newborns with severe infections, there is resistance to standard treatments.

Premature babies are at particular risk of severe illness and death from blood infections.

Neonatal intensive care units around the world have had to close because of contamination with highly resistant strains. Antibiotic-resistant infections spread rapidly in overcrowded hospital nurseries, with poor hygiene and widespread antibiotic use.

Giving birth can be a risky time for mothers and babies. Their immune systems are not at full strength so there is a much higher risk of getting sick, either from bugs that the mother is already carrying, or from infections that mother or baby pick up in hospital. When health facilities lack toilets and water for washing and are overcrowded and unhygienic, the risks are very much higher.

Fighting infection

The most important thing to do is to stop the spread of infection. This means ensuring all facilities have basic water and sanitation services and really good hygiene, cut down overcrowding, and avoid keeping mothers and babies in hospital any longer than necessary. These are good practices for a number of reasons, but even more important if antibiotics stop working.

It means only using antibiotics when they are needed. Today, it is estimated that less than half of the antibiotics taken by humans are actually needed, and use in animals is even higher. It also means getting better data, so we know which drugs are still effective.

WHO has developed a **Global action plan on antimicrobial resistance** to:

1. Improve awareness and understanding of the problem
2. Strengthen the knowledge and evidence base
3. Reduce the incidence of infection
4. Optimize the use of antimicrobials
5. Make the economic case for investment in country capacity to address the issue, as well as research and development of new medicines, vaccines and diagnostic tools.

Relevant WHO recommendations

1. At the time of delivering a baby, antibiotics should only be given routinely to women who:

- are going to have a caesarean section
- go into labour preterm (before 37 weeks of pregnancy) and their waters have broken
- are in labour and have group B strep (to stop the baby from becoming infected)
- have chorioamnionitis (inflammation of fetal membranes due to a bacterial infection), often associated with prolonged labour
- need to have the placenta removed manually after delivering their baby
- have a severe tear in their perineum (area between the vagina and anus)
- have endometritis (infection in the lining of the uterus) after giving birth.

If possible, health workers should take samples from patients for bacterial testing in a laboratory, and ideally, the choice of which antibiotic to use should be informed by data on local patterns of drug resistance. *See: Recommendations for prevention and treatment of maternal peripartum infections (WHO, 2015): www.who.int/reproductivehealth/publications/maternal_perinatal_health/peripartum-infections-guidelines*

2. Newborn babies with severe infections should get the care they need:

- Newborns that have signs of a severe blood infection (sepsis) should be treated with antibiotics
- Where possible, a health worker should take a blood sample from the baby and send for testing before starting antibiotics.
- If the baby's condition doesn't improve in 2–3 days, their antibiotic should be changed, or they should be referred for specialized care.

See: Recommendations for management of common childhood conditions (WHO, 2012): www.who.int/maternal_child_adolescent/documents/management_childhood_conditions

3. All mothers and babies should get clean care:

- wash hands at key moments
- wear gloves
- sterilize equipment
- ensure the birthing area is clean
- dispose of waste safely
- deal with contaminated laundry

See: Pregnancy, childbirth, postpartum and newborn care: Guide for essential practice (WHO/UNFPA/UNICEF/ World Bank, 3rd ed, 2015): www.who.int/maternal_child_adolescent/documents/imca-essential-practice-guide

4. Hand hygiene is essential:

All health workers, caregivers and people involved in patient care must clean hands at 5 key moments:

- 1) before touching a patient
- 2) before clean/aseptic procedures
- 3) after body fluid exposure risks
- 4) after touching a patient
- 5) after touching patient surroundings

Hands should be cleaned by:

- using alcohol-based hand rub (faster, more effective, and better tolerated by skin than washing with soap and water) if hands are not visibly dirty
- washing with soap and water when hands are visibly dirty, and after using the toilet

See: Guidelines on hand hygiene in health care (WHO, 2009): www.who.int/gpsc/5may/tools/9789241597906

5. All health facilities need at least basic water and sanitation services:

- sufficient, safe, accessible water for drinking, preparing food, personal hygiene, medical activities, cleaning and laundry
- adequate toilets
- safe, efficient disposal of wastewater
- safe management of health-care waste
- regular, effective cleaning of laundry and surfaces.

See: Essential environmental health standards in health care (WHO, 2008): www.who.int/water_sanitation_health/hygiene/settings/ehs_hc