UN health agency finds high levels of antibiotic resistance to world's most common infections

29 January 2018 – Antimicrobials have been a driver of unprecedented medical and societal advances, but their overuse has resulted in antibiotic resistant bacteria, with the World Health Organization (WHO) reporting new surveillance data on Monday which reveals widespread resistance to some of the world's most common infections, including *E. coli* and pneumonia.

"The report confirms the serious situation of antibiotic resistance worldwide," Dr. Marc Sprenger, director of WHO's Antimicrobial Resistance Secretariat, said at the launch of the agency's new Global Antimicrobial Surveillance System (GLASS)

The most commonly reported resistant bacteria were *Escherichia coli*, *Klebsiella pneumoniae*, *Staphylococcus aureus* and *Streptococcus pneumoniae*, followed by *Salmonella spp*.

Although the system does not include data on the resistance of *Mycobacterium tuberculosis*, which causes tuberculosis, WHO has been tracking and providing annual updates on it since 1994, in the Global tuberculosis report.

Among patients with suspected bloodstream infection, the proportion that had bacteria resistant to at least one of the most commonly used antibiotics ranged widely – from zero to 82 per cent – between different countries.

Resistance to penicillin, which has been used for decades to treat pneumonia, ranged from zero to 51 per cent among reporting countries. And between 8 to 65 per cent of *E. coli* associated with urinary tract infections presented resistance to the antibiotic commonly used to treat it, ciprofloxacin.

"Some of the world's most common – and potentially most dangerous – infections are proving drug-resistant," Dr. Sprenger observed.

"And most worrying of all, pathogens don't respect national borders," he added.

To date, 25 high-income, 20 middle-income and 7 low-income countries are enrolled in WHO's Global Antimicrobial Surveillance System. For the first report, 40 countries provided information on national surveillance systems with 22 also providing data on antibiotic resistance levels.

"WHO is encouraging all countries to set up good surveillance systems for detecting drug resistance that can provide data to this global system," Dr. Sprenger asserted.

The quality and completeness of data in this first GLASS report vary widely. Some countries face major challenges in building their national surveillance

systems, including a lack of personnel, funds and infrastructure.

"The report is a vital first step towards improving our understanding of the extent of antimicrobial resistance. Surveillance is in its infancy, but it is vital to develop it if we are to anticipate and tackle one of the biggest threats to global public health," explained Dr. Carmem Pessoa-Silva, WHO surveillance system coordinator.

WHO is supporting countries in setting up national antimicrobial resistance surveillance systems to produce reliable, meaningful data, with GLASS helping to standardize data collection for a more complete picture of patterns and trends.

Solid drug resistance surveillance programmes in tuberculosis, HIV and malaria have been functioning for years — estimating disease burden, planning diagnostic and treatment services, monitoring control interventions effectiveness and designing effective treatment regimens to address and prevent future resistance. GLASS is expected to perform a similar function for common bacterial pathogens.