

## PRESS RELEASE

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**Spotlight on the NDM-1 “superbug” highlights the long-standing but increasingly alarming situation of antibiotic resistance globally**

**7 May 2011, MILAN:** At the world’s largest conference on infectious diseases – the European Congress of Clinical Microbiology and Infectious Diseases (ECCMID) which opens today – a special Symposium on NMD-1 (New Delhi metallo-beta-lactamase) will focus on the implications of the increasing detection of this gene, which makes bacteria highly resistant to almost all known antibiotics. This is part of an alarming trend of antibiotic resistance that threatens to turn back the clock on years of progress following the discovery of antimicrobials, which revolutionised human health globally.

“We welcome the recent spotlight that NDM-1 has put on a long-standing but increasingly alarming situation with growing antibiotic resistance”, said Professor Giuseppe Cornaglia, Co-Chair of the NDM-1 Symposium and President of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) who organize ECCMID annually. “We have been concerned for more than 10 years that antibiotic resistance is reaching unprecedented and worrying levels. The problem of resistance is a complex one that will only be effectively tackled through coordinated and extensive international effort, not least stricter use of antibiotics and much improved surveillance,” stressed Professor Cornaglia.

First detected three years ago in Sweden in a patient treated in India, NDM-1 has now spread around the world with cases being detected in particular in the Indian Subcontinent, as well as the UK, Continental Europe, North America, Australia and the Far East. NDM-1 is one of several so called “superbugs”, since this resistant trait confers resistance to carbapenem antibiotics, which is great cause for concern because they are some of the most powerful weapons used for hard-to-treat infections. The discovery of new resistant genes and bacteria, such as NDM-1, comes at a time when there is almost a non-existent drug pipeline as pharmaceutical companies see a limited financial return on such research and development (R&D), and because it is a notoriously difficult area to make discoveries in.

“Bacteria carrying the NDM-1 gene include *Escherichia coli*, which is a natural part of the gut flora of all human beings. Therefore there is potential for widespread carriage of bacteria resistant to almost all antibiotics, with the prospect that in vulnerable people, common infections —such as urinary tract infections, pulmonary infections, septicaemia, peritonitis and device- associated infections — may become untreatable,” said Professor Patrice Nordmann, Chief of the Department of Bacteriology-Virology at the Bicêtre Hospital and Head of the INSERM unit “Emerging Resistance to Antibiotics” in Paris, who is Co-Chairing the NDM-1 symposium at ECCMID.

According to Professor Nordmann, “Europe and other regions need to be prepared to manage the risks of NDM-1 through screening of patients transferred from hospitals abroad, isolation of carriers and detection of infected patients who have bacteria with reduced susceptibility to carbapenems, the most powerful class of antibiotics we have.”

Two key NDM-1 studies were published in *The Lancet Infectious Diseases* journal generating much media and academic attention. In a paper published in August 2010, it was suggested that NDM-1 could be spread by people travelling to the Indian subcontinent for medical treatment.

Worryingly, in the latest findings just published in *The Lancet Infectious Diseases* in April 2011, Walsh, Livermore and colleagues found NDM-1 in environmental samples in New Delhi and in water supplies that are used by locals for drinking, washing and cooking, indicating that this is not only found in hospitals, but in the environment as well. These findings explain the community-acquired acquisition of NDM-1-producing bacteria reported by Laurent Poirel, Patrice Nordmann and colleagues in *The Lancet Infectious Diseases* last December.

“NDM-1 joins a growing list of similar antibiotic-resistance mechanisms, but it is of particular concern because of its ability to confer resistance to almost all antibiotics and to spread to a variety of bacterial species, including those that can cause common infections,” said John McConnell, Editor of *The Lancet Infectious Diseases*.

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