

Small numbers of patients with drug-resistant TB may account for high proportion of new infections

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Inadequate treatment of antibiotic-resistant tuberculosis (TB) can leave patients highly infectious, and small numbers of such patients may drive transmission of the disease in the very health care facilities intended to treat it, according to research published in *PLoS Medicine*.

Every year, more than nine million people develop tuberculosis—a contagious infection usually involving the lungs—and nearly two million people die from the disease. The bacteria that cause TB are spread in airborne droplets when people with the disease cough or sneeze.

Adapting a detection system used in classic 1950s experiments, Rod Escombe of Imperial College London, and colleagues in Perú and the UK investigated airborne infectious tuberculosis in a hospital in Lima. By venting air from an HIV-tuberculosis ward through a guinea-pig enclosure on the hospital roof, and genetically matching the strains of TB infecting the guinea pigs to those cultured from patients, the investigators were able to determine which patients and strains accounted for most of the guinea pig infections.

They found that only 8.5% of the 118 admissions to the HIV-TB ward during the 505-day study accounted for 98% of the guinea pig TB infections. Ninety percent of the infections were traced to patients with TB that was resistant to multiple antibiotics, and a small number of such patients were found to have coughed out very high numbers of infectious

bacteria.

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