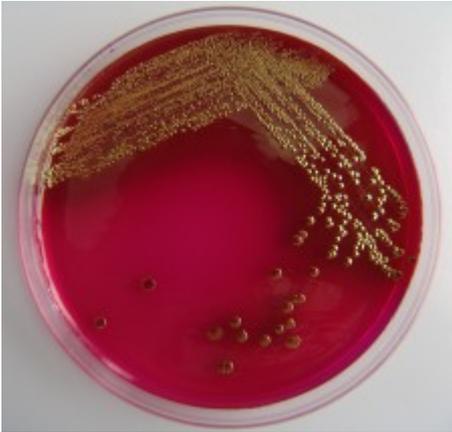


# Drug-resistant bacteria not just from hospital stays

By ACSH Staff — April 24, 2014



The emergence of antibiotic-resistant bacteria, in particular

MRSA, a strain of *Staphylococcus aureus* (SA) resistant to methicillin (a member of the penicillin class of drugs) has concerned physicians and caused hospitals to review and revamp their hygienic procedures. And warnings abound about the possibility of hospital patients being infected with this and other such resistant bugs patients are urged to check whether their caregivers are washing their hands between patients, for example.

A new [study](#) <sup>[1]</sup> published in the Proceedings of the National Academy of Sciences, however, indicates that hospitals are not the sole sources of possible infection. Dr. Anne-Caitlin Uhlemann from the Columbia University Medical Center, and colleagues from the University of Cambridge and the Wellcome Trust Sanger Institute, both in Cambridge, UK, sequenced the genomes of SA bacteria obtained from households in northern Manhattan, NYC.

Using nearly 400 samples of MRSA, collected from 161 people between 2006 and 2011, the researchers compared their genetic makeup with those of SA (and possibly MRSA) collected from healthy people. In addition to the microbiological information, they also gathered information on subjects medical histories, antibiotic use and home locations, which they used to define a network of bacterial transmissions.

By examining the genetic similarity between SA samples, Dr. Uhlemann and colleagues estimated that the resistant strains developed around 1993. They also found that in some households there was more than one such strain. Quoted in the magazine Nature, Dr. Uhlemann [commented](#) [2] that [i]t suggests some kind of outside reservoir, such as a link to a hospital or a gym. It seems that the [resistant] strain spread in public spaces first, but it is now prevalent in households as well as hospitals. Further studies are needed to evaluate how hospitals might be involved in spreading the bacteria back into the community. In addition, the team found that nearly two-thirds of their samples were partially or fully resistant to fluoroquinolone antibiotics, which are often prescribed (inappropriately) for routine bacterial infections (fluoroquinolones are unrelated to methicillin, so that class is an additionally-resistant one).

ACSH s Dr. Gilbert Ross had this to say Obviously, while hospital patients must still depend on their care providers to be vigilant about sanitary practices, this study suggests that even physicians without inpatient practices must be more cautious about antibiotic prescriptions and administration to help prevent the spread of resistance to these bacteria.

On a related note, antibiotics expert and ACSH advisor, Dr. David Shlaes is mighty upset with Astrazeneca s decision to sell off its antibiotic research unit probably the most productive of all drug companies. You [can](#) [3] read about it in his blog, *Antibiotics-The Perfect Storm* [here](#) [3].

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**Links**

[1] <http://www.pnas.org/content/early/2014/04/17/1401006111.abstract?sid=a6479f08-a4d3-4358-b752-8e127e8e0abf>

[2] <http://www.scientificamerican.com/article/mrsa-spreads-in-households/>

[3] <http://antibiotics-theperfectstorm.blogspot.com/2014/04/astrazeneca-antibiotics-unit-for-sale.html>