

Good news for kids recovering from complex pneumonia

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In some good news for families of children recovering from complex pneumonia, doctors recommend in a study published by *Pediatrics* it's better to send kids home from the hospital with oral instead of intravenous antibiotics.

Children with complex pneumonia typically require one to three weeks of antibiotic therapy after [hospital](#) discharge to treat residual infection. The relief of going home without a needle and tube stuck to a child's arm also comes with other benefits, according to a multi-institutional research team led by Cincinnati Children's Hospital Medical Center.

Appearing in the journal's Nov. 17 eFirst edition, the retrospective study of 2,123 [children](#) at 36 hospitals found [oral antibiotics](#) are as effective as intravenous in managing residual disease. Taking medication by mouth also avoids the risk of infection and other medical complications from peripherally inserted [central venous catheters](#), or PICC lines.

"PICC line complications can be serious, resulting in hospital readmission, additional procedures, and more medications, as well as missed work or school." says Samir Shah, MD, MSCE, the study's lead author and director of Hospital Medicine at Cincinnati Children's Hospital Medical Center. "It's not surprising that children and families would rather not use PICC lines. Our findings, which provide compelling evidence to support the use of oral antibiotics for children with complex pneumonia, will contribute to safer care for children across the country."

The paper is the first multi-center research project to look at the issue. The study is a collaboration of the Pediatric Research in Inpatient Settings Network—a group of pediatric hospitalists focused on improving care delivery to children.

About 15 percent of children hospitalized for pneumonia develop complicated pneumonia, which includes the buildup of fluid around the lungs caused by pleural infection, according to the authors.

National treatment guidelines do not call for the use oral antibiotics after leaving the hospital, although they do highlight the risk of giving the medicine intravenously. The researchers report that although PICC use is overall not common, they found substantial variation in post-discharge use across the 36 hospitals in the study with almost three-fourths of children at some hospitals receiving antibiotics by PICC for complex pneumonia. An important goal of the research is helping reduce what the authors call "unwarranted variation" or differences in care that are not related to the child's illness or underlying medical conditions.

Of the 2,123 children in the study, 281 (13.2 percent) received antibiotics through a PICC line after release from the hospital, with the rest getting oral antibiotics. Treatment failure rates were not significantly different between the groups—with 3.2 percent failure rate for kids on a PICC line and 2.6 percent for the oral antibiotics group. PICC-related complications occurred in 7.1 percent of children in that group; adverse drug reactions were recorded for 0.6 percent of children taking oral medication.

This led the authors to conclude that children with complicated pneumonia should "preferentially receive" oral antibiotics when released from the hospital when effective oral options are available.

More information: *Pediatrics*, [DOI: 10.1542/peds.2016-1692](https://doi.org/10.1542/peds.2016-1692)

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