

# The early use of Antibiotics for At-risk children with Influenza in Primary Care (the ARCHIE programme)

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## Disclosure of interests

**Full disclosure of interests:** Completed ICMJE forms for all authors, including all related interests, are available in the toolkit on the NIHR Journals Library report publication page at <https://doi.org/10.3310/WDFR7331>.

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## Plain language summary

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## Plain language summary

**F**or most children flu or a flu-like illness is a mild and short illness but is considered to be a factor for secondary complications, including bacterial infections. Children who have an underlying health condition (e.g. diabetes or Down syndrome) are particularly vulnerable to developing secondary complications. Flu and flu-like illness in these children place a great burden on families and health-care systems.

Our research explored the literature on children, flu and flu-like illness. We spoke to general practitioners who treat children and families of children who have experienced a bout of flu/flu-like illness. We conducted a clinical trial to see if giving children an antibiotic [co-amoxiclav (Augmentin®, GlaxoSmithKline UK)] early on in their illness would help them feel better more quickly and prevent complications. We conducted a substudy to take follow-up throat swabs at three times over a year to check for any signs of antibiotic resistance from co-amoxiclav treatment. We explored the cost-effectiveness of treatment with co-amoxiclav and if it was possible to identify which children would benefit most from it.

Our findings from the literature were that premature birth was an unidentified risk factor for flu/flu-like illness complications. We found that general practitioners are influenced by a variety of factors when making clinical decisions about individual children but these do not include if the child may have flu. Parents reported not being prepared for how quickly their child got worse when they had the flu and were positive about the use of antibiotics. The clinical trial indicated that there was no evidence of difference between children given co-amoxiclav and those given a placebo, or that co-amoxiclav helped children who visited a hospital outpatient service more than children who visited their general practitioner. The swab substudy did not show any evidence that co-amoxiclav led to children developing long lasting resistance to antibiotics.

We did not find any evidence that early treatment with co-amoxiclav makes it less likely that a child will be seen again by a doctor or nurse owing to their flu/flu-like illness getting worse. Our findings suggested that treatment with co-amoxiclav might lead to lower overall health-care costs, but a bigger trial would be needed to confirm this as there was no clear evidence of difference. It was not possible to identify if any specific group of children would benefit more from co-amoxiclav treatment early on in their illness. We do not recommend that children with an underlying health condition be given an antibiotic when they have a flu-like illness.



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