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TOTAL TREATMENT COST OF LINEZOLID COMPARED TO VANCOMYCIN IN MRSA INFECTIONS

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OBJECTIVE: This study estimated the total treatment cost of the orally administrated agent linezolid compared to vancomycin, administrated through intravenous infusion, in patients with methicillin resistant *Staphylococcus aureus* (MRSA) infections in Sweden. **METHODS:** Resource consumption for MRSA treatment was divided into four categories; hospital and home care, pharmaceuticals, administration of intravenous infusion, and diagnostic tests. Costs were assigned to each resource from official price lists and Statistics Sweden. Total treatment cost was investigated in a cost-minimization model for a base case where patients were treated for 14 days and remained at the hospital for the entire treatment duration. In a sensitivity analysis a range of parameters were varied and scenarios were investigated where linezolid patients were able to conclude the treatment at home, and where all patients were able to conclude treatment at home (using home care for vancomycin i.v.). Costs were given in 2007 Euro prices. **RESULTS:** In the base case, the total treatment cost during 14 days was €9526 for linezolid and €9459 for vancomycin. Pharmaceutical cost was €856 higher for linezolid; however this cost was offset by lower cost of intravenous administration and diagnostic tests. The sensitivity analysis showed that for each day linezolid patients could be treated at home, while vancomycin patients remained at hospital, the linezolid treatment cost decreased by €558 compared to vancomycin treatment. For each day both linezolid and vancomycin patients could be treated at home, the corresponding decrease was €254. **CONCLUSION:** When patients remain at the hospital for the entire treatment duration, the higher pharmaceutical cost of linezolid compared to vancomycin is almost entirely offset by lower cost of administration and diagnostic tests. The potential for significant cost reduction lies in enabling patients to conclude their treatment at home without home care visits. This potential has been shown to be realized by linezolid.

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THE CHILD AND HOUSEHOLD INFLUENZA-ILLNESS AND EMPLOYEE FUNCTION (CHIEF) STUDY—LINKING SURVEY AND CLAIMS DATA TO UNDERSTAND DISEASE IMPACT ON INDIRECT COSTS

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Administrative claims data provides tremendous utility in analyzing specific real world questions; however, as noted by the ISPOR Task Force for Retrospective Database Analysis, many research questions require information beyond the scope of claims-based databases. The CHIEF Study was designed to capture complementary survey data to supplement an existing claims database for evaluating how household cases of influenza impact employee productivity. Leveraging existing relationships with three large employers, the CHIEF Study links monthly web-based surveys collected during the 2007–2008 influenza season with administrative claims from the MarketScan Databases. Three employers, which include a national retail chain, a transportation company, and a durable goods manufacturing company, participate in CHIEF. Participant eligibility was based on having at least one child aged ≤ 17 years with employer-sponsored health insurance that lives in household ≥ 4 days per week. A total of 3686 employees completed the web-based

screening questionnaire; 2295 (62%) of employees were eligible for study participation. Each month between October 2007 and May 2008, participants receive an email with an electronic link to the survey. The baseline surveys include questions about demographic, health status and health behaviors of all household members as well as the employee's workplace characteristics, absenteeism and presenteeism. The average household includes 2.08 adults and 1.85 children. Employees are approximately 40.77 years old and are predominately full-time workers (81.91%). Monthly surveys include questions about the presence of influenza in the household, the impact of influenza on employee productivity and influenza-related health care use. The completion rate for the first and second monthly surveys was 97.2% (n = 2230) and 96.5% (n = 2213) respectively. Prospective examination of household illness, absenteeism and presenteeism linked with administrative claims data is feasible and provides an opportunity to understand the impact of disease on indirect costs. This information can provide more credibility to future economic analyses and decision making.

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A DYNAMIC MODEL FOR ASSESSING THE IMPACT OF EMERGING VACCINE TECHNOLOGIES ON MEASLES DISEASE BURDEN IN DEVELOPING COUNTRIES

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OBJECTIVES: Measles continues to cause considerable morbidity and mortality worldwide. The current measles vaccine is administered in developing countries through a combination of routine immunization (RI) at nine months of age plus a second opportunity (SO)—either another routine injection after one year of age or via large-scale campaigns. Although these strategies have proven successful in eliminating measles in the Americas, measles continues to prove intractable in much of Asia and Africa due to challenges with vaccine delivery and effectiveness in current settings. However, several potential measles vaccine technologies are presently in R&D with the aim to further reduce measles disease burden compared to the conventional approach alone. Examples of such technologies include needle-free devices, DNA vaccines, and/or thermostable vaccines. **METHODS:** We developed an age-structured compartmental (dynamic) model of measles transmission in Nigeria, Uganda and Bihar, parameterized with available demographic, clinical, incidence and seroprevalence data. We thus projected future measles cases and deaths under scenarios of (1) RI alone with current technology; (2) RI with SO using current technology; (3) RI with new technologies; and (4) RI and SO with new technologies. We investigated the impact of new technologies under various alternative assumptions regarding how much they would increase vaccine coverage and/or vaccine efficacy. A dynamic model was used so that herd immunity effects can be captured and the estimated benefits of vaccine innovations thus better estimated. **RESULTS:** The effectiveness of RI and SO is enhanced with some of the new measles vaccine technologies. According to model projections, new technologies would further reduce the burden of disease in all three populations, especially at younger ages. **CONCLUSION:** New immunization technologies could help reduce the measles disease burden in developing countries. However, the potential cost-effectiveness of using these new technologies and strategies, including the likelihood of uptake, remains to be determined.