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*Title* **Vancomycin or Metronidazole for Treatment of Clostridium difficile Infection: Clinical and Economic Analyses**

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## Aim

To evaluate the relative clinical effectiveness, cost effectiveness, and budget impact of using vancomycin or metronidazole in managing initial episodes of moderate to severe *Clostridium difficile* infection (CDI) in children or in adults, and to review clinical practice guideline recommendations.

## Conclusions and results

The use of metronidazole or vancomycin produces a similar clinical cure rate in patients with initial or recurrent moderate CDI. A higher clinical cure rate is reported with vancomycin in patients with initial or recurrent severe CDI. The use of oral vancomycin by patients with severe disease will incur an incremental cost of $1161 per clinical cure. However, this cost-effectiveness ratio may be lower if generic IV vancomycin is used in hospitals ($346 per clinical cure), and the use of vancomycin may result in net health expenditure reductions if it has an impact on complication rates and reduces hospitalization costs. Practice guidelines recommend the use of oral vancomycin for severe initial episodes of CDI and oral metronidazole for nonsevere episodes.

## Recommendations

Not applicable.

## Methods

In a systematic review of the relative effectiveness of vancomycin and metronidazole in adults or children with moderate or severe CDI, we used the following outcome measures: cure, recurrences, complications, and, serious adverse events. A primary economic analysis compared the cost effectiveness of first-line therapy with vancomycin versus metronidazole in patients with severe CDI. We used budget impact analysis to compare the incremental costs of first-line treatment using vancomycin versus metronidazole in hospitalized patients with severe CDI. In addition, we reviewed and assessed clinical practice guidelines.

## Further research/reviews required

Larger studies are needed to compare the relative efficacy of vancomycin and metronidazole for key clinical outcomes in different patient populations.

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