Aims Globally, an estimated 0.8 million children under five die of diarrhoea annually. Clear, evidence-based clinical management protocols exist, but their successful implementation in resource-limited clinical settings remains challenging. This clinical audit aimed to evaluate the impact of a simple, novel integrated care pathway (ICP) on standards of assessment and management of children with acute diarrhoea in a rural hospital in Bangladesh, and to assess any cost implication for the family. The ICP includes a simple checklist of clinical symptoms and signs which allow the severity of dehydration to be accurately assessed, and integrates this with the relevant treatment algorithm.

The impact of the new ICP was measured against the 4 endpoints listed in the results section.

Methods Retrospective case notes study of admitted children (1 month to 12 years) with acute diarrhoea in 2012. Patient management was evaluated against hospital guidelines. As the ICP was implemented at the end of May 2012, the patients were split into two cohorts: A (pre-ICP) and B (post-ICP). 183 patients were included in total.

<table>
<thead>
<tr>
<th>Admission Period</th>
<th>Jan-May (Cohort A – pre ICP)</th>
<th>Jun-Dec (Cohort B – post ICP)</th>
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<tbody>
<tr>
<td>Number of Admissions</td>
<td>115</td>
<td>68</td>
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Results

1. Accuracy of Dehydration Assessment: Children diagnosed with degree of dehydration inconsistent with their documented clinical signs were 34 (29%) in cohort A and 3 (4%) in cohort B.
2. WHO rehydration plan: Children rehydrated with recognised rehydration plan (A, B or C) were 38 (33%) in cohort A and 55 (81%) in cohort B.
3. Use of inappropriate IV fluids: Children given IV fluids without severe dehydration were 56 (49%) in cohort A and 13 (16%) in cohort B.
4. Cost implications: Average cost for rehydration fluids (oral and IV) was £3.26 for patients in cohort A and £0.92 for patients in cohort B.

Conclusion The implementation of the ICP in this clinical setting improved the quality of acute diarrhoea management. Rates of incorrect dehydration assessment fell by 25%, rates of evidence-based rehydration increased by 48% and rates of unnecessary IV fluid administration decreased by 33%. In addition, there was a 72% reduction in cost of fluids for the family.