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Using Workflow Diagrams to Address Hand Hygiene in Pediatric Long-Term Care Facilities[1]

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Hand hygiene (HH) in pediatric long-term care settings has been found to be sub-optimal. Multidisciplinary teams at three pediatric long-term care facilities developed step-by-step workflow diagrams of commonly performed tasks highlighting HH opportunities. Diagrams were validated through observation of tasks and concurrent diagram assessment. Facility teams developed six workflow diagrams that underwent 22 validation observations. Four main themes emerged: 1) diagram specificity, 2) wording and layout, 3) timing of HH indications, and 4) environmental hygiene. The development of workflow diagrams is an opportunity to identify and address the complexity of HH in pediatric long-term care facilities.

PEDIATRIC LONG-TERM care facilities provide medical, social, academic, and rehabilitative care to children with complex health needs, and face various infection prevention challenges, which may render children particularly susceptible to infection. In our previous work, for example, we found sub-optimal adherence to recommended hand hygiene (HH) guidelines (43%, 370/865) in several pediatric facilities in the New York metropolitan area (Buet et al., 2013). Based on findings from this previous study as well as the work of Son et al. (2011), our aim was to engage staff in the development of workflow diagrams, which highlighted HH practices during commonly performed patient-care activities. Our secondary aim was to validate these workflow diagrams through the direct observation of workflow tasks and elicit staff feedback on workflow diagram content and format.

Methods

This investigation was part of a larger funded study aiming to reduce infections and improve the safety climate and HH practices among three pediatric long-term facilities in the New York City metropolitan area: a 97-bed subacute rehabilitation and long-term care facility; a 54-bed long-term

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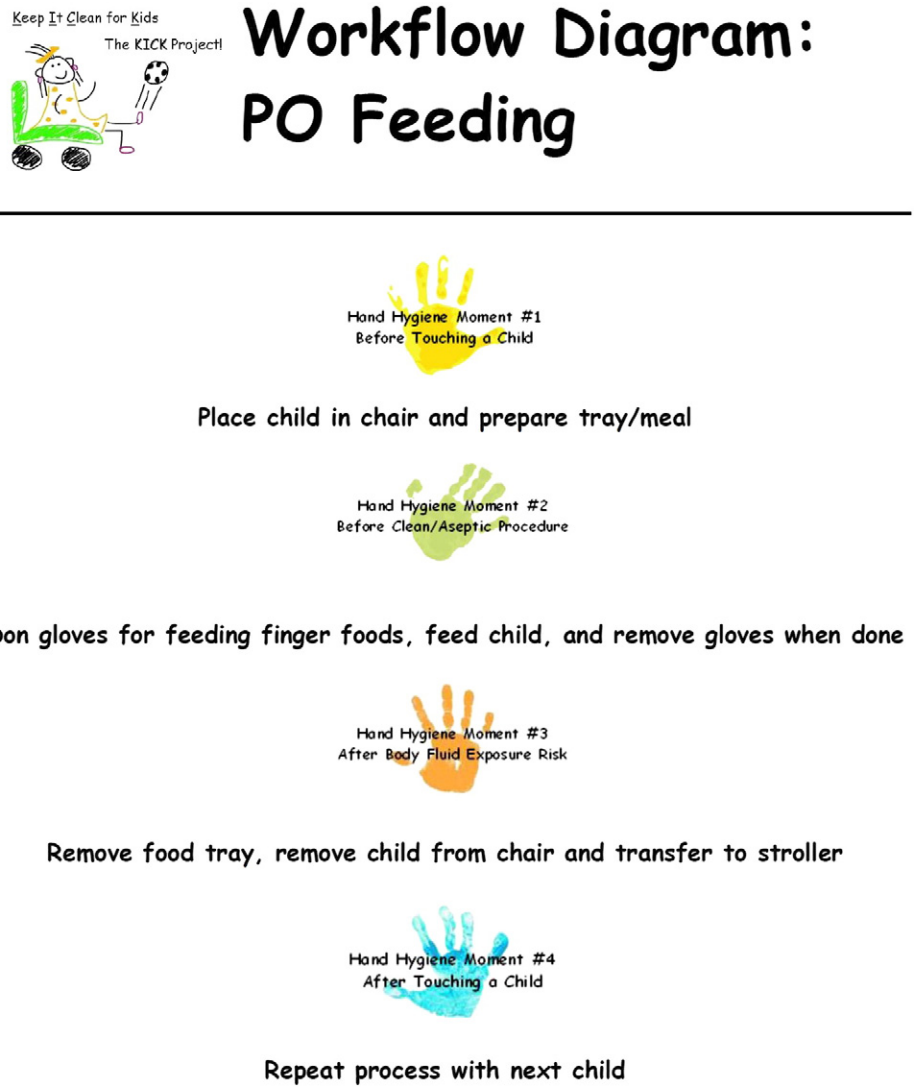

Figure 1 Original oral feeding workflow diagram.

care and rehabilitation facility; and a 137-bed subacute long-term care facility. In February 2013, under the direction of each facility's infection preventionist, multidisciplinary Keep It Clean for Kids (KICK) teams at each of the facilities convened. Participation was voluntary. KICK team members were self-identified or chosen by the facility infection preventionist to include both clinical and non-clinical personnel. Teams consisted of 5–16 members, and included nurses, nursing assistants, physicians, teachers, housekeepers, respiratory, physical, occupational and recreational therapists. Each team was responsible for developing step-by-step workflow diagrams of commonly performed tasks that highlighted HH practices according to the World Health Organization (WHO) 5 Moments (Pittet, Allegranzi, & Boyce, 2009). At each site, 3–4 workflow diagrams were developed by small breakout groups of 2–4 members each. Draft diagrams were shared with each facility's larger KICK team and infection preventionist to review diagram content and ensure accordance with the institution's infection control policies. Using an iterative process, KICK team members discussed and amended draft workflow diagrams until consensus was reached.

In summer 2013, the workflow diagrams developed by the KICK teams were validated via direct observation and staff feedback. Two researchers, trained in the WHO 5 Moments, performed real-time observations of each workflow activity while concurrently assessing its respective workflow diagram. Observers recorded whether the workflow diagrams included the actions performed by staff, whether the order of steps was accurate, and made note of additional activities observed. After real-time observations, researchers solicited workflow diagram feedback from staff by asking open ended questions such as, "How useful is this diagram in knowing when to do hand hygiene?" Observers documented a summary of staff comments and validation findings on the diagram of the observed activity. Participant demographics were purposefully not collected to facilitate staff participation.