Improving the management of obstetric emergencies in Uganda through case management maps

In this study, Uganda's Jinja Hospital and the Quality Assurance Project developed and implemented case management maps (CMMs) for two distinct pregnancy-related conditions: pregnancy-induced hypertensive disorders (PIHD) and postpartum hemorrhage (PPH). CMMs are pre-printed forms that serve as job aids to help prompt members of the healthcare team to perform required tasks. At Jinja the tasks on the CMM for PIHD reflected a new protocol of care that hospital staff and management had adopted as part of the development of the CMM. Jinja's CMMs list down the left side of a sheet of paper the tasks providers must accomplish for a particular condition, and they list across the top a timeline (e.g., hourly, daily) when the tasks must be accomplished. The study measured adherence to three care standards and patient outcomes for both intervention conditions during the 12 months before the introduction of each CMM and during the 12 months afterward. The care standards for PIHD were proteinuria on admission, blood pressure three times daily, and propanolol on admission; for PPH they were hemoglobin test on admission, blood pressure three times daily, and iron and folic acid daily. The sample sizes for PIHD were 36 cases before and 50 after; for PPH they were 20 cases before and 10 after. Before and after measurements were also obtained for a comparison (control) condition, acute pelvic inflammatory disease (PID), for which no CMM was developed. PID was chosen as the control condition in part because it was treated in the gynecological ward, physically separate from the maternity ward where PIHD and PPH were treated. Different staff treated the intervention conditions and the control condition. The PID sample sizes were 37 cases before and 29 after. The results with PIHD were clear. Pooled adherence for all three normal management indicators increased from 22.6% to 87.3% for PIHD; the difference was highly significant. In contrast, pooled adherence for the PID comparison group rose only slightly from 15.3% to 20.7%. Patient outcomes also improved for PIHD patients after the CMMs were implemented, but not so dramatically, nor were they statistically significant. In the study sample, fewer cases of pre-eclampsia progressed to eclampsia (11% before, 8% after), a highly desirable outcome. In addition, fewer stillbirths (38% before, 16% after) and fewer maternal deaths occurred (5.9% before, 4.0% after, and 0.7% at follow-up a year later). These results are probably due to the new protocol for managing PIHD (including new medications and the CMM) and the process of developing and implementing the protocol and the CMM. Until the relative contribution of the CMM itself and its development process can be assessed, care should be taken in attempting to generalize the result to other settings. The results of the CMM for PPH were not so clear. Average adherence to the three care standards for PPH increased from 27.9% to 39.3% following the introduction of this CMM; this increase was comparable in magnitude to the increase observed for PID, the control condition. The number of maternal deaths from PPH actually increased, from only one death in the before period to five after. A careful analysis of these deaths did not explain the increase, but it may have been due in part to this CMM's small sample size and in part that staff may have needed more time to gain proficiency in the use of the PPH CMM. We conclude that for PIHD, the development and use of CMMs clearly improved the process of care and perhaps patient outcomes. However, the impact of the PPH CMM on care and outcomes was small at best. Before going to scale, information is needed about which conditions benefit from CMMs and which do not, and about the relative contribution of CMMs separate from the process of developing them. (author's)
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