Abstract
Staff members of the Highland Hospital Nursing Practice Committee brought forth clinical questions regarding the purpose, importance, and accuracy of Intake and Output (I&O) documentation, and whether the measurement of I&O is valued by medical providers and nursing personnel for clinical decision-making in patient care. At this facility it is typical practice to measure I&O on all patients who have IV fluids and/or drainage catheters. An extensive literature review revealed case reports of I&O practices, but minimal reported research. Therefore a research study was implemented at the facility that adapted a study done in Hong Kong by Chung, Chong, and French (2002). The specific aims of the study were to review actual I&O documentation practices in the medical record and to evaluate provider, nurse and technician perceptions of the value of I&O accuracy. The study involved a retrospective chart review conducted on 63 medical records to analyze I&O charting practices on a medical, a surgical and a geriatric unit. Perceptions regarding I&O practices were obtained through a survey distributed to nurses, patient care technicians, and medical providers on the three units. Descriptive statistics were reported and a t-test for independent groups compared responses between medical providers and nurses. The chart review revealed that I&O forms were present 100% of the time in the medical record, but measurement was accurate in only 30% of the medical records. Infusion of IV fluids was the most frequent reason for I&O measurement (45% of the time). Medical providers and nurses agreed that I&O is used to estimate fluid balance, but 37% of charts had no reference to I&O measurements in progress notes and generally orders were not written for initiating or discontinuing I&O. Accuracy in measuring and documenting I&O was better on the surgical unit compared to the other two medical units. Surveys reveal that patient care technicians have a good understanding of the importance of I&O and that they believe the recording of I&O is more accurate than do nurses and medical providers. Study findings currently are being shared with various clinical practice councils for recommendations. Some recommendations for practice change include ordering and measuring I&O only when the information gathered will be used to make specific treatment decisions; specific orders for I&O would be written by medical providers or nurses and I&O orders would include a reason for the measurement; and if I&O is ordered there would be an expectation that documentation of I&O-based treatment decisions are recorded in the patient’s progress notes. Future plans include a follow-up chart review to assess whether these recommendations have improved accuracy of I&O charting. Further research is suggested to compare daily weights to I&O as an accurate measure of fluid balance.

Methods
Written Questionnaire
• Questionnaires sent to all providers and staff on sample units
• Instrument adapted from Chung, et al (2002) using a Likert 1 to 4 scale
• PCTs have added open ended questions

Retrospective Chart Review
• 63 medical records based on 20% of average number of patient discharges stratified/unit average
• Chart selection using random table

Statistics
• Descriptive
• t-test for independent groups to compare providers and nurses

Summary & Conclusions
• Perceived that I&O measurement is not accurate
• Belief that monitoring is important for treatment
• Some differences in perceptions between providers/nurses
• PCTs understand purpose of I&O
• PCTs generally have higher scores than providers/nurses
• Differences between surgery and medicine
• Weights may be preferred over I&O but equipment access and manpower to do is an issue

Recommendations for I&O Practice Change
• I&O will be measured only when ordered
• I&O measurement will be discontinued after 48 hours unless renewed
• Progress notes will reflect that I&O data is used to make treatment decisions
• IVF intake will always be measured and output from tubes will always be measured, full I&O will not be measured routinely
• Weights consistently done on admission and as ordered to monitor fluid balance
• Education regarding change in practice
• Further research