LMBP Evidence Summary Table Format
Laboratory Medicine Best Practices Pilot Test 2008

Topic Area: Reducing PSID Errors
Practice: Bar Coding

Bibliographic Information - Author (s) - Yr Published - Publication - Author Affiliations - Funding	Study - Design - Facility/Setting - Time Period - Sample - Comparator	Practice - Description - Duration - Training - Staff responsible - Cost	Outcome Measures - Description (s) - Recording method	Results/Findings - Type of Findings - Findings/Effect Size - Stat. Significance/Test(s) -Results/Conclusion Bias
- Askeland, R.W.; McGrane, S.; Levitt, J.S.; Dane, S.K.; Greene, D.L.; VandeBerg, J.A.; Walker, K.; Porcella, A.; Herwaldt, L.A.; Carmen, L.T.; and Kemp, J.D. - 2008 - Transfusion - Univ. of Iowa Hospitals and Clinics, Iowa City, IA - Funded by an extramural grant or cooperative agreement	- Observational study (e.g., Quality Improvement) - University of Iowa Hospitals & Clinics, Iowa City, IA, 680-bed comprehensive academic integrated medical center and regional referral center. 50,000 inpatient admissions, 853,000 clinic visits and 32,000 emergency-trauma center visits - 10 month study period - **Sample**: Approx. 85,000 blood sample bar code scans (8,500 per month) from Feb. to Nov. 2005 (post-bar coding implementation) **- Comparator**: Embossed wristbands listing the patient's name, medical record number, and date of birth were used to identify patients. (Pre-bar coding implementation practice)	-Comprehensive bar code-based computerized tracking system (to identify and prevent transfusion errors) using bar codes and laser bar code scanners to verify pts id, blood samples and blood products involving bar-coded wristbands and sample tube labels printed with bar code printers relying on a wireless data network throughout the hospital to provide point of care service. Blood sample bar code scan has 4 "transactions" of which the first two are relevant to patient specimen id (last two related to dispensing and administration of blood products); scans during sample collection (first transaction) include the following steps: (1) patient bar coded wristband, (2) requisition and (3) blood sample in succession; scans during sample arrival transaction at blood bank (second transaction) include steps (1) requisition form and (2) blood sample in succession. -10 month practice duration -Training is not discussed -**Staff:** Not reported (NR) -**Cost:** NR	**-**Outcome Measures: 1) Number of monthly computerized incident reports of problems during the transfusion process. 2) Blood sample rejection rates ("again mostly due to errors such as illegible handwriting incorrect spelling of the patient's name, and absence of signatures on the requisition") 3) Prevented identification (ID) errors (PIEs) during sample collection (first transaction) recorded when mismatches were detected between bar code labels on the patient's wristband, blood sample, and requisition 4) PIEs during sample arrival (second transaction) -Recording methods: Automated data collection through the "transfusion: blood product history"	- Pretest-Posttest Findings: - 1) Decreased from mean of 41.5 reports per month in the 6 months before bar coding to a mean of 7.2 reports per month after implementation (83% reduction)." Approx. 8,500 "scans" per month based on 10-month posttest data - No Statistical test/Significance reported -**Biases:** Finding time period (and sample size) is not clear for post-implementation data (i.e., whether it is based on the entire post-implementation sample period of 10 months from Feb.-Nov. 2005 or for a shorter period from 02/07 – 04/ 21/05. -2) "During 2003 the blood sample rejection rate at UIHC was 1.82%. … The sample rejection rate fell to 0.17% after hospital wide implementation (02/07 – 04/ 21/05) of the bar code-based system. -**Biases:** Can not tell dates and number of samples/scans findings are based on; there is no statistical test or other data provided on the number of samples and sample rejections -Non-comparative Findings: 3) "A total of 29 PIEs occurred during sample collection in the first 10 months with a range of 1 to 6 per

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				month (mean 2.9 PIEs/month)." 4) "A total of 14 PIEs occurred during the sample arrival in the first 10 months with a range of 0 to 5 per month (mean 1.4 PIEs/month)."