



Routine Urinalysis Using Dipstick for Adult In-patients: To Use or Not to Use?

Leng Shuang Shuang; Sandra Catherine Paul; Vallejos Jasmin Balido; Labado Roda Faith Corazon; KK Women's and Children's Hospital

Introduction

Urinalysis using dipstick is performed routinely for all new admissions to the adult in-patient wards in KKH. However, inconsistency in practice was observed, hence this project was initiated to review routine urinalysis for adult in-patients.

Aim

- To review the effectiveness of urine dipstick test as a routine screening tool for adult in-patients and to improve patient care management.
- To review cost effectiveness of urine dipstick test.

Method

A literature review of eleven relevant articles was conducted. A retrospective random sample record of patients who had urinalysis done using dipstick during the month of June 2013 (baseline data before commencing study in July 2013) was obtained from Electronic Medical Record system of the O&G wards for analysis of test results.

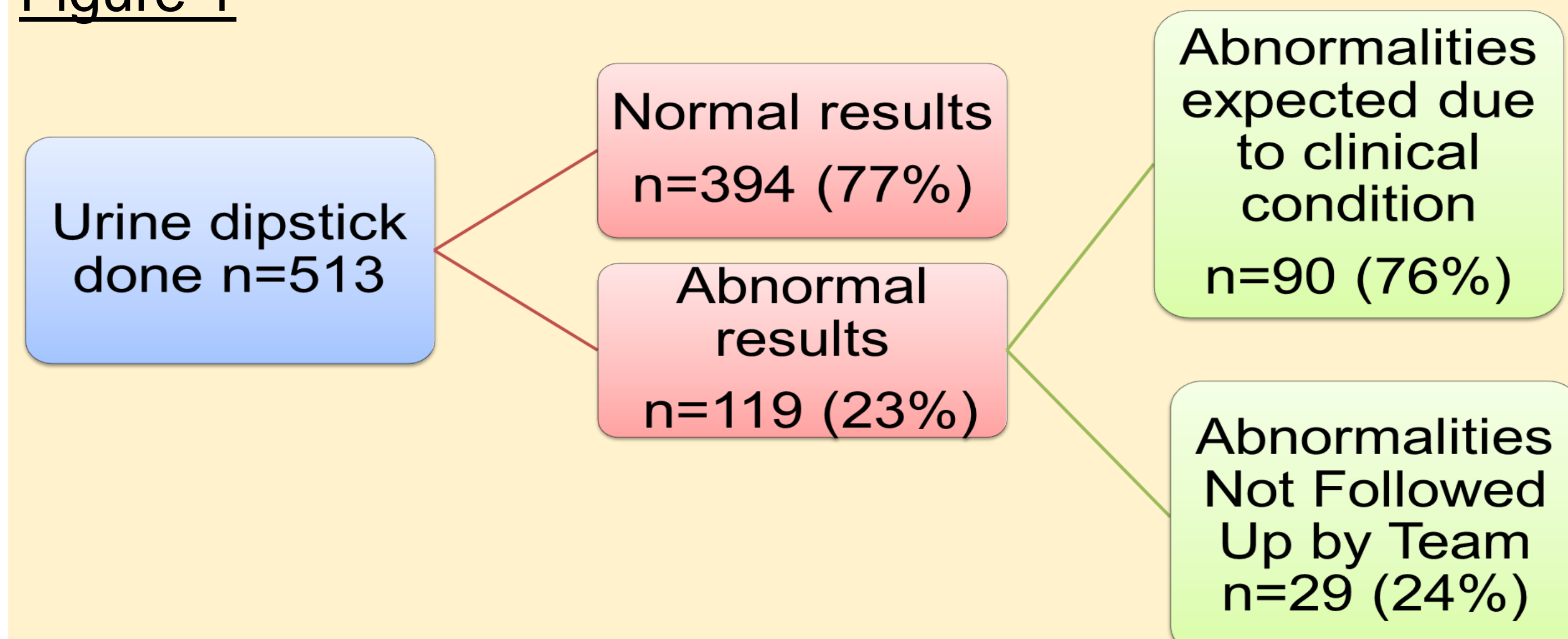
Results

The literature review showed that routine urinalysis using dipstick is not recommended for non-pregnant patients and the evidence is inconclusive for use on asymptomatic pregnant patients.

Test	Literature Review	Reference
PH	Insufficient for clinical decision-making	Kwong et al., 2013
Glucose	No clear recommendations and is considered obsolete	Sacks et al., 2011; Krogsbøl, 2014
Ketone	Not recommended for diagnoses and monitoring of DKA.	Arora et al., 2011; Sacks et al., 2011
Leukocyte /Nitrate	1) Not a screening tool for asymptomatic bacteriuria in nonpregnant women; 2) It is inconclusive to recommend urine dipstick as a screening test for asymptomatic pregnant women.	Deville et al., 2004; Richards et al., 2005; Schmiemann et al., 2010; Lumbiganon et al, 2010; Krogsbøl, 2014; Hemeda et al., 2014
Protein	Not recommended	Floege et al., 2010; White et al., 2011; Sacks et al., 2011; Krogsbøl, 2014
Hb	No evidence for use in screening for general population	Krogsbøl, 2014

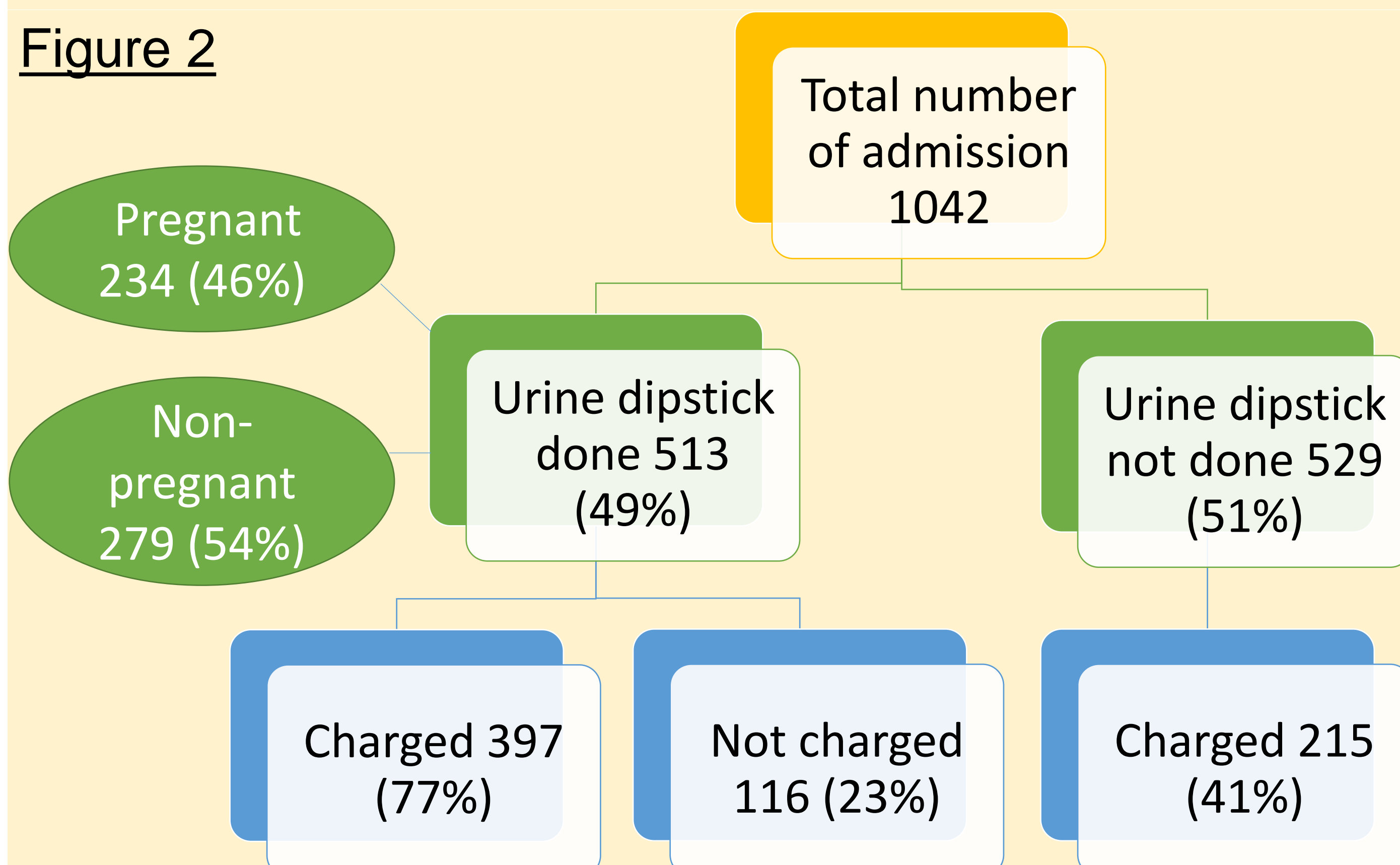
From the random sample record, a total of 1,042 patients were admitted in June 2013, 513 (49%) patients had urine dipstick tests done. Normal results were found in 394 (77%) patients. Abnormal results were found in 119 (23%) patients and this is expected because 90 (76%) patients were due to established co-morbidities and 29(24%) patients were not followed up by team as patients were asymptomatic (Figure 1).

Figure 1



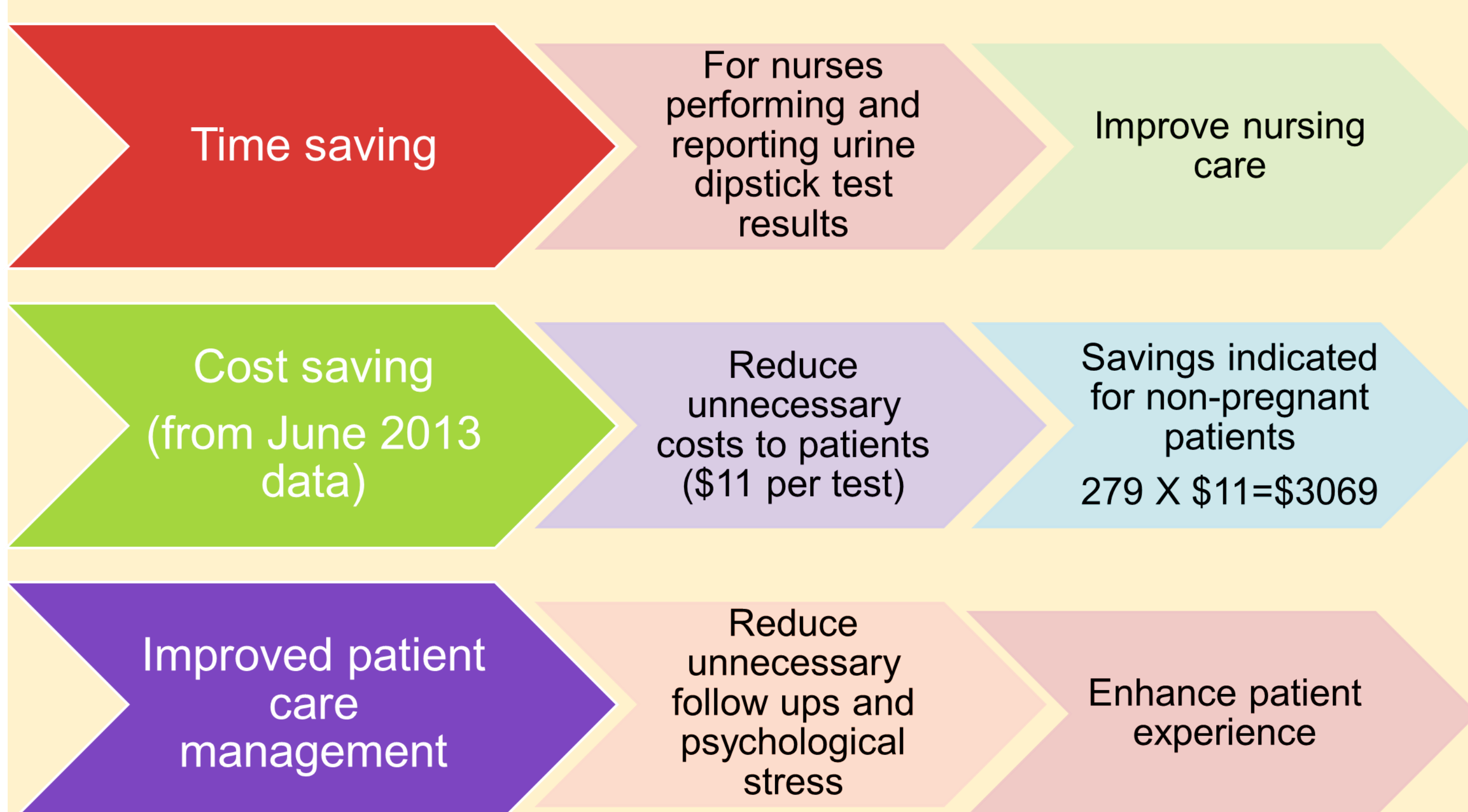
Out of 1,042 admissions, 513 (49%) of patients had urine dipstick tests done and 529 (51%) did not have the test done. Through the analysis, discrepancy in billing of the test was also noted (Figure 2).

Figure 2



Discussion

Tangible and Intangible benefits:



Recommendation

In our review of the practice of using dipstick for routine urinalysis for all adult admissions to the hospital, we were able to identify the inconsistency in practice. Literature review does not recommend using urine dipstick as a screening tool for adult non-pregnant in-patients. However, due to inconclusive finding for pregnant patients, routine urine dipstick test will continue for pregnancy related in-patients.

Conclusion

The use of urine dipstick test as a screening tool only for pregnancy related in-patients was approved by senior medical team and implemented in May 2015. There were total cost saving of \$50,600 (comparison of usage in previous year) after changing practice by 31/04/2016.