EVALUATION OF THE COPAN FLOCKED eSWAB VS COPAN DUAL SWABS FOR ANTERIOR NARES SPECIMEN COLLECTION FOR MRSA/ORSA USING THE XPERT MRSA™ ASSAY

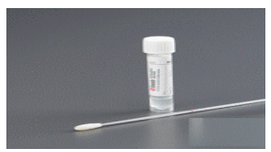
Halstead DC[1], Abid JA[2], Laing CE[2], Davis H[2], Moore L[2], Carter K[2], Lewis C[2], Veydt A[2], McCartt P[2], and McKitrick P[2]
Jacksonville Pathology Consultants, P.A./Baptist Health, Jacksonville, FL[1] and Baptist Medical Center, Jacksonville, FL[2]

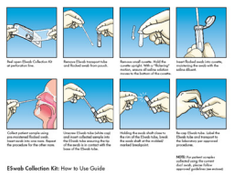
Introduction

•The Xpert MRSA™ Assay has been FDA-approved for testing on the GeneXpert Dx System using dual swabs made exclusively for Cepheid (Copan Diagnostics, Inc.) for collection and transport of anterior nares specimens in liquid Stuart's medium (139CFA). eSwabs (Copan Diagnostics, Inc.) use a nylon flocked single swab liquid-based collection and transport system with a uniquely designed nylon flocked single swab. When the swab is placed in transport medium (modified liquid Amies), organisms are completely and immediately eluted. Baptist Health developed a robust MRSA/ORSA surveillance program including all patients entering the ICUs at all five hospitals in the healthcare system. Using a laboratory and nursing interdepartmental approach, a randomized IRC-approved study was designed to compare the Xpert MRSA results obtained with our current dual pre-moistened swabs with pre-moistened flocked eSwabs.

Materials and Methods

Phase 1.
*132 specimens were collected from all patients transferred into the Heart Hospital and MedSurg ICUs using prepared kits with all required material.
*Specimen collection was randomized.
1st specimen was collected with eSwab in the heart hospital.
1st specimen was collected with dual swabs in the MedSurg ICU.
*Both specimens were tested immediately using the GeneXpert Dx System.
*Prior to testing, the eSwab tube was vortexed for 5 sec, 200 uL, pipetted into a Lysis Elution Buffer Tube and vortexed again for 5 sec before loading into an MRSA cartridge.
*Dual swabs were tested according to manufacturer's directions.
Phase 2.
An additional 210 randomized specimens were tested as outlined above.





Results

Concordant	Positive	Negative	Total 97.2%
	30/342		8.9%
		301/342	88.3%
Discordant	**Dual Swab Positive, eSwab Negative**	**Dual Swab Negative, eSwab Positive**	**Total 1.2%**
	3/342		0.9%
		1/342	0.3%
Invalid (one or both swabs)	**Dual Swab Invalid, eSwab Negative**	**Dual Swab Negative, eSwab Invalid**	**Total 1.8%**
	3/342		0.9%
		2/342	0.6%
	Dual Swab Invalid	**eSwab Invalid**	
	1/342	1/342	0.3%

Conclusions

•An added benefit for laboratories that are now using flocked swabs for routine microbiology specimen collection, would be to expand their use to specimen collection for molecular testing. Preliminary data supports the use of eSwabs for collecting specimens tested using the Cepheid GeneXpert Dx System. Further testing is required to confirm these initial findings.

Discussion & Reference

> 97% concordance in results obtained by testing anterior nares specimens collected with Copan dual swabs and eSwabs.
1.8% one or both swabs gave invalid results perhaps due to inhibitory substances such as lubricant used for nasogastric tube placement.
1.2% of results were discordant, i.e.,

#	Dual Swab/ct*	eSwab/ct*	1st swab collected	Culture Results
75	Positive/34.8	Negative/36.7	eSwab	Dual swab: MSSA eSwab: MSSA
114	Positive/35.0	Negative/0	Dual swabs	Dual swab: MSSA eSwab: Negative
227	Positive/32.9	Negative/36.2	eSwab	Both Dual swab and eSwab: Negative
172	Negative/37.8	Positive/35.9	eSwab	Dual swab: Negative eSwab: MRSA

Based on the results above, all positive results whether from dual swabs or eSwab were around the molecular cutoff* indicating a very low level of organisms and by culture were not MRSA/ORSA with one exception, i.e., #172 that was positive for MRSA using the eSwab.

Reference: Martens K, De Beenhouwer H, Frans J, et al. 19th ECCMID, Helsinki 16-19, May 2009, "Evaluation of eSwab for surveillance of MRSA by Xpert MRSA and culture on pooled samples." p.797.