Supplementary Table 1. Hospital Units and Body Sites Sampled in The Active Surveillance Testing Program at King Faisal Specialist Hospital and Research Center

MDRO	Unit/other	Surveillance sample source
CRE	Major surgical wards Oncology units Solid organ transplant units	Rectal, perirectal
Rapid VRE Screening	Major surgical wards Stem cells transplants wards (Adult + pediatrics) Oncology units Solid organ transplant units	Rectal, perirectal
Rapid MRSA/MSSA Screen	Major surgical wards Stem cells transplants wards (Adult + pediatrics) Oncology units Solid organ transplant units Patients if cardiac surgery History of outside hospital last 6 months prior to referral Peritoneal Dialysis Hemodialysis – as needed (persistent infections AV fistula)	Nasal – anterior nares
Rapid MRSA Screen -Skin	Pediatric/neonates – cardiac surgery All pediatric/neonates – axilla and groin (NICU) – admission from outside Infants 2 weeks of age or less – umbilicus, axilla, groin (admission)	Skin – umbilicus, axilla, groin

Supplementary Table 2. Indications for Isolation Precautions Policy Applied for Patients with MDRO Colonization/Infection at King Faisal Specialist Hospital and Research Center

MDRO	**Inclusion Criteria**	**Exclusion Criteria – presence of risk factors for ongoing carriage or ongoing exposure is considered in the decision about discontinuing CP**
MRSA	Duration of current admission Re-screened on next admission	1. No active infection 2. Not on antimicrobial therapy against MRSA 3. Patient does not have chronic wound(s) / devices causing large breaks in skin (does not include Foley catheter or CVC) 4. Evidence implicating specific patient in on-going transmission 5. ICU
VRE	Duration of current admission Colonization considered to be prolonged = 6 months	1. No active infection 2. Highly immunocompromised/immunosuppressed * 3. Receiving broad spectrum systemic antimicrobial therapy without VRE activity 4. Receiving treatment on unit with high rate of VRE 5. Absence of uncontrolled respiratory secretions, draining wounds, diarrhea 6. Evidence implicating specific patient in on-going transmission 7. ICU
CRE	Duration of current admission Colonization considered to be prolonged = 12 months	High-Medium Risk: 1. No active infection 2. Diarrhea or urinary / fecal incontinence 3. Abdominal drainage/stoma 4. Tracheostomy 5. Indwelling urinary catheter/intermittent catheterization

	Discontinuation with caution	6. Large wounds that require dressing 7. High levels of hands on care 8. ICU 9. KACOLD 10. Evidence implicating specific patient in on-going transmission 11. Unit with high rate of CPOs 12. Non-compliance with basic hygiene – hand hygiene practice <u>Low Risk of Spread</u>: 1. Bowel colonization only 2. Patient self-caring, independent (toileting on own), ambulatory, good hand hygiene practice

*Developed in alignment with the Society for Healthcare Epidemiology of America (SHEA) guidelines

Supplementary Table 3. A Summary of MRSA Decolonization Protocol applied at King Faisal Specialist Hospital and Research Center

A- For Cardiac Surgeries patients (Prior to Feb 2021)

- Only patient with +ve AST will be decolonized
- If it is an emergency case: Vancomycin (pre-ordered by physician) will be started on the floor upon calling the patient to the OR and infused over 2 hours (dose based on renal function). Post-operatively, continue Vancomycin IV x24 hours and start Bactroban BID x5 days + daily chlorhexidine wash x5 days
- If not an emergency case: In Cardiac Pre-Anesthesia Clinic: Nasal Bactroban to be given BID or TID x5 days (dose to be determined by physician) for MRSA positive results. Patient to have chlorhexidine wash daily x5 days with particular attention to axilla/groin. Pre-Anesthesia clinic appointment given for 2 days after completion of Bactroban to repeat MRSA screening test.

Post Feb 2021, Universal decolonization for cardiac surgeries patients was implemented. All (adult and pediatric) cardiovascular admission shall receive Bactroban BID x5 days to anterior nares before their surgeries regardless of the MRSA screening results.

B- For NICU patients: Patients with a positive MRSA screen shall be placed on Contact Precautions and undergo nasal decolonization with Mupirocin (Bactroban) twice daily x5 days. Daily chlorhexidine bathing shall not be done as it is contraindicated based on the patients' age.

Supplementary Table 4. The Median Time from Active Surveillance Testing to Clinical Infection in the Three Cohorts

Time to infection (days)	Colonized	Non-colonized	p-value
	Median [IQR]		
CRE cohort	51 [4-52]	72 [15-110]	0.07
MRSA cohort	41 [5-184]	27 [5-64]	0.3
VRE cohort	29 [11-58]	88.5 [45-146]	0.03