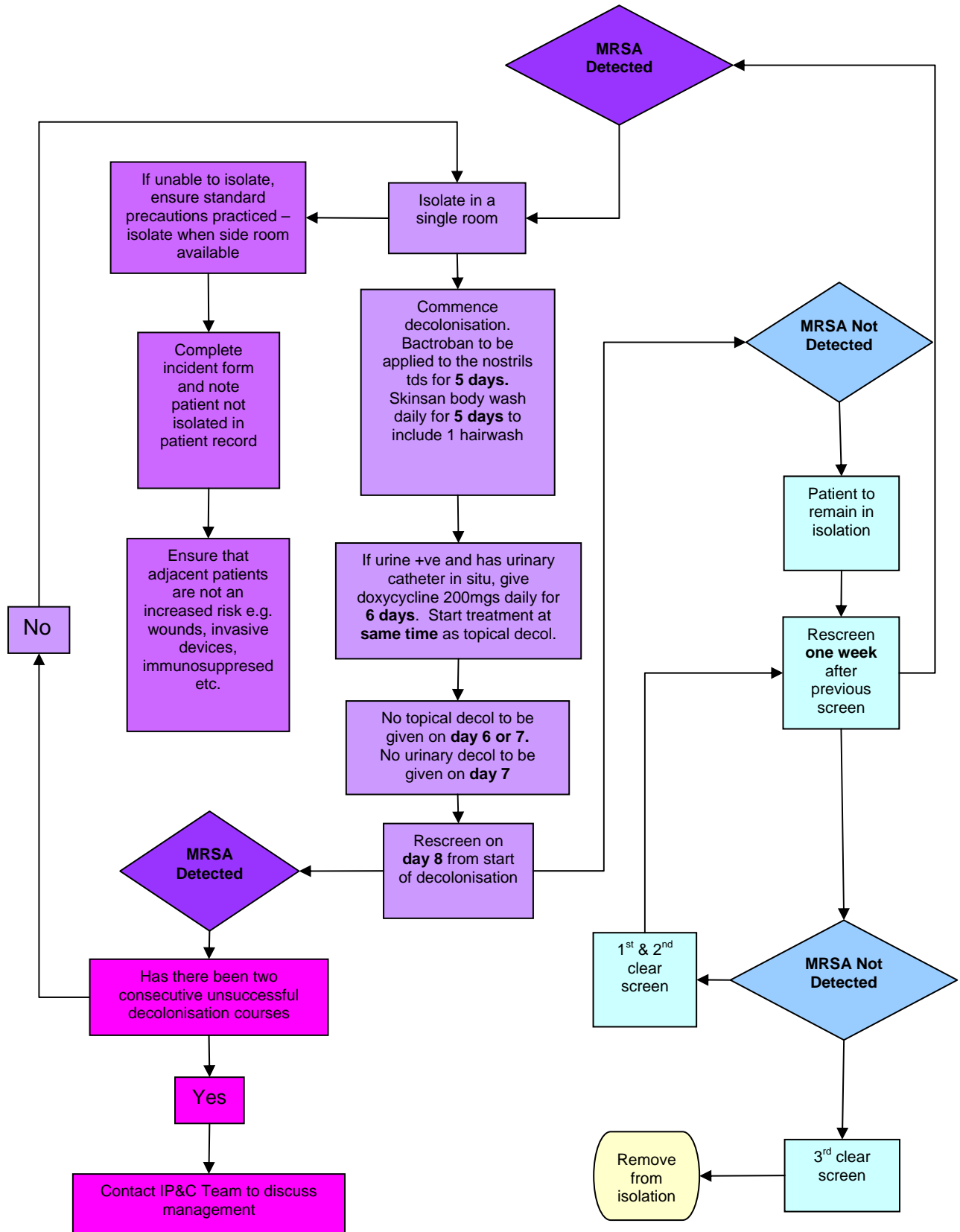
 Musgrove Park Hospital	Trust Policy, Infection Control
Title: Management of Patients with Meticillin Resistant <i>Staphylococcus aureus</i> (MRSA)	
Authors: Sharon Hilton– Infection Control Nurse	
Document Lead: Cecil Blumgart – Director of Infection Prevention and Control	
Approved by: Infection Prevention and Control Strategic Group	Active date: February 2010
Ratification date: February 2010	Review date: February 2013
Applies to: All Trust Patients	Exclusions: None
Purpose: To provide guidelines for health care workers involved with the care of patients with MRSA in Taunton & Somerset NHS Trust	
Key Words: MRSA, isolation, decolonisation, treatment	

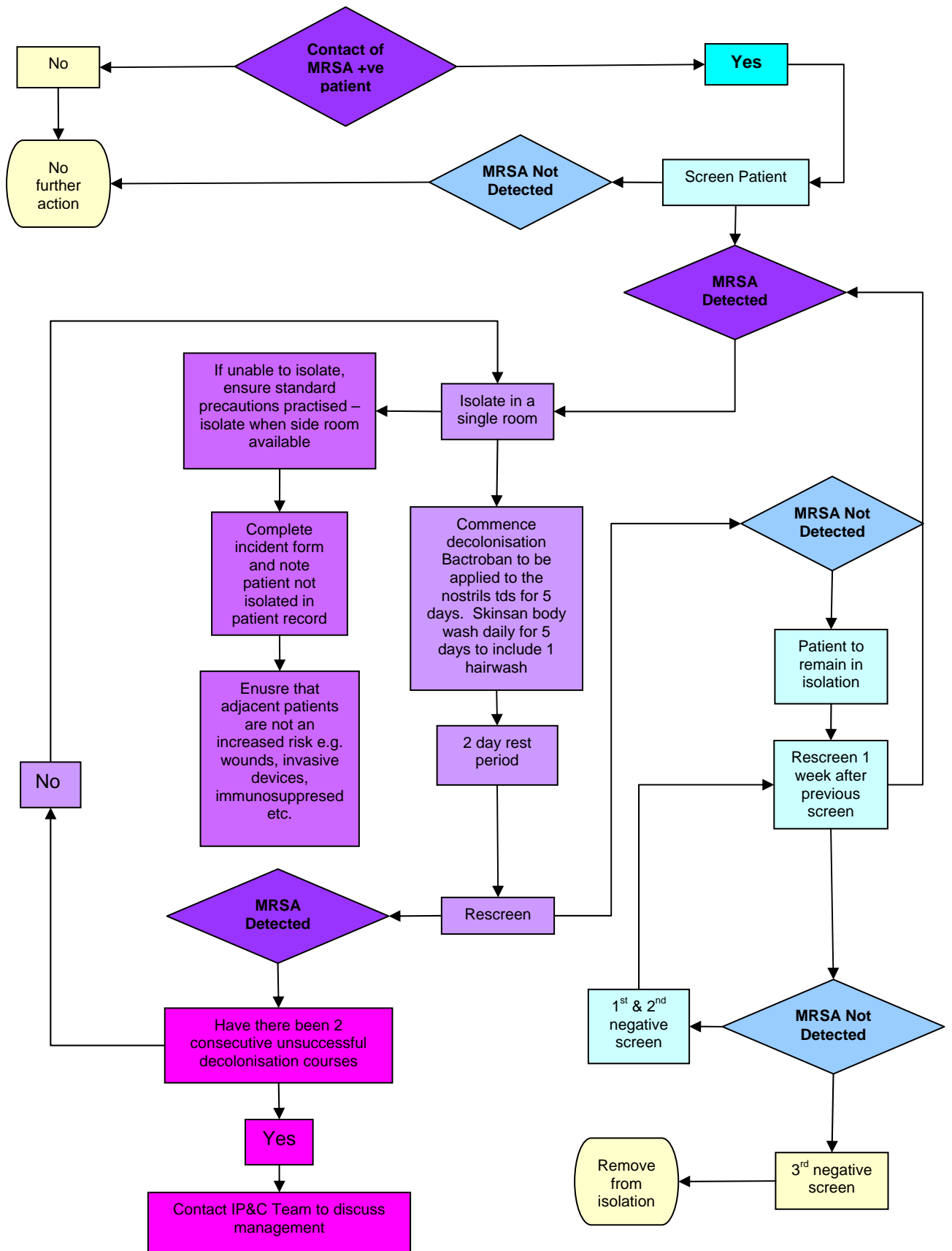
Key Points

- Meticillin Resistant *Staphylococcus aureus* (MRSA) is a strain of *Staphylococcus aureus* that is resistant to many of the antibiotics used to treat infections. It is endemic in many UK hospitals and can cause serious illness and results in significant additional healthcare costs.
- This policy does not address screening patients for MRSA. Guidance for this can be found in the MRSA Screening Policy
- Guidance for the management of wounds with MRSA can be found in the Topical Antimicrobial Dressing Protocol for Adult Inpatient Wounds Critically Colonised or Infected with Meticillin Resistant *Staphylococcus Aureus* (MRSA)
- Effective management of patients with MRSA is essential in controlling spread of MRSA in hospitals. See flow chart 1.
- Inpatients that are found to be MRSA positive should be isolated and a course of decolonisation treatment should be started as soon as possible. See flow chart 1.
- As with all patients, standard infection control precautions must be applied by all healthcare staff caring for patients with MRSA (see Standard Precautions Policy)

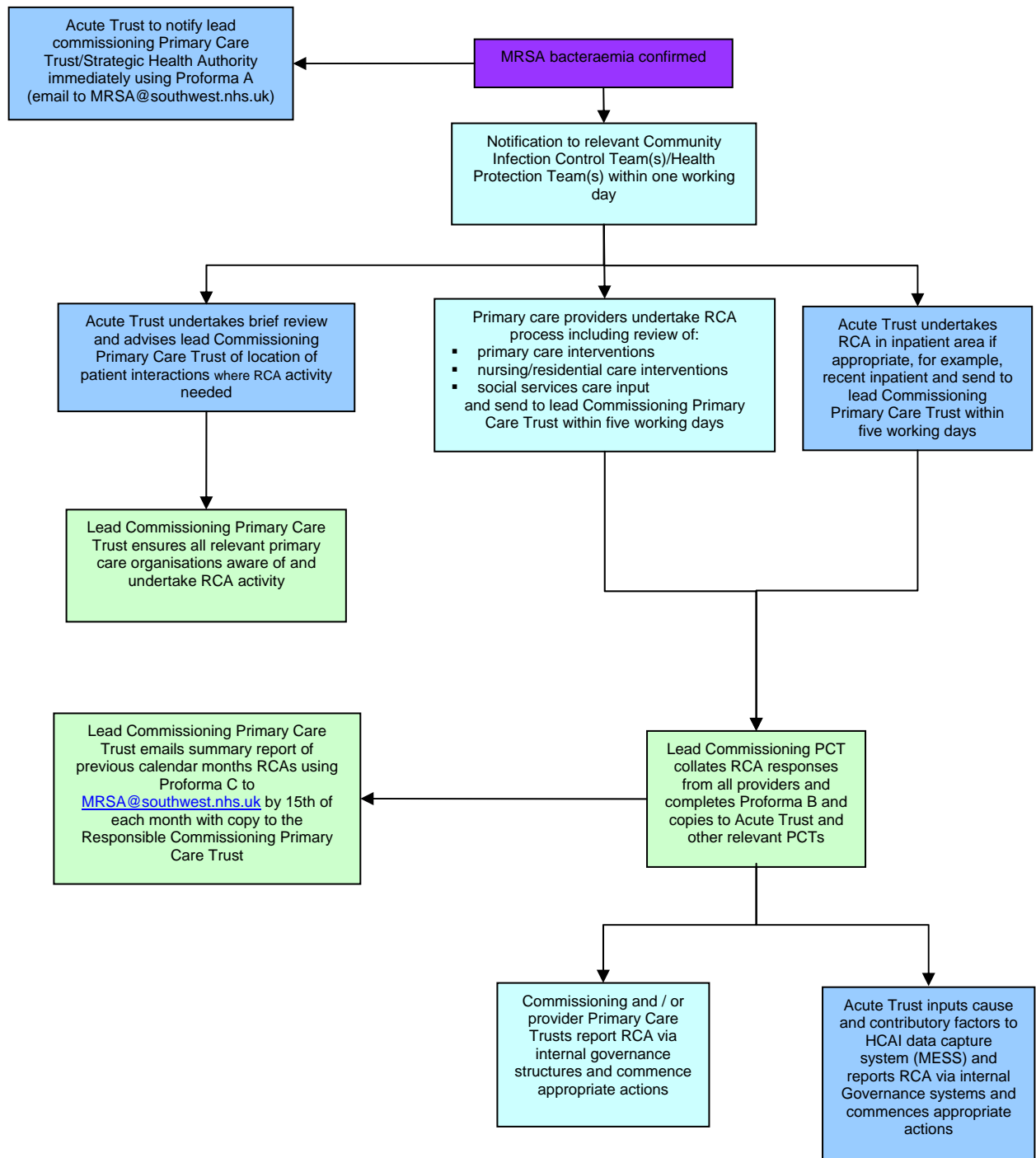
Flow-chart 1 - Inpatient Management for Patients with MRSA



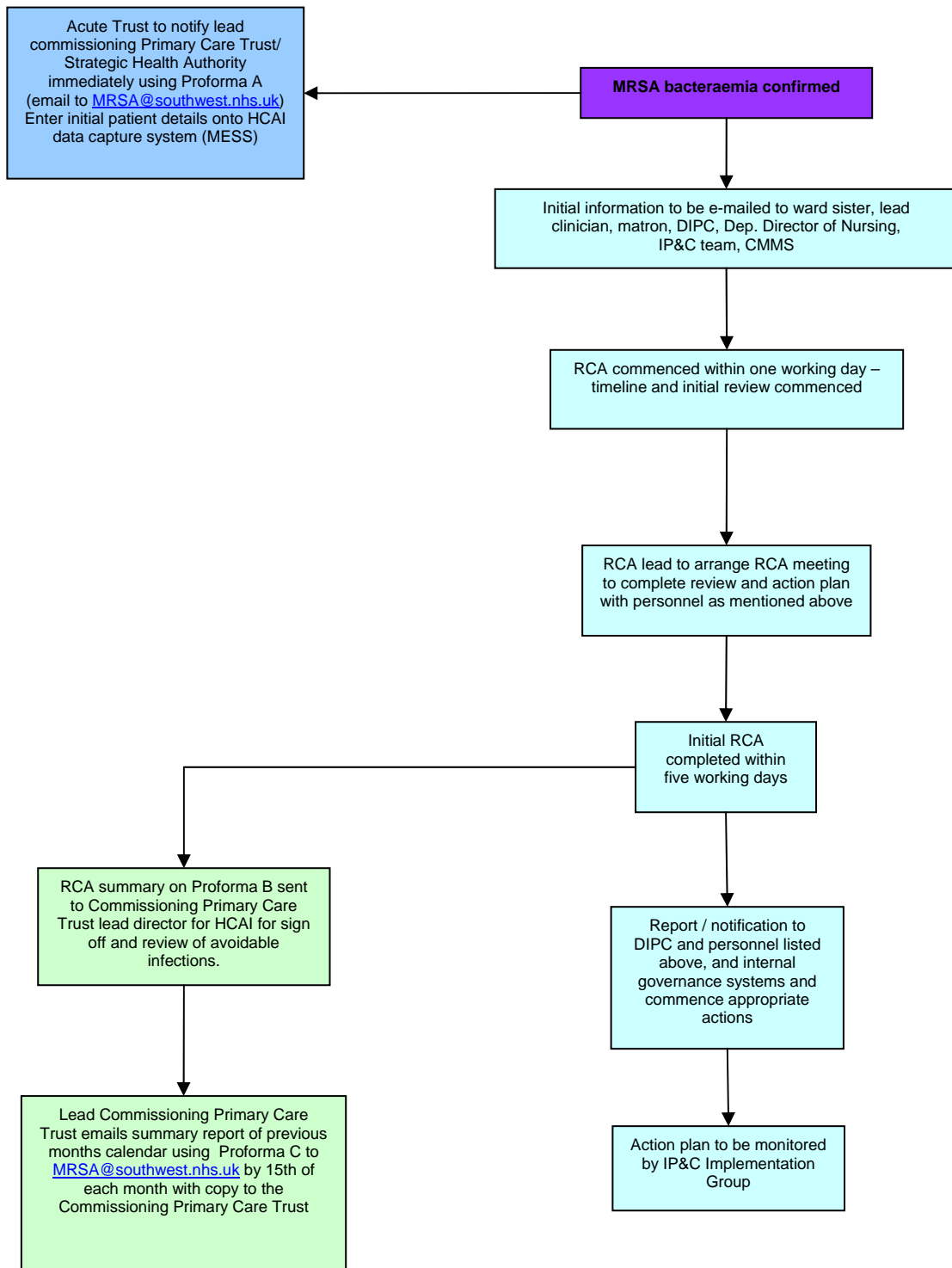
Flow-Chart 2 - Management for Contacts of MRSA positive Patients



Flow Chart 3 - MRSA Bacteraemia Reporting - Pre 48 hour



Flow Chart 4 - MRSA Bacteraemia Reporting - Post 48 hour



1 Aim

- 1.1 The purpose of this policy is to control the spread of MRSA.
- 1.2 This policy sets out the requirements for all healthcare workers involved in the care and management of patients with MRSA.
- 1.3 Further advice may be obtained from the Infection Prevention and Control (IP&C) Team or Consultant Microbiologist.

2 Introduction

- 2.1 Colonisation by meticillin sensitive *Staphylococcus aureus* (MSSA) is harmless and asymptomatic to the patient but in a small number of cases it can cause infection ranging from minor skin infections to bacteraemia and endocarditis.
- 2.2 A small number of *Staphylococcus aureus* is resistant to meticillin (MRSA)
- 2.3 Colonisation by MRSA can be a significant issue in healthcare settings because:
 - Patients colonised with MRSA who undergo invasive procedures are at risk of developing an MRSA infection.
 - The presence of patients colonised with MRSA in hospitals is a potential source of infection for other patients.
 - Should MRSA infections develop they are harder to treat as the antibiotics they are susceptible to are more limited.
- 2.4 MRSA colonisation is asymptomatic and therefore can only be identified by taking swabs from appropriate sites.
- 2.5 This policy should be read in conjunction with the following other policies:
 - Meticillin Resistant *Staphylococcus aureus* (MRSA) Screening Policy
 - Isolation Policy;
 - Hand Hygiene Policy;
 - Standard Precautions Policy.

3 Definition of Terms

- 3.1 ***Staphylococcus aureus*** - a Gram positive bacterium often found on the skin or in the nose of individuals.
- 3.2 **MRSA - Meticillin Resistant *Staphylococcus aureus* (formerly known as Methicillin Resistant *Staphylococcus aureus* in the UK)** – a strain of *Staphylococcus aureus* that is resistant to many of the antibiotics commonly used to treat infections.
- 3.3 **Colonisation with MRSA** – When MRSA is present on humans and not causing symptoms of infection an individual is regarded as colonised.
- 3.4 **Infection with MRSA** – Infections can occur if MRSA gains access to tissues beneath the skin or mucosa. An infection should be suspected when MRSA is isolated and the patient shows clinical signs of infection.
- 3.5 **Screening** – is the testing of patients for the presence of MRSA on the most common body sites it is known to colonise.
- 3.6 **Meticillin** – an antimicrobial agent that is used in the laboratory to determine sensitivity to flucloxacillin and other related antibiotics such as cephalosporins.
- 3.7 **MRSA Contact** – a patient who has been residing in the same immediate vicinity as an MRSA positive patient for 48 hours or longer.
- 3.8 **Contact Screening** – screening of MRSA contact patients.
- 3.9 **High Risk Elective Inpatients** – patients undergoing vascular and orthopaedic implant surgery.
- 3.10 **Low Risk Elective Inpatients** – all other elective surgical procedures.
- 3.11 **Transient Carriage of MRSA** – when MRSA is carried on the skin such as on the face, hands, arms, inside the nose for a short period of time.

4 Duties and Responsibilities

4.1 Director of Infection Prevention and Control (DIPC)

Is responsible for providing assurance to Trust Board that the management of MRSA in patients and staff is being implemented.

4.2 Infection Prevention and Control Team

Are responsible for:

- Advising and training clinical staff on the care and management of patients with MRSA.

- Advising patients if requested by clinical staff on any issues relating to MRSA.
- Liaising with Occupational Health as appropriate when MRSA is detected in staff.
- Surveillance of MRSA and identification of potential outbreaks
- Marking patient notes on the hospital patient computer management system identifying their MRSA status

4.3 **Ward and Department Managers**

Are responsible for:

- Ensuring staff in their area understand and implement the care and management of patients with MRSA as outlined in this policy.

4.4 **Consultant Medical Staff**

Are responsible for ensuring their junior staff understand and implement the care and management of patients with MRSA as outlined in this policy.

4.5 **All Clinical Staff**

Are responsible for complying with all aspects of this policy.

5 Transmission of MRSA

5.1 **Contact**

Contaminated hands are the main route of spread for MRSA in healthcare settings. Contamination of the patient environment may also result in transmission of MRSA e.g. in dust and via inadequately decontaminated equipment.

5.2 **Airborne**

MRSA can be transmitted via the airborne route but is only a significant risk when a patient has a skin shedding condition such as exfoliating eczema or psoriasis.

6 Screening patients for MRSA

See the Meticillin Resistant *Staphylococcus aureus* (MRSA) Screening Policy

7 Action to be taken if a patient is found to have MRSA after screening

- 7.1 **Flagging of patient notes** - The IP&C team will mark the patient's notes on the hospital patient computer management system identifying their MRSA status
- 7.2 For the Inpatient Management of Patients with MRSA see Flow Chart 1.
- 7.3 For the detailed management of inpatients with MRSA – Infection Prevention and Control Precautions - including isolation, MRSA Decolonisation and Treatment, Cleaning and Disinfection, Patient Movement and Actions to be taken on discharge of an MRSA positive patient – See Appendix A
- 7.4 For the Screening of Other Inpatients Coming into Contact with Known MRSA positive patients – see Flow Chart 2

8 Screening to Achieve Clearance of MRSA

- 8.1 Three consecutive screens taken at least at weekly intervals should be taken to ensure removal of MRSA from a site:
- 1st Screen - should be obtained at least 48 hours after decolonisation treatment, (and antibiotics if given) have been completed.
 - 2nd Screen – If 1st screen results are negative obtain 2nd screen one week later. If positive ensure patient has 2nd course of decolonisation treatment, then re-screen as 1st screen.
 - 3rd Screen – If 2nd screen is negative obtain 3rd screen one week later. If positive after 2nd course of decolonisation contact the IP&C Team for further advice.

9 Patients Found to Have MRSA Prior to Elective Procedures

- 9.1 Prior to any planned invasive procedure efforts must be made to minimize the level of risk of infection through topical and systemic decolonisation and prophylactic antimicrobial therapy as appropriate:
- **Low Risk Patients** – All elective surgical procedures (**apart from** patients undergoing vascular and orthopaedic implant surgery) are given 5 days of topical decolonisation therapy immediately before their date of surgery, to be completed at home. This is managed by the Pre Operative Assessment Clinic (POAC).
 - **High Risk Patients** - Patients undergoing vascular and orthopaedic implant surgery also have their decolonisation managed by POAC. They are given 5 days of topical decolonisation therapy as soon as MRSA notification is received by POAC, in an endeavour to gain 3 clearance screens as described in Section 8. If the procedure normally requires patients to have antibiotic prophylaxis, antibiotic choice should

cover MRSA. Please refer to Trust Antimicrobial Prescribing Guidelines or discuss with Consultant Medical Microbiologist or Antimicrobial Pharmacist.

- 9.2 If MRSA is still present, despite decolonisation therapy, patients can still proceed with treatment with appropriate antibiotic prophylaxis given at the start of the procedure.

10 MRSA in Staff

- 10.1 Transmission of MRSA can occur from patient to staff to patient via close contact. Carriage is usually transient, in that by the time staff return to work after a previous shift, they no longer carry MRSA.
- 10.2 Routine staff screening is not necessary but may occur as part of an outbreak investigation or at the discretion of the Infection Prevention and Control team (IP&C). Screens for staff should be taken at the beginning of their shift to rule out transient carriage if it has been decided necessary to screen staff.
- 10.3 Staff who have a positive screen will have another full screen taken to eliminate transient carriage.
- 10.4 Decolonisation therapy for staff is the same as for patients, as detailed in Appendix A. The IP&C team will advise if an alternative skin cleanser is required. The treatment is applied for 5 days then stopped for 2 days and re-screened on day 8 to determine if still MRSA positive.
- 10.5 Staff working in high risk areas such as ITU / HDU, SNICU and theatres, should be excluded from working in this area until a clear screen has been obtained. Such staff can return to work in a low risk area 24 hours after commencing decolonisation therapy. Staff who work in low risk areas that are found to have MRSA can return to work 24 hours after commencing decolonisation therapy. Each case will be managed by Occupational Health.
- 10.6 Any difficulties in achieving MRSA clearance will be discussed with the IP&C team / Consultant Medical Microbiologist.
- 10.7 There is no reason to exclude pregnant or breast-feeding staff from caring for patients with MRSA.

11 Actions to be taken on identification of an MRSA Bacteraemia (Bloodstream Infection)

- 11.1 The identification of an MRSA bacteraemia (BSI) is a significant event. The Consultant Microbiologist will liaise directly with the patient's clinical team advising on the best course of treatment.

- 11.2 On identification of an MRSA BSI a root cause analysis will be initiated to identify the factors contributing to the infection. This analysis will be conducted by the clinical team with support from the Primary Care Trust IP&C Team if the bacteraemia is pre 48 hours of admission and by the Acute Trust IP&C Team if the bacteraemia is post 48 hours of admission. The investigation must be commenced within 24 hours of notification of the MRSA BSI and completed within a month.
- 11.3 The actions that must be taken are outlined in Flow Chart 3 for cases that were inpatients for less than 48 hours prior to blood cultures being taken and Flow Chart 4 for cases that were inpatients for longer than 48 hours prior to blood cultures being taken

12 Patient Information

A patient information leaflet on MRSA and MRSA Screening is available to download from the Trust intranet or can be ordered from Medical Photography. Further advice for patients on MRSA can be accessed from the Infection Prevention and Control team.

13 Audit and Compliance Monitoring

Compliance with this policy will be audited regularly as part of the Divisional Infection Prevention and Control audit programme and the results will be monitored at the monthly Infection Prevention and Control Implementation meeting. In-patients with MRSA will be monitored during their stay by the infection control team as part of their daily clinical work, to ensure that the management of all patients with MRSA complies with this policy.

14 Review

This policy will be reviewed in 3 years or sooner if there are any major changes to practice.

15 References

Guidelines for the Control and Prevention of MRSA in Healthcare Facilities, 2006. J.E. Coia, G.J Duckworth, D.I Edwards, M. Farrington, C. Fry, H. Humpreys, C. Mallaghan, D.R. Tucker. *Journal of Hospital Infection* 63S, S1-S44.

Controlling the Risk of MRSA Infection: Screening and Isolating Patients, 2005. L. Bissett. *British Journal of Nursing*, 14 (7).

Our NHS Our Future – NHS next stage review. Interim Report DH October 2007.

Saving Lives: Reducing Infection, delivering clean and safe care

EPIC 2: National Evidence Based Guidelines for preventing Healthcare Associated Infections in NHS Hospitals in England 2007.

16 Appendices and Flow Charts

Flow Chart 1

Inpatient Management for Patients with MRSA

Flow Chart 2

Management for Contacts of MRSA positive Patients

Flow Chart 3

MRSA Bacteraemia reporting flow chart – Pre 48 hour

Flow Chart 4

MRSA Bacteraemia reporting flow chart - Post 48 hour

Appendix A

Inpatient Management of Patients with MRSA – Infection Prevention and Control Precautions

Appendix B

Side room Priority Tool C [Infection Control Risk Assessment Tool](#)

Appendix A

Inpatient Management of Patients with MRSA Infection Prevention and Control Precautions

Isolation of MRSA patients

- 1 MRSA positive patients will be moved to a side room for isolation wherever possible.
- 2 Patients likely to present a greater risk of spreading MRSA must take priority for a side room i.e. sputum positive patients with a productive cough, patients with skin conditions such as psoriasis.
- 3 Every effort must be made to segregate any positive patient from other patients. If this cannot be achieved, the MRSA patient must be managed in the bay as long as standard precautions are practised and a Trust incident form must be completed. Any neutropenic or severely immunocompromised patient must be identified and moved out of this area as soon as possible. Staff must use the Infection Control Risk Assessment Tool for guidance on prioritising patients for isolation (see Appendix B).
- 4 High Risk Areas - In some areas MRSA poses a very serious risk of infection.
 - ITU / HDU
 - Orthopaedics
 - Somerset Neonatal UnitPatients identified with MRSA in these areas **must** be isolated from others.
- 5 The door to the side room must be closed unless a risk assessment indicates that to do so would present a significant patient safety issue.
- 6 Standard precautions (see Standard Precautions Policy) must be followed for all care activities, i.e. as detailed in the Standard Precautions Policy.

Gloves must be worn for :

 - undertaking invasive procedures
 - contact with sterile sites and non intact skin and mucous membranes
 - activities that have been assessed as carrying a risk of exposure to blood and body fluids and secretionsAprons must be worn for all activities.

Hand hygiene must be observed on entering and leaving the room.

Visitors do not need to wear protective clothing whilst visiting a patient in isolation unless they are helping with direct patient care.
- 7 Notes and patient charts must remain outside the room at all times.
- 8 Patients having decolonisation therapy should have clean clothing and bed sheets daily.
- 9 Each isolation room must have its own dedicated multiple patient use equipment e.g. commode. Where this is not possible the equipment must be decontaminated before

and after use in the single room. Further advice about the appropriate decontamination method can be obtained from the Decontamination Policy.

MRSA Decolonisation & Treatment

- 10 If a clinical infection is suspected the medical staff must discuss treatment options with a Consultant Microbiologist.
- 11 Topical decolonisation treatment must be commenced immediately:

Mupirocin (Bactroban) Nasal Ointment x 3 daily to nostrils

Skinsan x 1 daily wash - include at least 1 hair wash

use as a liquid soap – do not dilute in water

The IP&C team will advise if an alternative skin cleanser is required. The treatment is applied for 5 days then stopped for 2 days and the patient is re-screened on day 8, 15 and 22 to determine if the MRSA has been successfully eradicated.

- 12 If a patient is MRSA positive in their urine **and** has a urinary catheter in situ, a 6 day oral course of Doxycycline 200mgs daily should be included as part of the decolonisation treatment. This should be started at the same time as the topical skin treatment.
- 13 If the patient remains positive after the first course of decolonisation a further course of topical treatment should be carried out (as previously described), followed by a further screen. If the second course of topical treatment is unsuccessful the IP&C Team must be contacted to discuss further options. Subsequent courses of Doxycycline should only be given after discussion with the microbiologist
- 13 For the management of MRSA wounds the Topical Antimicrobial Wound Dressing Protocol for Adult Inpatient Wounds Critically Colonised or Infected with Meticillin Resistant *Staphylococcus Aureus* (MRSA) should be followed, along with the Protocol for Decolonisation of MRSA in Patients with Chronic Ulcers (Including Diabetic Patients).
- 14 Decolonisation therapy must be prescribed and staff must record decolonisation using the inpatient MRSA prescription chart available to order via EROS, code **WZK2409**.
- 15 The management of neonates that are found to have MRSA must be discussed on a case by case basis with the IP&C team

Screening of Other Inpatients Coming into Contact with Known MRSA Positive Patients

- 16 See MRSA Screening Policy
- 17 The IP&C team will investigate any possible cross transmission should a further patient be found to be MRSA positive.

Cleaning and Decontamination

- 18 Management of the environment and equipment is vital to reduce dust levels and decrease the spread of MRSA. The frequency of cleaning may need to be increased if a patient has an exfoliating skin condition
- 19 Patient equipment must be capable of being decontaminated before use with other patients.
- 20 Once the patient has been discharged the room must be terminally cleaned in line with the Isolation Policy and the Trust's Cleaning Services Policy.

Patient Movement

- 21 Patients known to have MRSA must not be transferred to another ward unless it is to be moved to a side room or appropriate placement in a ward, and if possible be discussed with the IP&C Team.
- 22 Patients known or suspected of having MRSA can undergo investigations in other departments. The receiving department must be made aware of the patient's MRSA status by the ward in advance of the planned investigation. Standard infection control precautions must be practised by the staff in the department. When the patient leaves the area, horizontal surfaces and equipment touched by the patient must be thoroughly cleaned before the next patient is seen. Short-term exposure to other patients in clinics is not generally a problem unless the MRSA patient is sputum positive and coughing, or has exposed skin sites. In these situations the ward and department should arrange for the patient to be seen straight away on entry to the department to avoid waiting in areas with other patients.
- 23 Clinical Site Managers and other hospitals and / or ambulance control should be informed of patient's MRSA status before transfer. Movement of patients with MRSA should be kept to a minimum. Where patients need to attend departments for essential investigations, the receiving area should be notified of the patients MRSA in advance of the transfer. Aprons and gloves are only required for direct care and are not, therefore, required for staff transporting the patient, i.e. portering staff.
- 24 Arrangements for transfer to other wards or healthcare facilities e.g. hospitals / care homes etc must include notification of the individuals MRSA status. MRSA is not a reason for patients to be refused admission to a care home.
- 25 Patients with MRSA can be transported in an ambulance with other patients as long as any wounds are covered with an occlusive dressing and the ambulance crew maintain standard infection control precautions. Similarly patients with MRSA can be transported via hospital car service as long as wounds are covered.

Actions to be Taken on Discharge of an MRSA Positive Patient

- 26 The presence of MRSA in all patients where it has been identified must be included within any correspondence to other healthcare professionals on discharge. Patients undergoing decolonisation at the time of discharge should continue the course until completion and it is important that community staff are aware of any actions taken by the hospital. The need for completion of a decolonisation course alone should not prevent discharge from hospital.
- 27 It is the responsibility of the discharging nurse to ensure that arrangements are in place to continue the decolonisation course. This must be included in the discharge summary with details of when the course was started and when the patient needs to be rescreened.

Appendix B Side Room Priority Tool

All patients in Group 1-4 should be isolated. This tool is to be used as a guide to prioritise side room usage according to risk, when there are insufficient side rooms to isolate all patients in these categories. Within each score group conditions are listed in descending order of risk (e.g. Chicken pox (4.5) is a higher priority than Grade A ESBL (4.10))

Score Scale 0 – 4

- 4 = very high risk**
- 3 = high risk**
- 2 = moderate risk**
- 1 = Low risk**
- 0 = no need to isolate**

SCORE 4

1. Possible Viral Haemorrhagic fever (visit to endemic areas (Africa, Asia, South America) with pyrexia of unknown origin and negative malaria films).
2. Avian Flu
3. Multi-drug resistant TB
4. Known or suspected active pulmonary TB
5. Chicken pox / Measles
6. Confirmed *C.difficile* diarrhoea
7. Acute vomiting and diarrhoea
8. MRSA positive patients with exfoliating skin complaints
9. Crusted (Norwegian scabies)
10. Grade A ESBL
11. Patient with MRSA admitted to trauma / orthopaedic ward
12. Influenza-like illness and suspected or confirmed Swine Flu

SCORE 3

1. Grade B ESBLs with diarrhoea or incontinence
2. Glycopeptide Resistant Enterococci (GRE) with diarrhoea
3. Other cases of suspected infectious diarrhoea
4. Grade B ESBL, no diarrhoea or incontinence
5. Facial shingles with uncovered weeping lesions
6. Patient with sputum positive MRSA that is coughing
7. MRSA positive patient with wound where exudates cannot be contained by dressings
8. Meningococcal meningitis until treated for 48 hours
9. Wet cellulitis where exudates cannot be contained by dressings

SCORE 2

1. MRSA positive patients not covered in sections above
2. Cellulitis and necrotising fasciitis until treated for 48 hours
3. HIV, Hepatitis B, Hepatitis C and uncontrollable bleeding
4. Glycopeptide Resistant Enterococci (GRE)

SCORE 1

1. Grade C ESBL (no diarrhoea)
2. Patient transferred from hospital abroad until MRSA screen result available
3. Admitted from Nursing / Residential home
4. In patient admission to any healthcare facility in the previous year
5. Previous MRSA positive

SCORE 0

1. Psittacosis
2. CJD
3. Classical scabies
4. HIV, Hepatitis B, Hepatitis C without uncontrollable bleeding.
5. Non pulmonary TB