

Combating HCAs

A Perspective from Southampton

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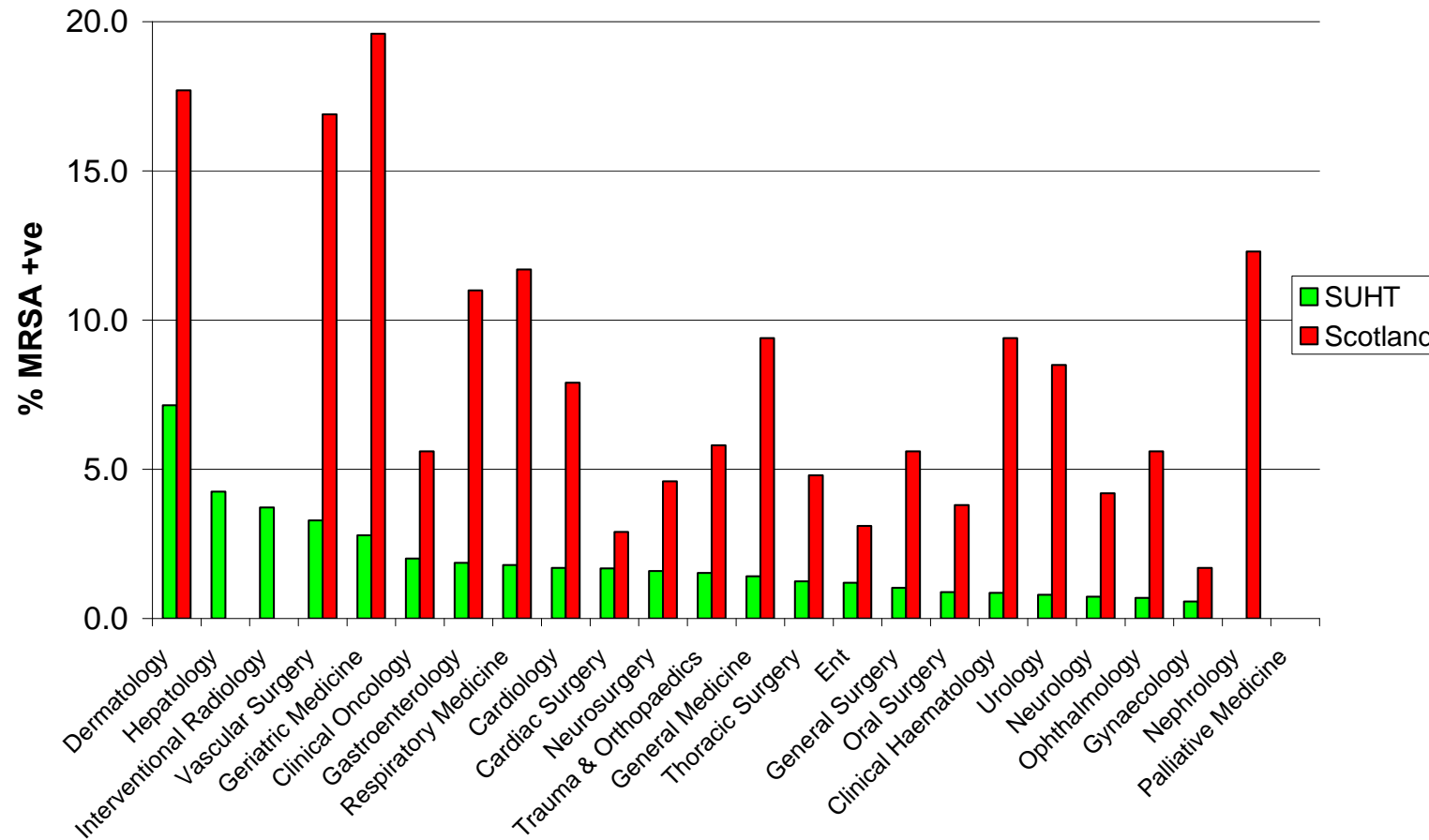
MRSA Screening in SUHT

	Patients tested (n)	MRSA +ve (n)	MRSA +ve (%)	Number needed to test to detect a +ve	Screening efficiency
Elective	14539	96	0.7%	151	99.1%
Day case	8199	46	0.6%	178	99.0%
Emergency	29117	466	1.6%	62	97.8%
SUHT	51855	608	1.2%	85	98.6%

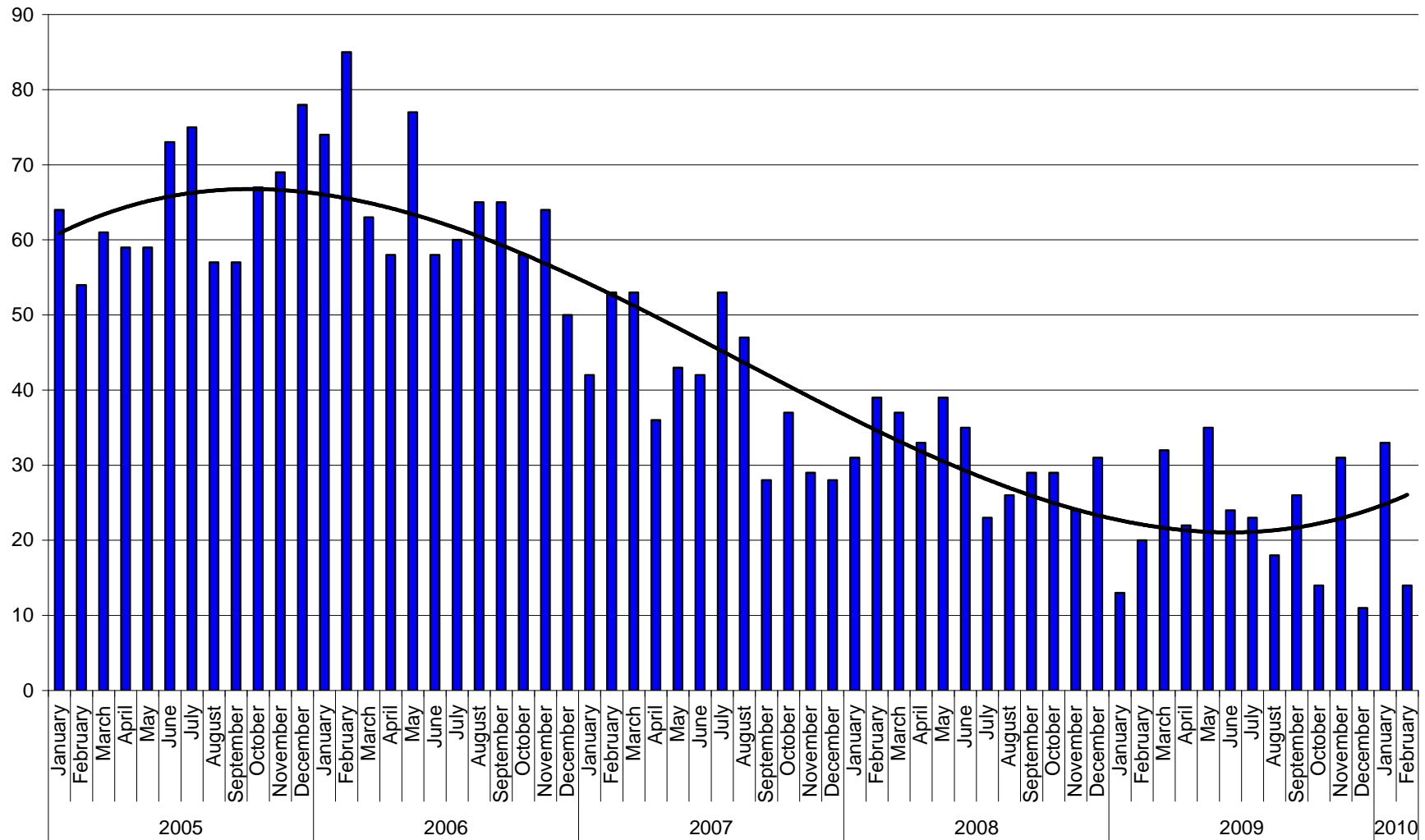
Comparison of MRSA screening results for SUHT and Scotland 2009

	Southampton 2009			Scotland 2009		
	Patients tested (n)	MRSA +ve (%)	Screening efficiency	Patients tested (n)	MRSA +ve (%)	Screening efficiency
Elective	9379	0.7%	99.1%	9379	5.1%	88%
Emergency	29117	1.6%	97.8%	20221	8.6%	

Comparison of MRSA screening results for SUHT and Scotland 2009



Acquisition of MRSA colonisation within SUHT



Acquisition of MRSA in hospital

” Infra-structure:

- . lack of isolation facilities
- . %low risk+areas
- . %low risk+patients

” Systems:

- . Cohorting
- . Capacity pressures
- . Complexity of in-patients

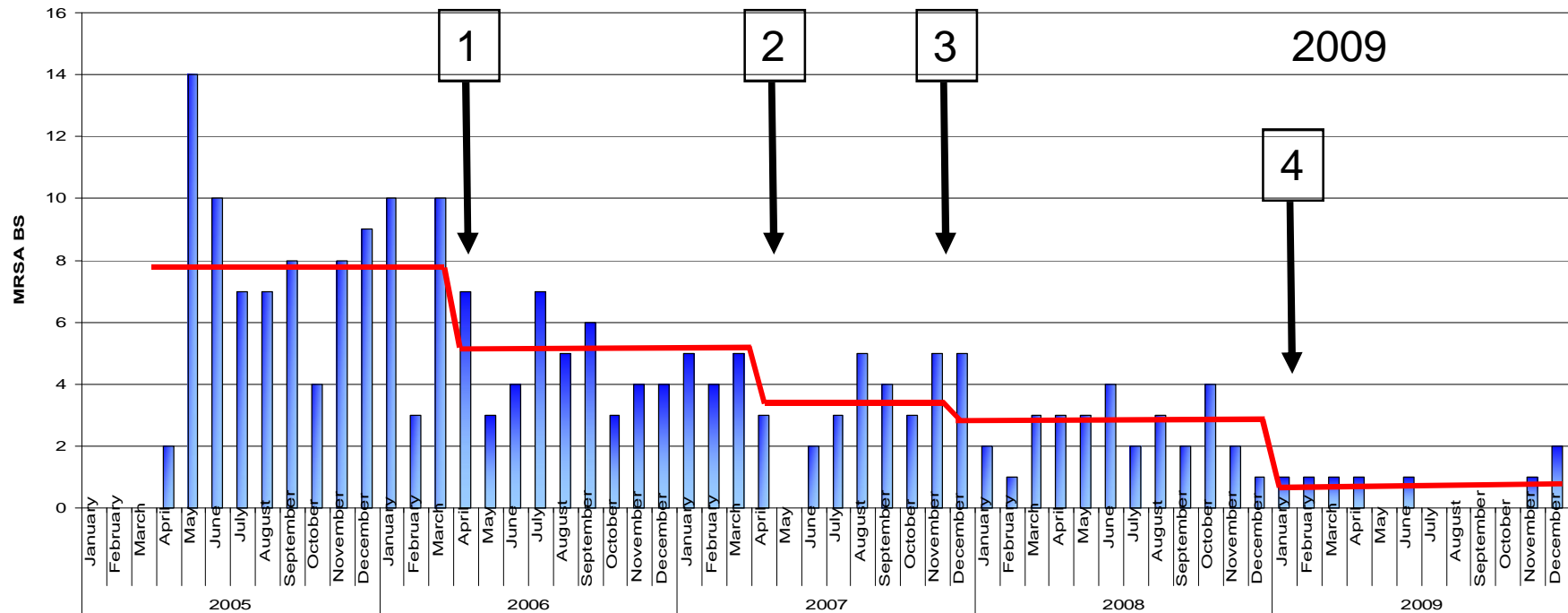
” Process:

- . Hand hygiene
- . Rescreening for MRSA after admission

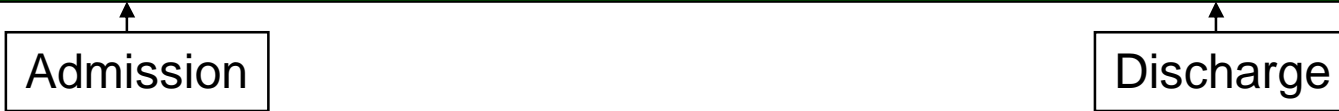
SUHT MRSA BSI summary 2005-06

- “ 92 MRSA bacteraemias
 - . 5 originated in community, 87 in SUHT
 - . 23 attributable deaths
 - . 70% acquired MRSA during this admission
 - . 36% venous catheter infection
 - . 40% source unknown

- “ Limited assurance of patient safety processes
- “ Staff lack awareness of policies/process
- “ Poor documentation



↔ 4. Jan 2009: Bio-burden reduction on admission



1. April 2006: Hand hygiene + Saving Lives care bundles

2. April 2007: Internal targets

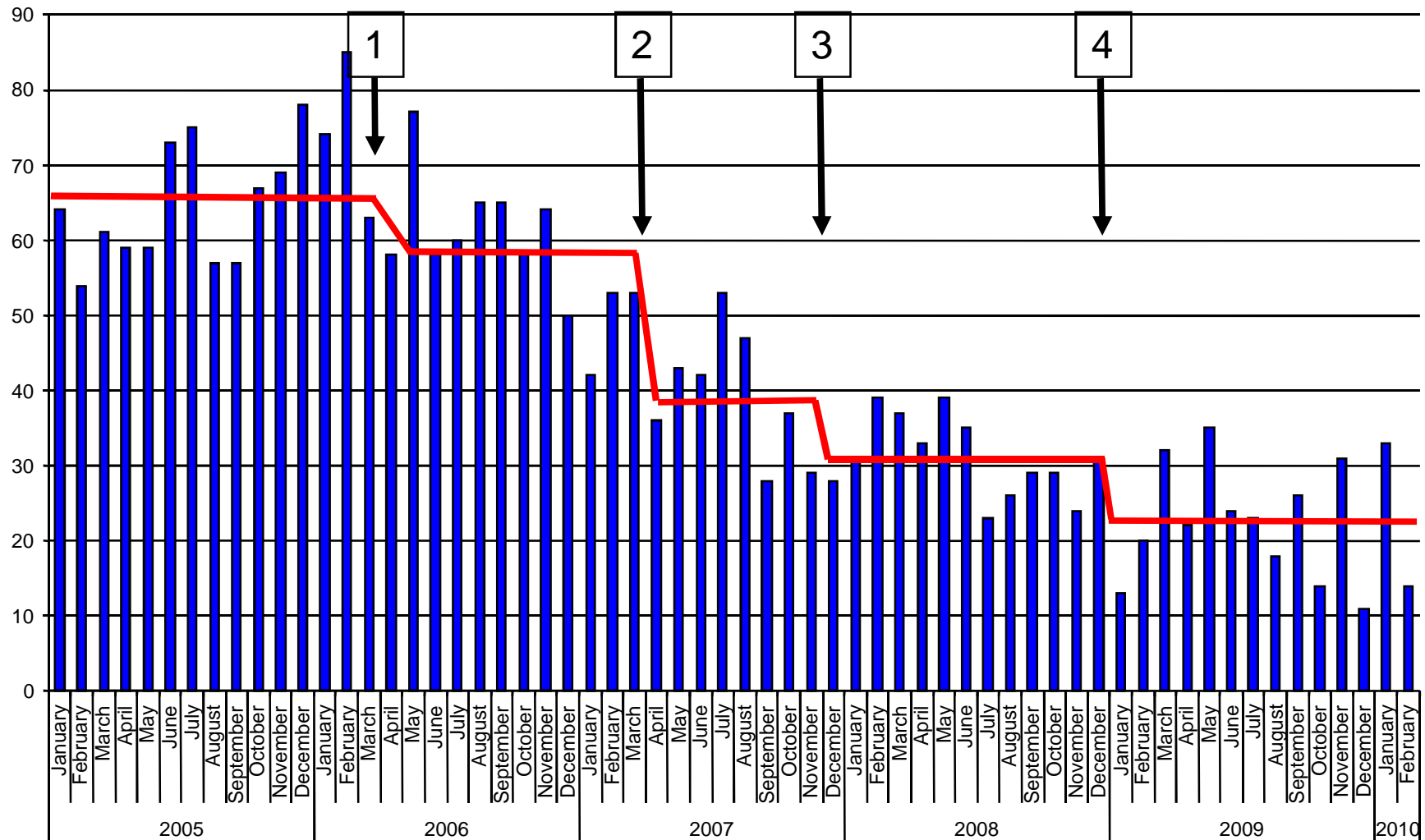
3. Nov 2007: Low risk antibiotic policy

SUHT MRSA BSI summary 2009-10

- “ 7 MRSA bacteraemias (92% reduction from 2005)
 - . 3 Pre-48h (2 related to recent hospital admission)
 - . 4 Post-48h related to current admission
 - . Up to 155 days between consecutive bacteraemias
 - . 29% acquired MRSA during this admission
 - . 2 invasive device infections
 - . No CVC infections
 - . no unknown sources

- “ Assurance of patient safety processes is much stronger
- “ Staff are aware of policies/processes
- “ Documentation improved

Acquisition of MRSA colonisation within SUHT 2005-2010

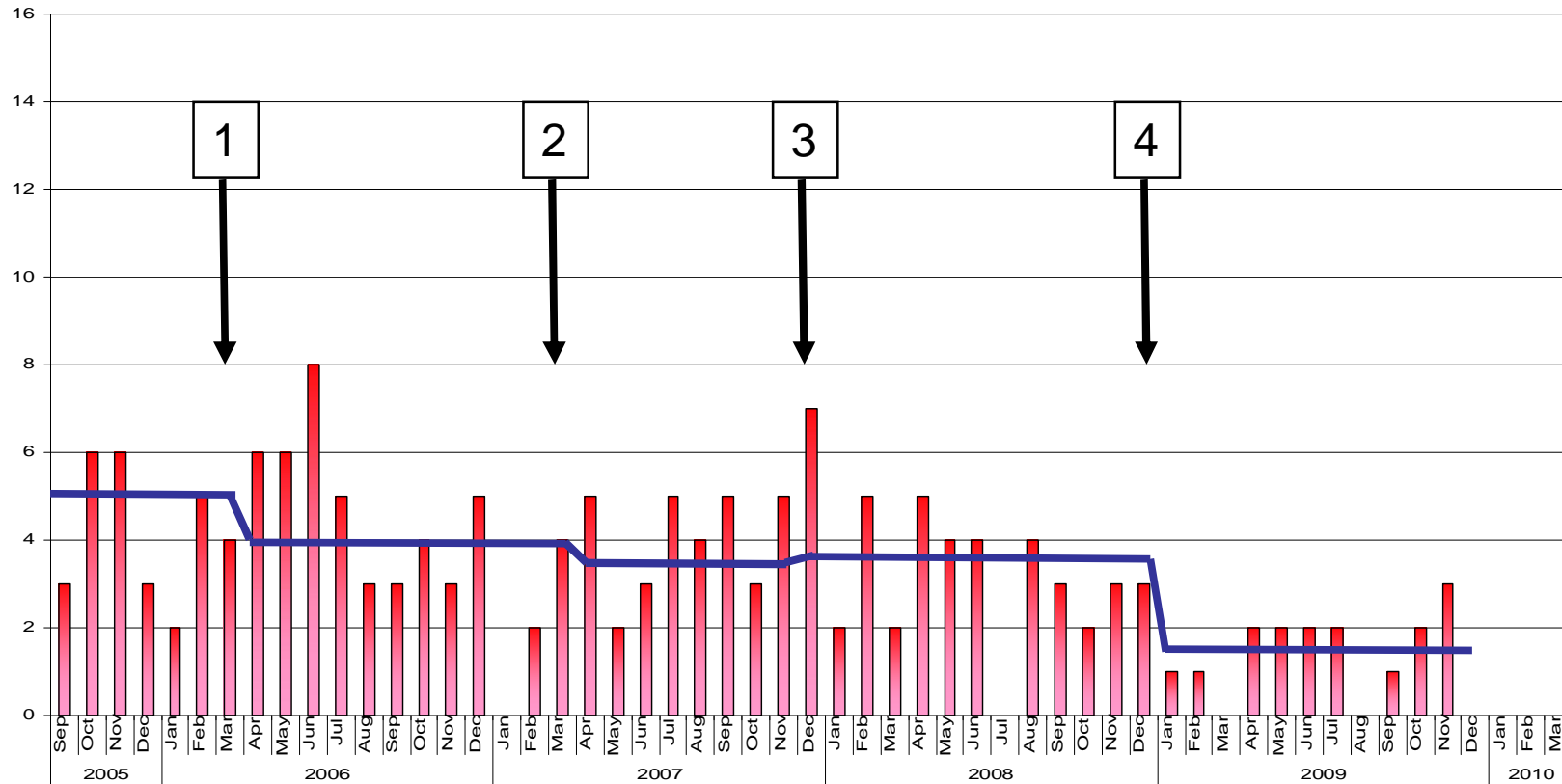


Preventing MRSA bacteraemia

MRSA bacteraemia performance is determined by 5 factors:

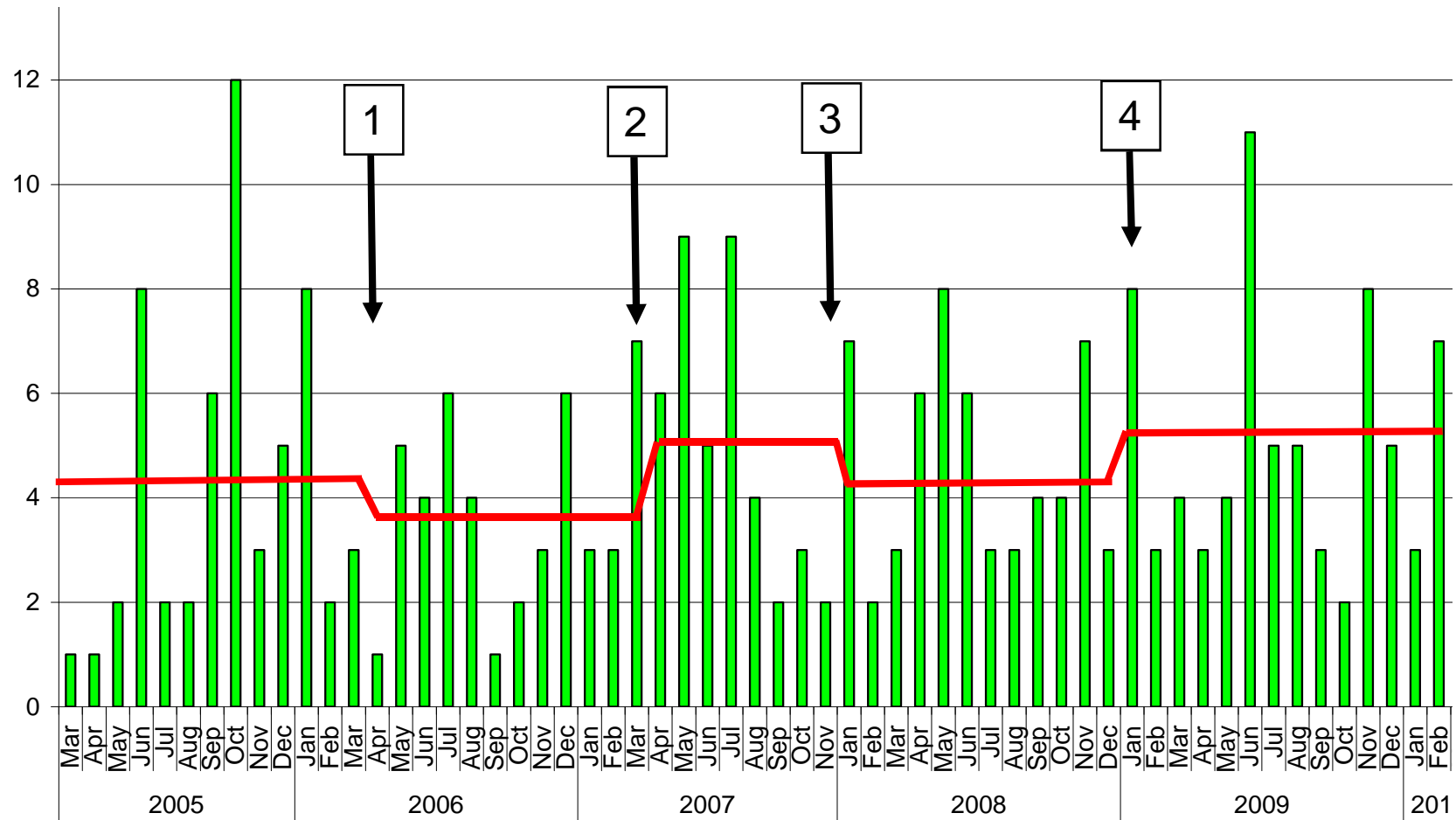
1. MRSA screening and bioburden reduction on admission
2. Handwashing before and after patient contact
3. Adherence to high impact interventions as detailed in %Saving Lives+care bundles
4. Adherence to low risk antibiotic policies
5. Internal targets for audit of the above
6. (Cohorting of MRSA+ve patients)

Impact of measures to control MRSA bacteraemia on post-48h MSSA bacteraemia

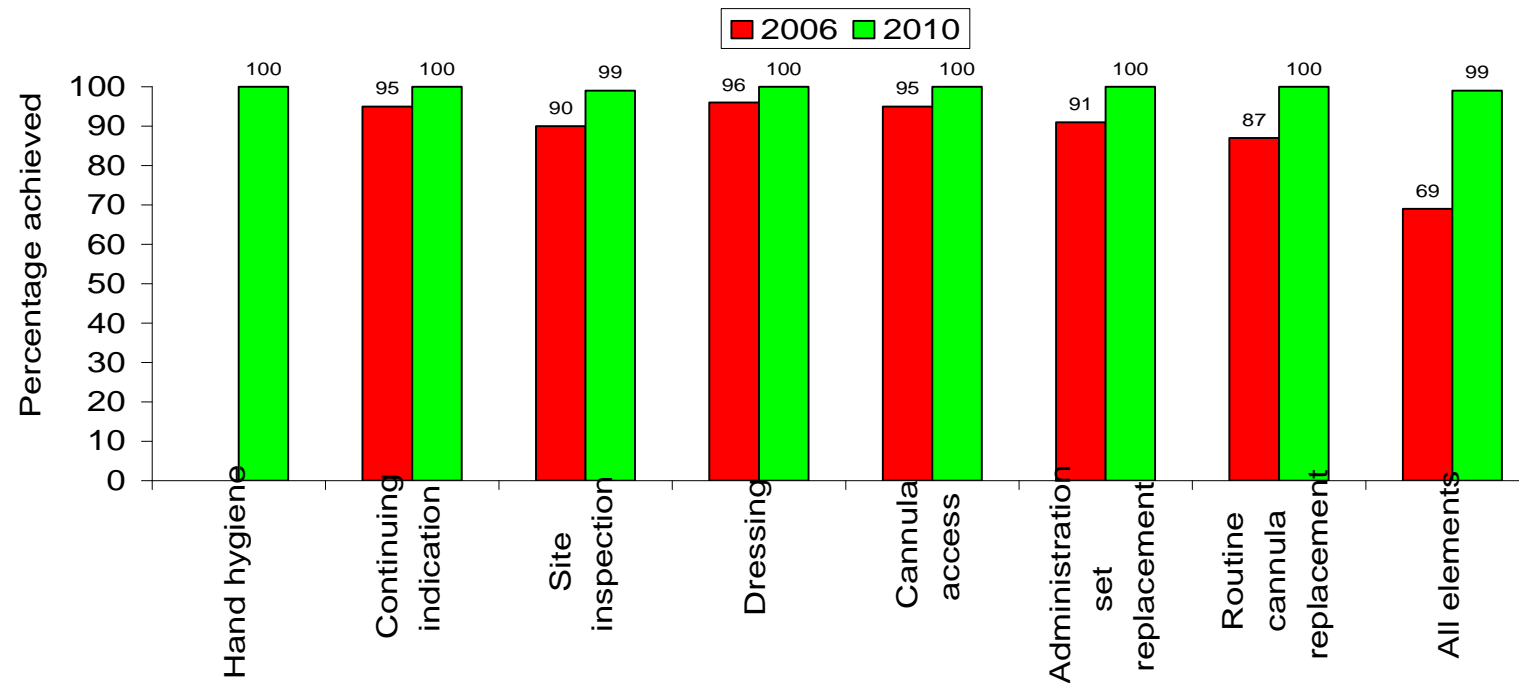


1. April 2006: Hand hygiene + Saving Lives care bundles
2. April 2007: Internal targets
3. Nov 2007: Low risk antibiotic policy
4. Jan 2009: MRSA screening and bio-burden reduction

Impact of measures to control MRSA bacteraemia on post-48h *E. coli* bacteraemia

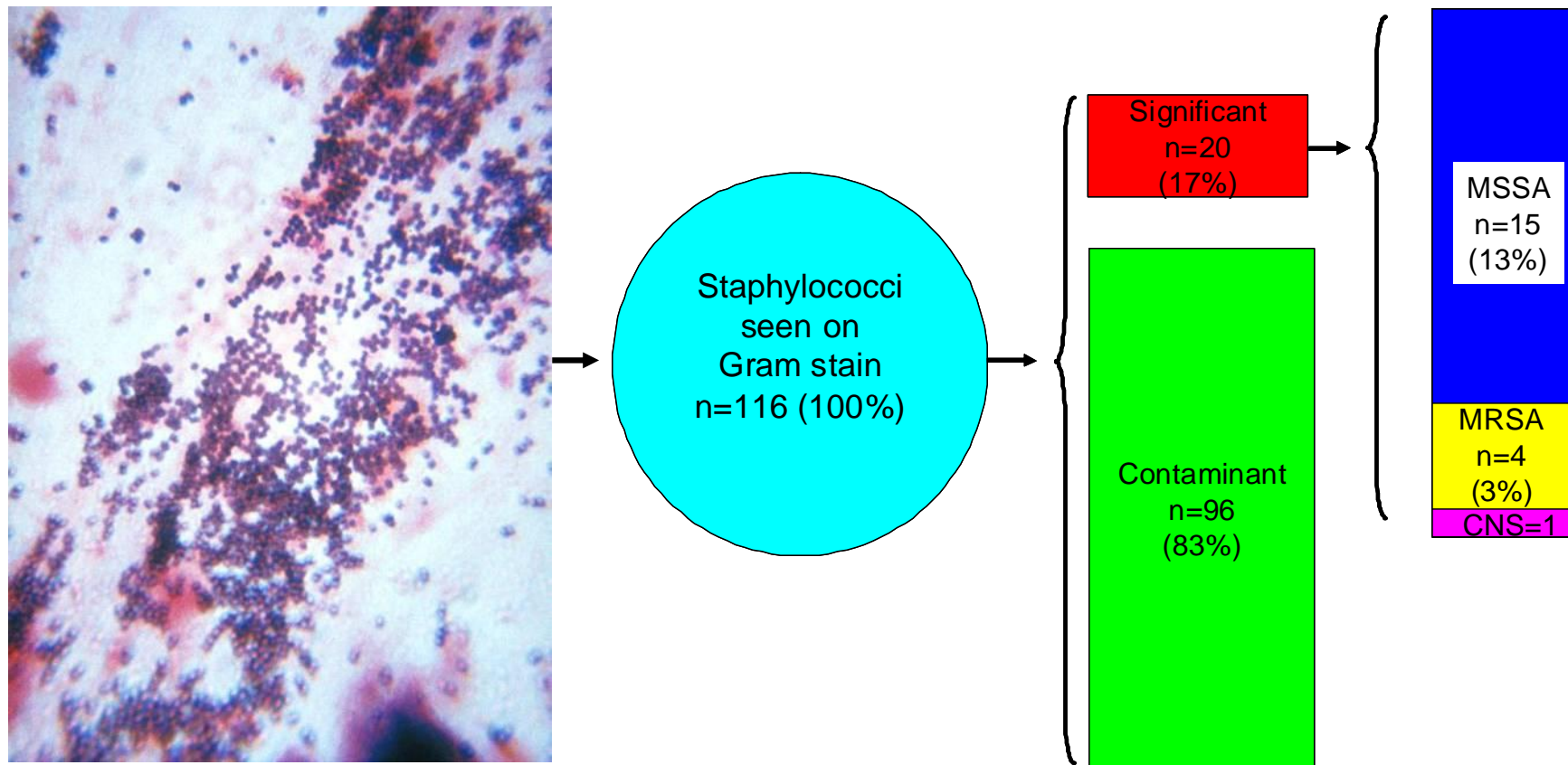


Audit of ongoing peripheral cannula care



- “ Self-assessment audits show improvement
- “ Independent assessments may be less satisfactory
- “ Systems to aid compliance: VIP scores
- “ Are we measuring audit efficiency rather than true compliance?
- “ Need for regular reinforcement

Results from 3500 blood cultures taken on an Acute Medical Unit in 2009



Managing *Staphylococcus aureus* bacteraemia

- “ Relapse and cure rates improve when there is compliance with patient-specific management guidelines¹
- “ Adequate duration of therapy is important in preventing metastatic complications and improving long term outcome²
- “ Improvement of long term outcome depends on recognition of patients at high risk of complications

1) Fowler et al. Clin Infect Dis 1998

2) Raad et al. Clin Infect Dis 1992

Clinical Risk Factors

Fever and/or sustained bacteraemia >3 days after commencement of appropriate antibiotics

Metastatic foci at presentation

Presence of prosthetic valve or predisposing valvular abnormality

COMPLICATIONS

Outcome	No. N=145	(% of total patients)
Complicated <i>S aureus</i> bacteraemia	57	39
(a) Metastatic infection	29	20
Infective endocarditis	6	4
Septic arthritis	6	4
Abscess/empyema	7	5
Osteomyelitis	4	3
Other	6	4
(b) Attributable mortality	24	16
(c) Recurrent SAB	12	8
Uncomplicated <i>S aureus</i> bacteraemia	88	61
(a) Uncomplicated	72	50
(b) Death due to other causes	16	11

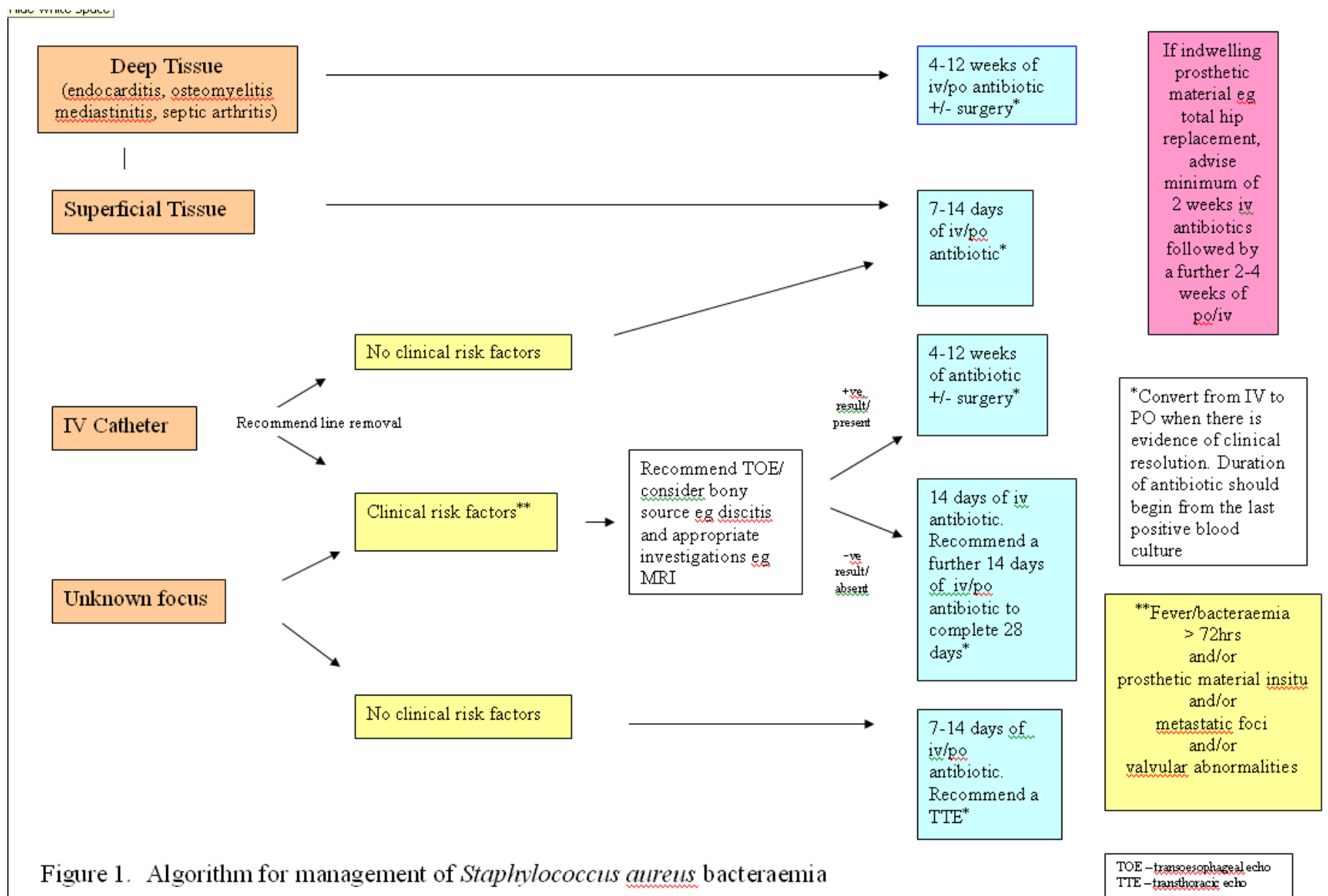


Figure 1. Algorithm for management of *Staphylococcus aureus* bacteraemia

Clinical care and management of 145 cases SAB in SUHT

- “ Median duration of IV . 11 days
(range 0-84 days)
- “ Median duration of total antibiotic . 14 days
(range 0-180 days)
- “ 61% had surveillance BCC sent
- “ 90% of patients with a removable focus, had focus removed
- “ 85% patients received appropriate Abs within 24 hrs

Non compliance	No of patients
Microbiology	
Failure to recommend surveillance BC	4
Recommended therapy too long	2
Recommended therapy too short*	3
No clear recommendations given	13
Medical Teams	
Failure to send surveillance BC	57
Failure to remove focus	8
Therapy for longer than recommended	11
Therapy for less time than recommended	7
Failure to perform TOE when indicated	11

*In 2 cases there was failure to take into account prosthetic material, and in the other case there was failure to recognise that the patient had taken >3 days to defervesce . all 3 patients relapsed

Outcome at 6 months

Outcome	Total n=145	MSSA n=86	MRSA n=59
Cure	61%	69%	49%
Attributable Mortality	17%	12%	24%
Relapse	8%	5%	11%

Glycopeptide therapy significantly associated with an increase in late complications

Outcome at 6 months by focus

Outcome	Deep soft tissue n=24	Line n=52	Superficial soft tissue n=34	Unknown n=35
Cure	58%	71%	59%	49%
Attributable mortality	20%	8%	12%	31%
Relapse	17%	2%	9%	3%