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England

PVL Staphylococcal aureus

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Staphylococcus aureus

1 in three people are colonised with Staphylococcus aureus

Causes abscesses, boils and wound infections – local infections

Can cause bacteraemia

Certain strains are resistant to Meticillin - MRSA

Some strains are sensitive - MSSA



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PVL Staphylococcal aureus

Panton-Valentine Leukocidin

A toxin that destroys white blood cells

Virulence factor in some strains of Staphylococcal aureus

Gene can be found in both MSSA and MRSA strains

Currently carried by <2% total UK isolates of Staphylococcal aureus

BUT responsible for 65% of SA boils and abscesses



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PVL *Staphylococcal aureus* cont'd..

This is not a new organism

First recognised in 1920/30's with wide spread of one phage type in 1950/60's causing outbreaks of boils

Most UK strains are MSSA, but major problem in USA hospitals with PVL producing MRSA

Incidence of PVL –SA has increased 10 fold in England in the last six years, possibly due to better ascertainment

PVL-SA infections are still generally uncommon in the UK but the incidence is increasing globally



National picture

Year	No. (%) PVL-MSSA	No. (%) PVL-MRSA	Total PVL - SA	Relative change year-on-year
2005	107 (48%)	117 (52%)	224	
2006	337 (68%)	159 (32%)	496	+ 2.2 fold
2007	729 (60%)	477 (40%)	1206	+ 2.4 fold
2008	1013 (58%)	724 (42%)	1737	+ 1.4 fold
2009	1573 (61.5%)	984 (38.5%)	2557	+ 1.5 fold
2010	1178 (53%)	1049 (47%)	2227	- 0.87 fold



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Signs and symptoms

Skin and soft tissue infections

Often recurrent

Boils, carbuncles, styes, folliculitis

Disproportionate pain and erythema

Necrosis

Most are sporadic, but occasional
clusters occur





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Invasive infections



Necrotising pneumonia

Necrotising fasciitis

Osteomyelitis, septic arthritis,
pyomyositis

Purpura fulminans



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Necrotising pneumonia

Often follows flu like illness

High mortality (up to 75%)

May affect otherwise healthy, young people in the community

Apparent rise in PVL pneumonia and possible association with influenza:

- 18 cases between 6th December 2012 and 7th January 2013
- All presented with severe pneumonia and required admission to ICU
- Several required ECMO.
- Most reported a flu-like prodrome and at least six confirmed with influenza B co-infection
- Enhanced surveillance – report awaited



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Risk factors – the five Cs

Compromised skin integrity and **C**uts

Close contact (skin to skin) including **C**ontact sports e.g. wrestling, judo, rugby

Contaminated items e.g. towels

Crowded communities with people in **C**lose **C**ontact, including households, gyms, prisons

Cleanliness



Local data

January 2010 to end May 2013 - 80 cases:

- 63 male
 - 43 military
- 17 female
 - 1 military

8 cases hospitalised

2 deaths:

- Pneumonia
- Post-op wound infection

