

personally, e.g., by a personal conversation with a healthcare provider so that emotional needs are met. VA-MRSA-carriers' needs can be met by providing them facts about MRSA.

#### **P1452** First outbreak of MRSA ST398 in a Dutch hospital

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**Background:** In the Netherlands the rate of Meticillin resistant *Staphylococcus aureus* infections in hospitals is still low, but community acquired MRSA occurs more frequently. This increase is mainly caused by so called 'non-typable' MRSA (NT-MRSA, = not typable by PFGE using SmaI) belonging to MLST type ST398. This strain is widely disseminated among pigs, veal calves and people in contact with pigs. Transmission within families as well as solitary cases of colonised healthcare workers have been described but until now no nosocomial transmission to multiple patients or HCWs had occurred.

**Outbreak:** In June 2007 MRSA was isolated from a diabetic foot ulcer of a patient on a surgical ward. Subsequent screening of contacts among patients and healthcare workers revealed four additional patients with MRSA colonisation and/or infection and five HCW who carried MRSA. All strains were resistant to tetracycline and non-typable by PFGE. Spa typing showed that all strains to be t567, a type previously found in pigs. None of the patients had contact with pigs and/or veal calves. One healthcare worker lived on a pig farm but neither she nor her partner came into contact with pigs.

**Conclusions:** We describe the first outbreak of NT-MRSA among patients and HCW on a surgical ward. While the source is not fully established it could be the HCW living on a pig farm. This outbreak makes clear that transmission on a larger scale can occur, even with NT-MRSA.

#### **P1453** Meticillin-resistant *Staphylococcus aureus* in horses and horse personnel at the Finnish veterinary teaching hospital, 2006–2007

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**Objectives:** We report the emergence of MRSA in horses at the Helsinki University Veterinary Teaching Hospital, in Finland during October 2006-June 2007.

**Methods:** After the first MRSA isolate in a horse was detected through routine wound infection surveillance in October 2006, active MRSA screening of horses at risk (hospitalised >24h) was implemented. Swabs were obtained from nostrils, oral mucosa, perineum, and wounds. Voluntary screening of personnel (nostrils and skin lesions on hands) was performed on two occasions in 2006 and 2007. MRSA was confirmed by PCR of *mecA* and *S. aureus* specific *nuc* genes. MRSA isolates were characterised by pulsed-field gel electrophoresis (PFGE), *spa* typing, SCCmec and multilocus sequence typing (MLST). A case was defined as a horse or staff member with MRSA positive culture result. MRSA positive horses were handled with barrier nursing precautions in isolation or cohorts. The importance of hand hygiene and aseptic techniques in different procedures were emphasised.

**Results:** The first MRSA cluster with 2 wound infections and 3 colonisations among 98 horses (attack rate, AR 5%) occurred during October-December in 2006; all 24 screened personnel was negative. The 5 isolates were resistant to macrolides, fluoroquinolones and aminoglycosides, and identical in PFGE. MRSA strains were of ST125, *spa* type t1399, and SCCmec IVA. The second outbreak appeared in May 2007, and was also detected through wound infection surveillance. This cluster involved 3 infections and 10 colonisations among 61 horses (AR 21%). The index patient was a horse which was hospitalised during the first outbreak but was MRSA negative at that time. In staff screening, 1/25 person was colonised with MRSA. All 14 isolates were resistant to aminoglycosides and tetracyclines, but susceptible to fluoroquinolones

and macrolides, were non-typable by PFGE and possessed ST398, *spa* type t011, and SCCmec IV.

**Conclusion:** These are the first MRSA infections detected in horses in Finland. ST125 has been only seldom reported in humans in Finland, whilst ST398 is a new strain type in our country. Routine wound infection surveillance in the hospital was crucial in detecting MRSA. Early outbreak control measures, active screening of patients and staff training are necessary to prevent spread of MRSA in veterinary premises. Emerging MRSA infections in animals can cause a public health risk since strains causing infections in animals cause infections in humans and vice versa.

#### **P1454** Prevalence of meticillin-resistant *Staphylococcus aureus* amongst residents and staff of nursing homes

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**Objectives:** It has been suggested that nursing homes can act as a reservoir for MRSA within the community and may contribute significantly to the spread of MRSA within hospitals when colonised residents are admitted for medical care. The aim of this study was, therefore, to determine the prevalence of MRSA amongst residents and staff in private nursing homes within the Northern Health and Social Care Trust (NHSCT) in Northern Ireland, and to compare strains isolated from nursing homes to those currently in circulation in local hospitals.

**Methods:** Swabs from the anterior nares were taken from 1,111 nursing home residents and 553 staff in 45 private nursing homes and processed by inoculation onto cefoxitin-containing chromogenic agar. After 48 h incubation, positive colonies were confirmed as MRSA by multiplex PCR using primers to detect staphylococcal 16S, *nuc* and *mecA* genes. MRSA strains were further analysed by restriction enzyme digestion (SmaI), followed by pulsed field gel electrophoresis (PFGE) and compared with strains isolated in local hospitals.

**Results:** The overall prevalence rate among residents was 23%, with individual home prevalences ranging from 0% to 73%. The overall prevalence among staff was found to be 7%, and again this ranged from 0% to 28%. Staff who were found to be colonised were employed in various positions throughout the nursing homes, ranging from care assistants to kitchen workers and maintenance. PFGE analysis showed that within a home, several MRSA strains could be present, but often, identical strains were shown to have colonised several individuals within one home. Staff were found to be colonised with the same strains as residents. No significant differences were determined by PFGE between nursing home and hospital MRSA isolates.

**Conclusions:** The results show that MRSA is prevalent within nursing homes in the NHSCT in Northern Ireland, although the extent of this prevalence may vary widely between nursing homes. Transmission of MRSA between nursing homes and hospitals is indicated by the identification of similar strains in both environments. Colonisation of staff was not limited to only those staff with a direct role in patient care and this possibly contributes to the transmission of MRSA within the nursing home environment. These results highlight the need for tailored infection control guidance for nursing homes.

#### **P1455** The general public's beliefs about meticillin-resistant *Staphylococcus aureus*: a Mental Models approach

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**Objectives:** Meticillin Resistant *Staphylococcus aureus* (MRSA) is becoming an increasing public health threat. Risk communication strategies should create public awareness in order to prevent misconceptions leading to non-compliance with infection control measures. Therefore, risk communication should be matched to the general public's beliefs about MRSA. These beliefs were determined in this study.

**Methods:** The Mental Models Approach was applied. Based on the literature, a conceptual model was created which was used as an

interview scheme to elicit (in)correct public beliefs (n=37). These beliefs served as items in a close-ended questionnaire (n=339) in order to estimate the prevalence of these beliefs among the general public.

**Results:** Although the majority of the general public (62%) had heard of MRSA via television (90%) and/ or newspaper (31%), great misconceptions exist. E.g., 26% of the public thought MRSA is a muscular disease, and 9% viewed MRSA as a synonym for repetitive strain injury.

After revealing the respondents that MRSA is also known as the hospital bacterium, they appeared to hold correct beliefs concerning risk factors and consequences of MRSA: 72% believed that MRSA may cause infections, 59% was convinced hospitalised MRSA-carriers are treated in isolation, that a weakened immune system increases one's risk of getting MRSA-infections (75%), and 62% was aware that MRSA can also be found outside the hospital. Respondents were less aware about prevention, reservoir, treatment, and transmission of MRSA: 70% incorrectly assumed vaccination would prevent MRSA-colonisation. While 39% thought MRSA can be found in the blood, only 16% assumed MRSA lives on the skin, and 64% of the sample was unaware that most antibiotics are ineffective against MRSA. 7% supposed MRSA is transmitted by insects, and 56% did not know whether MRSA could be found at cattle or not.

47% of the respondents believed that MRSA is a serious risk for society, although MRSA was not experienced as a personal health threat.

**Conclusions:** Although the Dutch general public recognises the well-known risk factors and consequences of MRSA and is slightly aware of its threat to society, many misconceptions exist. Important facts, like MRSA-prevalence among cattle and the presence of MRSA on the skin, are unfamiliar to the public. Risk communication should show attention to these misconceptions in order to raise public awareness and prevent non-compliance with control measures.

#### **P1456** Public knowledge and perceptions of MRSA: results of the Tayside Survey

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**Objective:** To establish levels of knowledge and concern about MRSA in the general public in Tayside, Scotland.

**Methods:** This opportunistic anonymous questionnaire survey was carried out in 15 general practice surgery waiting areas and two other establishments. Data collected included respondent demographics, whether and where respondents had heard of MRSA, knowledge of possible modes of transmission, treatment possibilities, level of personal concern, and the perceived accuracy of media information.

**Results:** Questionnaires were completed by 1000 adults (>16 years old). 59% of respondents were female. 802 (80%) were white Scottish with 4% from non-UK ethnic groups. The age range and ethnic distribution of respondents were representative of the Tayside population.

856 (86%) of those surveyed had heard of MRSA, 66% via the media. 591 (59%) knew it is a bacterium rather than a virus. The possibility of healthy carriage was known about by 467 (47%) of respondents, and 32% knew someone who had had MRSA.

Respondents blamed lack of staff hand washing (73%) and lack of hospital cleanliness (68%) for MRSA infection in hospitals. 50% thought a patient with MRSA infection could have been infected by an asymptomatic visitor, while 36% knew that infection could come from patients' own carriage. 47% of respondents knew that antibiotics could be used to treat MRSA.

32% of those surveyed were "a little worried" that if admitted to hospital they might get MRSA, 20% were "very worried" and 0.7% were "not at all worried". Only 59% of respondents stated their perceived level of risk of getting MRSA infection if admitted to hospital. Answers ranged from <1% (n=37) to 75+% (n=33) with most people selecting between 10% and 50%.

Respondents doubted the accuracy of information about MRSA in newspapers with 27% thinking it is inaccurate and 36% "not sure". 55% wanted more information about MRSA citing GP waiting areas as suitable locations.

**Conclusions:** This large survey has given new insight into the knowledge and perception of MRSA among the general public. This knowledge is reasonably good in some areas but lacking in others. The general public are sceptical of media reporting and want more information about MRSA.

#### **P1457** First case of MRSA spondylodiscitis treated successfully with linezolid

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**Introduction:** Vertebral osteomyelitis is primarily a disease of adults, with the majority of patients being more than 50 years old. Hematogenous spread from a distant site or focus of infection has remained the main route for pathogenesis of vertebral osteomyelitis. We present an MRSA-induced pyogenic spondylodiscitis in an immunocompetent host, treated successfully with linezolid alone, which occurred 4 months following a nosocomial MRSA decubitus ulcer infection.

**Case Report:** A 50-yr-old woman was admitted for severe back pain and low grade fever of 1.5 months duration. Her back pain had started after she had been discharged from a hospital where she had stayed for 4 months for cerebrovascular accident. Her medical history records also revealed that during her hospitalisation she had multiple episodes of decubitus ulcer infections with MRSA. Physical examination showed no remnants from stroke but limited activity due to severe back pain upon movement, including getting out of bed or even turning over in bed. Her severe pain had markedly restricted ambulation and other activities of daily living. She did not show any neurological deficits.

Thoracolumbar Magnetic-Resonance Imaging (MRI) was characteristic of T8-T9 spondylodiscitis with loss of height of both vertebral corpi, vertebral body and disk space enhancements and paravertebral soft tissue involvement with abscess formation. Fine needle aspiration of this region yielded Gram-positive cocci identified as Meticillin resistant *S. aureus*. She was started linezolid that she received for 12 weeks (600 mg iv, every 12 hours for 6 weeks and 600 mg po, every 12 hours for 6 weeks) and by the third week of therapy, she showed considerable improvement, her CRP level was normalised, need for analgesia disappeared and was able to move in bed and walk. The patient was monitored for adverse drug events but none occurred. She was discharged following an uneventful treatment course and is doing well.

**Discussion:** Our case is the first case of an MRSA spondylodiscitis, reported in English language literature, treated successfully with linezolid. We neither encountered any complications nor any surgical intervention was necessary. Controlled trials are necessary to show the efficacy or superiority, if any, of linezolid to glycopeptides in the treatment of MRSA spondylodiscitis following such promising case reports with satisfactory outcomes.

