traveller's diseases which might have led to underdetection of these parasites in Finland.

P2056 Infectious diseases of immigrants – present screening systems in Finland

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Objectives: The aim of this master's thesis study is to acquire detailed information on the current practices, applicability and acceptability of infectious disease (ID) screening of immigrants in different health service facilities in Finland. Suggestions on how to improve the prevailing screening practises is also asked.
Methods: The study is a cross-sectional survey utilising mixed-mode data collection method. Data is primarily collected with an electronic semi-structured questionnaire but a paper-and-pen version of the questionnaire is also available. Participants are health care professionals who work with immigrants in different settings: primary health care facilities, services for refugees, reception centres for asylum seekers, student health care facilities and occupational health clinics. Health care providers from 20 different municipalities are included, representing municipalities that received 64% of all immigrants and 76% of all refugees who came to Finland during 2007. Data collection will be done from October 2008 until the end of January 2009.
Preliminary results: Preliminary results are derived from answers of 73 respondents of whom 8 are medical doctors and 65 other health professionals: public health nurses, nurses and midwives. Over half of respondents consider ID screening very useful both for the immigrants and the society. ID testing is done to all immigrant groups and in all health care facilities. Most commonly screened IDs are hepatitis B and HIV (Table 1). Testing has identified cases of hepatitis B, tuberculosis, HIV and syphilis. 52% of the respondents are satisfied with existing instructions to conduct screening although 69% of the respondents would want to have new instructions and 86% state that more education is needed.
Conclusion: In Finland, ID screening is done to different immigrant groups and in different health care setting. Health care professionals consider screening to be useful but new instructions and education is requested.

Table 1: Testing of different infectious diseases from immigrants

Disease	Tests	% of respondents who had tested this from immigrants
Tuberculosis	Chest radiograph	60
	Tuberculin skin test	30
Hepatitis B	Surface antigen (HBsAg)	82
	Core antibody (HBcAb)	56
Hepatitis C	Hepatitis C Antibody (HCV-Ab)	66
HIV	HIV antibody	75
Syphilis	Cardiolipin	63
	Treponema Pallidum Haemagglutination Assay (TPHA)	33
	Treponema Pallidum antibody (Trpa-Ab)	22

Detection of ESBLs, AmpCs and MBLs

P2057 Rapid detection of extended-spectrum β-lactamase-producing Enterobacteriaceae: a randomised, investigator-blinded evaluation of culture-based approaches

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Background: Rapid and accurate detection of extended-spectrum β-lactamase-producing Enterobacteriaceae (ESBL-En) is crucial for effective infection control. We assessed 4 chromogenic media-ChromID, (bioMérieux), CHROMagar (CHROMagar Microbiology), Amber (AES Chemunex), and a yet to be introduced formulation, Chromogenic-ESBL (Oxoid) – and 1 selective medium – EbSA (Alpha-Omega) – for their ability to correctly identify ESBL-En using well-characterised isolates and spiked stool samples.
Methods: Eighty-four samples consisting of 16 ESBL-En (*E. coli*, *K. pneumoniae*, *Enterobacter* spp., *P. mirabilis*, *P. aeruginosa* harbouring CTX-M, SHV, TEM or PER), and 5 non-ESBL-En (*E. coli*, *K. pneumoniae*, *Enterobacter* spp., *P. mirabilis*) at concentrations of 10^1 CFU/ml and 10^6 CFU/ml, respectively, and each of the 21 isolates spiked into stools at 3 concentrations (10^6, 10^3, 10^1 CFU/ml) were randomised and spiral plated on the 5 media. Media were read by 5 blinded investigators for characteristic colonies after 24 and 48 hrs incubation. One putative ESBL-En colony from the selective medium and 1 colony of each colour/type from the chromogenic media for each plated sample was confirmed for species identification on biochemical tests and for presence of ESBL by double-disk synergy test. Mean sensitivity (SEN) and specificity (SPEC), and confidence intervals (CIs) were estimated for each medium by logistic regression model based on reader response for both incubation times, and both at the aggregated (any ESBL-En detected) and penalised level (correct species-colony colour correlation), using the penalised likelihood approach.
Results: Chromogenic-ESBL showed almost equal to 100% mean SEN and SPEC at both 24 and 48 hrs with the aggregated reader response and narrow CIs indicating a high precision of these parameter estimates (Table). Although, Chromogenic-ESBL also showed the highest SEN and a high SPEC with the penalised reader response for both incubation times, these values were lower than the aggregated response primarily due to misclassifications of *E. aerogenes* (TEM) and *P. aeruginosa* (PER) based on colony colour. Mean SENs for the other 4 media increased on average by 6.5% from 24 to 48 hrs. EbSA and ChromID showed almost equal to 100% mean SPECs at both incubation times, and the latter also with both reader responses.
Conclusions: Chromogenic-ESBL showed the best performance overall irrespective of sample concentration, reader or incubation time.

Table. Mean sensitivities and specificities of media for ESBL-En detection

Media for ESBL-En detection	24 hours				48 hours			
	Sensitivity		Specificity		Sensitivity		Specificity	
	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI
Reader response aggregated								
EbSA* (Alpha-omega, BE)	79.6%	75.3, 83.3	99.6%	94.6, 100.0	86.0%	82.6, 88.8	99.4%	91.8, 100.0
ChromID (bioMérieux, FR)	84.1%	80.2, 87.4	99.6%	94.7, 100.0	89.3%	86.3, 91.7	99.4%	91.9, 100.0
CHROMagar (CHROMagar Microbiology, FR)	77.5%	73.0, 81.4	96.2%	91.4, 98.4	84.4%	80.8, 87.5	94.1%	87.1, 97.4
Amber (AES Chemunex, FR)	54.4%	47.6, 61.0	74.0%	62.5, 83.0	65.3%	58.8, 71.2	64.4%	51.4, 75.6
Chromogenic ESBL (Oxoid, UK)	99.4%	97.6, 99.8	99.2%	95.0, 99.9	99.6%	98.5, 99.9	98.7%	92.3, 99.8
Reader response penalised								
ChromID (bioMérieux, FR)	75.9%	71.5, 79.7	99.6%	94.4, 100.0	81.8%	78.1, 85.0	99.5%	92.1, 100.0
CHROMagar (CHROMagar Microbiology, FR)	49.7%	44.8, 54.6	96.3%	91.5, 98.4	58.6%	53.7, 63.3	94.7%	88.3, 97.7
Amber (AES Chemunex, FR)	26.4%	22.2, 31.1	67.6%	57.2, 76.5	33.9%	29.0, 39.1	59.3%	48.4, 69.4
Chromogenic ESBL (Oxoid, UK)	82.2%	78.3, 85.6	98.1%	93.7, 99.4	86.9%	83.6, 89.5	97.3%	91.2, 99.2

*EbSA is a selective medium that does not differentiate the ESBL-En and thus the aggregated and penalised responses are the same.

P2058 A laboratory evaluation of chromogenic screening media for the detection of extended-spectrum β-lactamase producing bacteria

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Objectives: Since the 1980 s, the increasing incidence of plasmid-encoded extended-spectrum β-lactamases (ESBLs) has been of major concern. The prevalence of ESBL-producing bacteria across Europe is not well understood and is currently being studied by an EU project; Mastering hOSpital Antimicrobial Resistance (MOSAR). Treatment options for infections caused by bacteria possessing such plasmids are limited due to their resistance to β-lactams, monobactams and cephalosporins. In vivo resistance to aminoglycosides, fluoroquinolones and trimethoprim-sulfamethoxazole has also been widely reported, leaving carbapenems as the currently preferred therapeutic option. Routine screening for ESBL-producing Enterobacteriaceae is becoming more widely adopted. Traditional culture-based screening is labour