



# Multi-drug-resistant Bacilli detected in the Emergency Center of the Kure Medical Center and Chugoku Cancer Center



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## Objective

Recently, multi-drug-resistant Bacilli (MDRB) have been appearing and disseminating among major medical institutes all over the world. Gram-negative MDRB is appearing in Japan, and other novel MDRBs are being reported worldwide. We surveyed the MDRB detected in the Emergency Center (EC) of Kure Medical Center and Chugoku Cancer Center.

## Materials and Methods

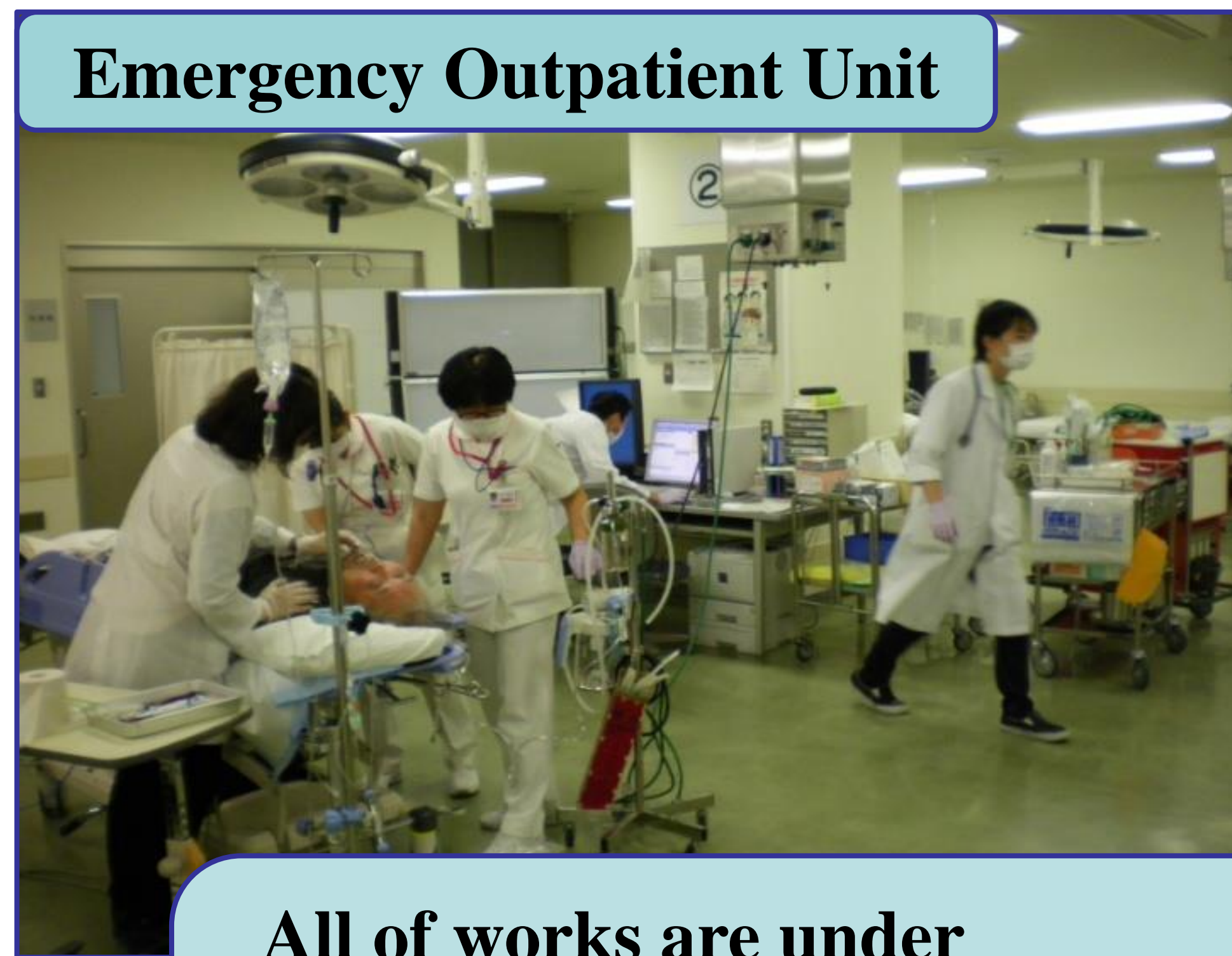
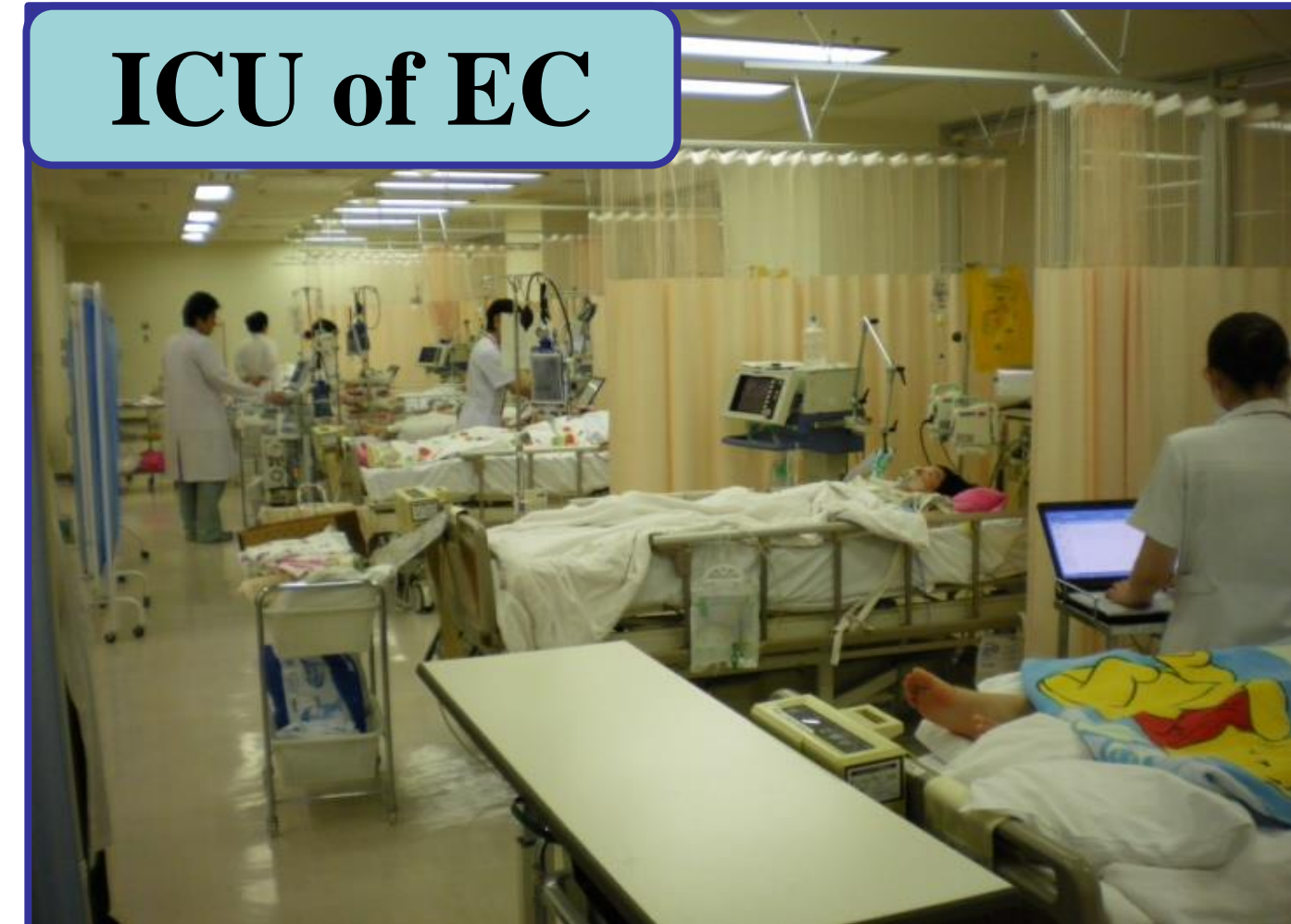
A total of 13,285 samples consisting of 3,882 sputa, 3,636 nasopharyngeal samples, 2,391 blood samples, and 3,377 other samples were taken from 6,489 patients between April 2006 and October 2011, and bacteriological data were examined, retrospectively.

## Results

MRSA in 793, ESBL-producing *K. pneumoniae* in 7, *E. coli* in 15, BLNAR in 4, PISP in 9, and *P. aeruginosa* resistant against two antibiotics in 1 sample were found. MRSA could be detected in 150 (83.8%) of 179 samples with *S. aureus* infection in 2006, and it decreased to 70.6% (101/143) in 2011 (Figure1). However, the detection rate of ESBL-producing *E. coli* increased from 2.9% (1/34) in 2006, to 9.9% (7/71) in 2011 among all *E. coli* detected (Figure2).

## Discussion

We examine the presence of MRSA intensively and its detection rate is always high. The decreasing tendency of MRSA detection rate overall may indicate that our current manuals for drug usage and protection of MRSA are effective to prevent additional dissemination of MRSA. Our current practices are good enough to prevent the dissemination of BLNAR, PISI, and ESBL-producing *K. pneumoniae* as well, since no increase of detection rates of these pathogens were found. Although ESBL-producing *E. coli* showed an increasing tendency in detection rate, they came from outside of the hospital, not by parallel infection in the hospital. Despite the good control of MDRB, close monitoring of MDRB detected is required.

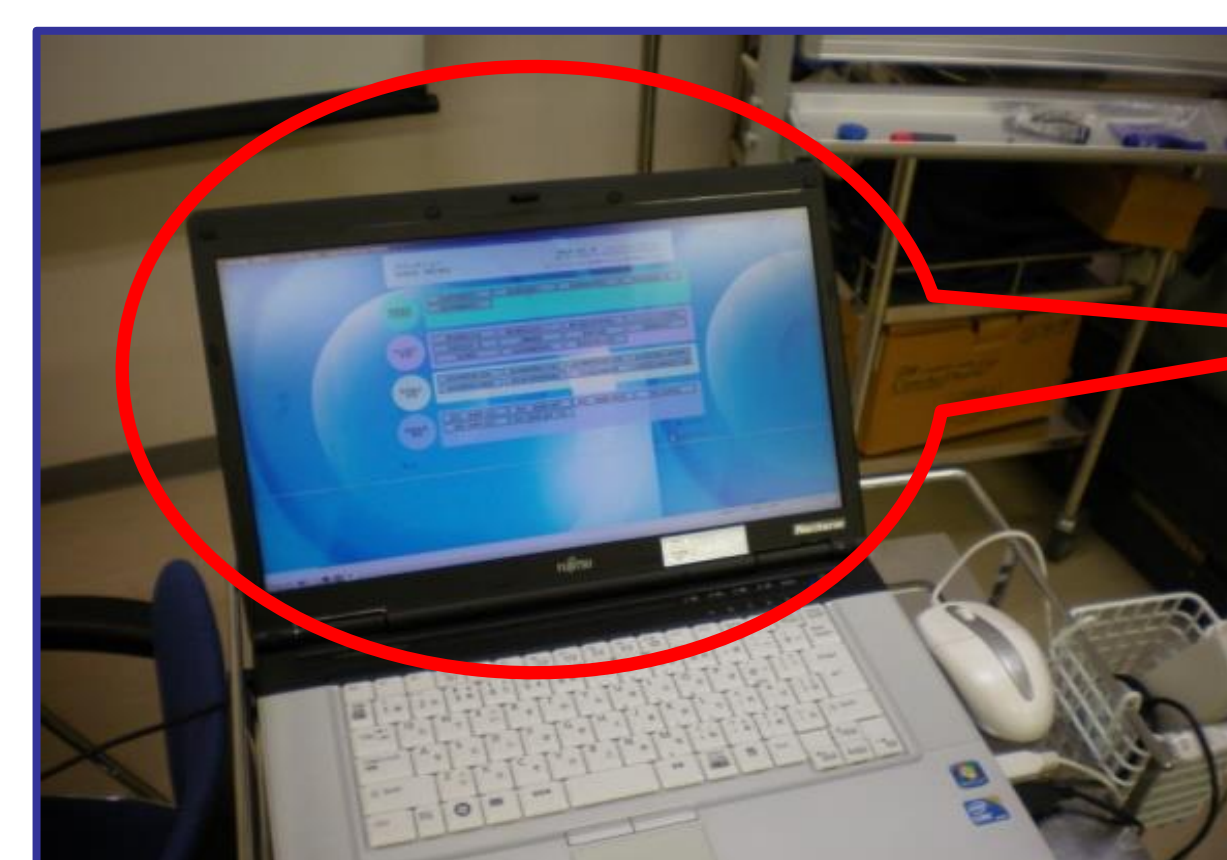


All of works are under Standard Precautions Concept; **MUST wear goggles, disposable gloves and mask**



To prevent contamination from devices, Respiratory Care Team advises the earliest possible removing point of artificial respirator

Infection Control Team instructs Hand-washing technique can be evaluated using black light



患者氏名	性別	年齢	科	病名	検査項目	結果	検出	検出	検出	検出	検出	検出	検出	検出	検出	検出	検出	検出	検出
11/21/2006	男性	65	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/22/2006	女性	78	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/23/2006	男性	55	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/24/2006	女性	62	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/25/2006	男性	70	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/26/2006	女性	68	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/27/2006	男性	60	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/28/2006	女性	72	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/29/2006	男性	63	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/30/2006	女性	67	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0
11/31/2006	男性	61	内科	肺炎	MRSA	陽性	0	0	0	0	0	0	0	0	0	0	0	0	0

Bacteriological data is saved in electronic medical chart

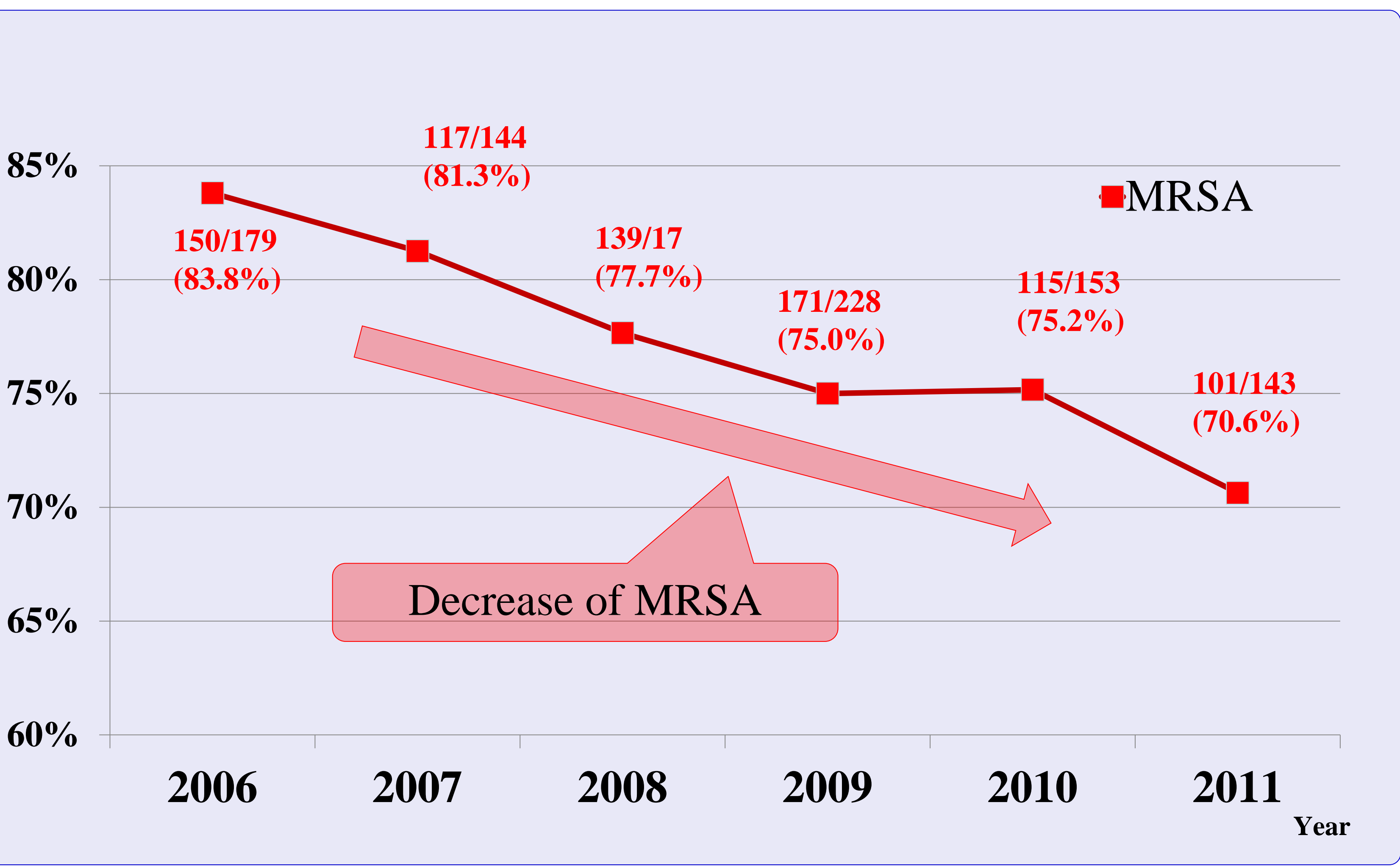


Figure1. Detection rate of MRSA in EC

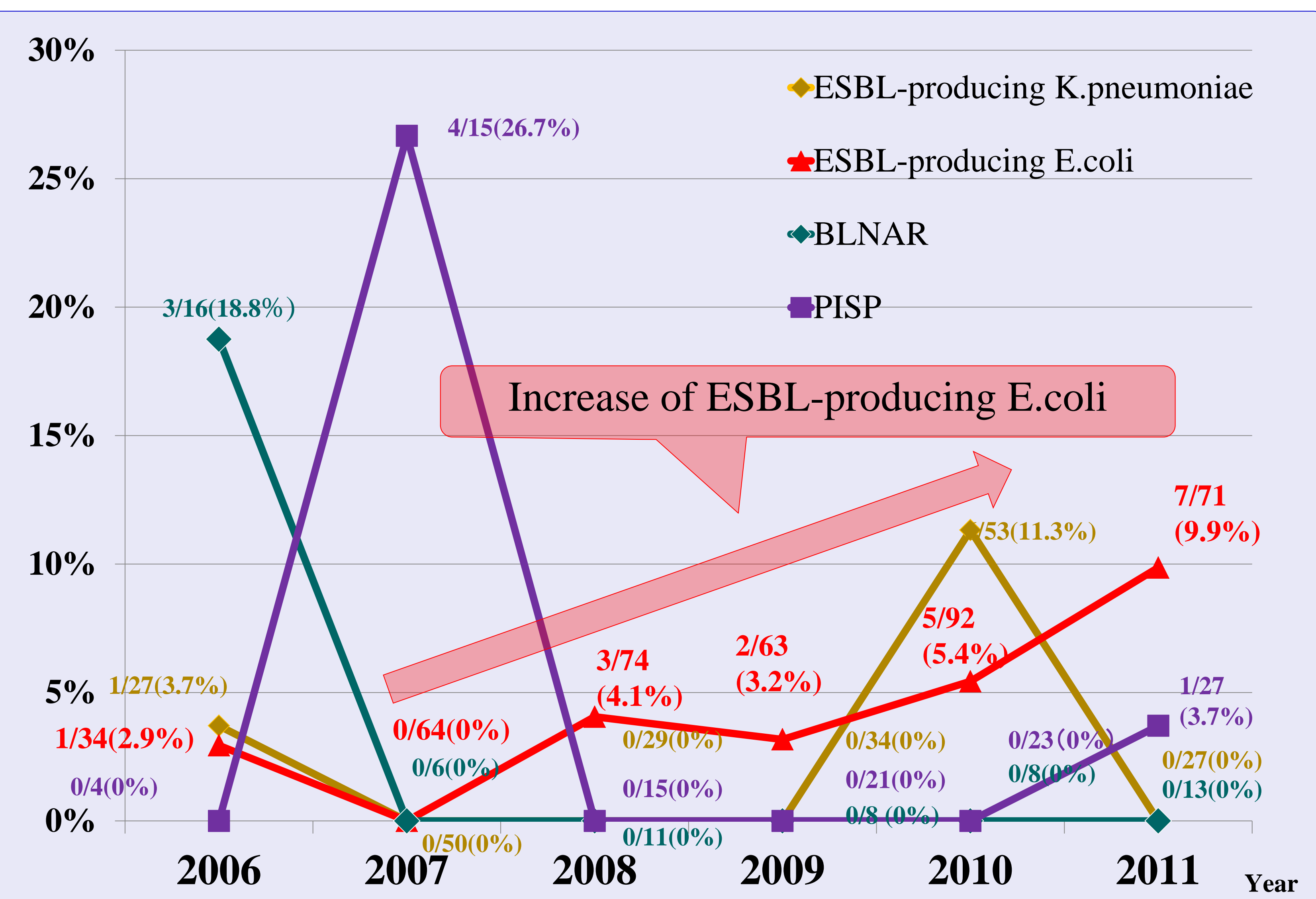


Figure2. Detection rate of MDRBs in EC, except MRSA