

## Extended-spectrum $\beta$ -lactamases (ESBLs) in Enterobacteriaceae confirmed in 2004

In 2004, ESBL-producing Enterobacteriaceae from 389 patients were referred to ESR and confirmed by either the CLSI/NCCLS confirmatory tests or the double-disc synergy (Jarlier) test. The majority of the confirmed ESBL producers were *Escherichia coli* (see table below). A summary of the ESBL-producing Enterobacteriaceae isolates, which have been confirmed since 1998, is shown in the table.

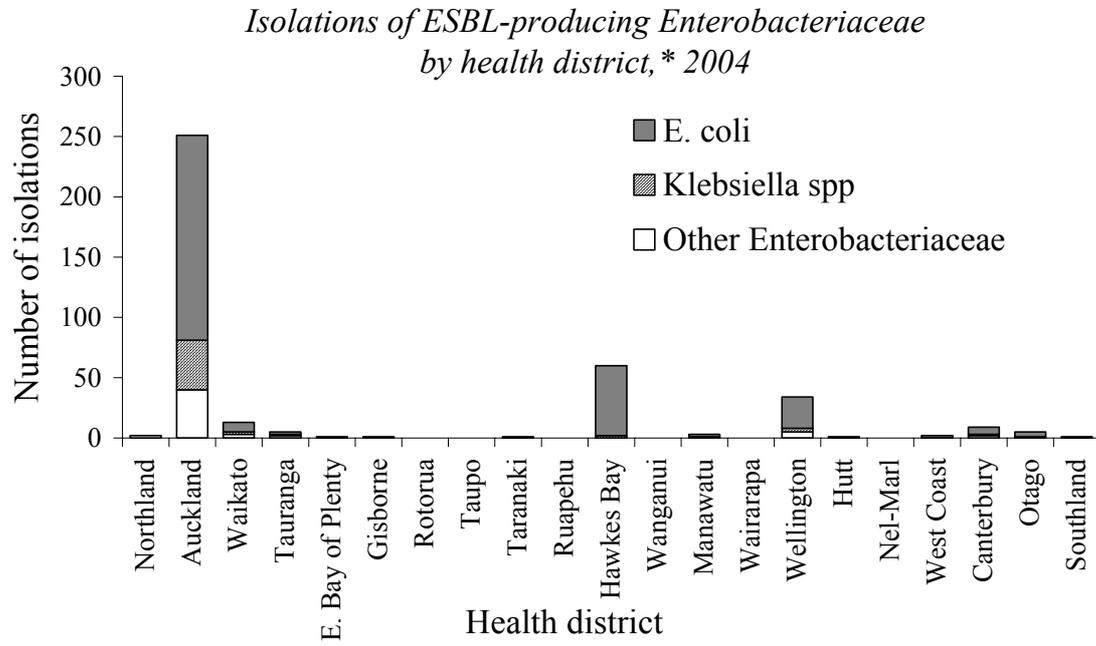
### Confirmed ESBL-producing Enterobacteriaceae, 1998-2004

	Year						
	1998	1999	2000	2001	2002	2003	2004
Number confirmed isolates	16	15	27	83	230	305	389
Species							
<i>Escherichia coli</i>	7	9	12	64	146	240	282
<i>Klebsiella</i> spp	3	3	9	5	30	14	50
<i>Enterobacter</i> spp		3	5	10	46	44	49
Other <i>Enterobacteriaceae</i>	6		1	4	8	7	8
Site							
Blood/CSF	0	2	4	7	14	10	19
Wounds*				10	13	10	23
Urine	7	9	14	38	125	172	227
Faeces*				5	47	84	76
Other	9	4	9	23	31	29	44

\* Isolates from wounds and faecal/rectal specimens are included in the 'other' category for the years 1998-2000

The CLSI/NCCLS disc confirmatory test compares the inhibition zones obtained with cefotaxime and ceftazidime discs alone and in combination with clavulanic acid. It is important to use both cefotaxime and ceftazidime. This test is specified for the confirmation of ESBL production in *E. coli*, *Klebsiella pneumoniae*, *K. oxytoca* and *Proteus mirabilis*. Among the 332 ESBL-producing isolates of these species confirmed in 2004, 3.6% (12) would not have been identified if only cefotaxime discs were used and 24.1% (80) would have been missed if only ceftazidime discs were used. These results emphasise the importance of using both cephalosporins in this test.

Most of the ESBL producers referred in 2004 were from the Auckland and Hawkes Bay health districts (see figure below).



\* based on the location of the referring laboratory