

Extended-spectrum β -lactamases (ESBLs) in Enterobacteriaceae confirmed in 2002

In 2002, ESBL-producing Enterobacteriaceae from 230 patients were confirmed by either the NCCLS disc or MIC confirmatory tests, or the double disc synergy (Jarlier) test. The majority of the confirmed ESBL producers were *E. coli* (see table below). The Hawkes Bay ESBL *E. coli* outbreak strain continued to be isolated throughout the year, with the strain being isolated from 49 people.

The 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* and *K. oxytoca*. Among the 176 ESBL-producing isolates of these species confirmed in 2002, 3.4% (6) would not have been identified if only cefotaxime discs were used and 19.9% (35) would have been missed if only ceftazidime discs were used. These results emphasise the importance of using both cephalosporins in this test.

A summary of the ESBL-producing Enterobacteriaceae isolates, that have been confirmed since surveillance commenced in 1996, is shown in the table.

Confirmed ESBL-producing Enterobacteriaceae, 1996-2002

	Year						
	1996	1997	1998	1999	2000	2001	2002
Number confirmed isolates	35	15	16	15	27	83	230
Species							
<i>Escherichia coli</i>	8	9	7	9	12	64	146
<i>Klebsiella pneumoniae</i>	6	5	3	2	6	5	26
<i>K. oxytoca</i>	18 ¹			1 ¹	3 ¹		4 ²
<i>Enterobacter</i> spp	1			3	5	10	46
Other <i>Enterobacteriaceae</i>	2	1	6		1	4	8
Site	na ³						
urine		11	7	9	14	38	125
blood/CSF		0	0	2	4	7	14
other		4	9	4	9	38	91

¹ Some of these *K. oxytoca* isolates may be hyperproducers of chromosomal K1 β -lactamase rather than an ESBL.

² In addition to the four ESBL-producing *K. oxytoca* isolates, six *K. oxytoca* isolates that were hyperproducers of K1 β -lactamase were identified.

³ Site data not available.