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Public health implications of carbapenam resistant enterobacteriaceae

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While carbapenamase producing enterobacteriaceae (CRE) have been reported since 1996, most of these reports have been of nosocomial infections. The NDM-1 and OXA-48 type of carbapenamases however are seen in both community and hospital acquired enterobacteriaceae infections. Enteric organisms capable of producing these carbapenamases have been isolated in the environmental samples such as surface water, public water taps in Indian subcontinent and Mediterranean region. Fecal carriage of enterobacteriaceae with NDM carbapenamases has been reported in outpatients in Indian sub continent and in tourists returning from this region. The gene encoding NDM is located in a very mobile genetic element. So the resistance is not clonally spread but via plasmid transmission. The spread of this resistance to other more pathogenic enteric organisms has already been reported. Gene encoding NDM-1, has been isolated in V *cholera*, and Salmonella sp. With the widespread environmental contamination and the possibility of spread of the plasmid bearing the genes to other bacteriae that cause food and water borne diseases is a cause of great public concern.