

Food safety regulation of poultry cuts levels of paralysis

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(Medical Xpress) -- A recent large decrease in campylobacter infection from fresh poultry in New Zealand has also resulted in a significant drop in a neurological condition which can result in paralysis or death.

Guillain-Barré Syndrome (GBS), an auto-immune condition which affects the nervous system, is known to sometimes follow campylobacter infection. GBS causes paralysis that often requires patients to be ventilated in the intensive care units of hospitals. Although patients with GBS usually recover over weeks or months, it can leave permanent disability, and is sometimes fatal (3% in [New Zealand](#)).

New Zealand used to have the highest reported rate of campylobacter infection in the world, until stricter regulations on the processing of fresh chicken were applied from 2006 by the [Food Safety](#) Authority

(now part of the Ministry of Agriculture and Forestry). These stricter regulations were followed by a 50% fall in campylobacteriosis notifications and hospital admissions in 2007.

This world-first study, published in the latest issue of the international journal *Emerging Infectious Diseases*, showed that this large decline in campylobacteriosis was followed by a highly significant 13% drop in the number of GBS cases.

“This result is a big plus for the health of New Zealanders as it shows, for the first time, that if you control campylobacteriosis you also cut the rate of this serious type of [paralysis](#),” says lead author, Associate Professor Michael Baker from the University of Otago, Wellington.

“Based on this research we can say that about 25 cases of GBS a year in New Zealand were being caused by campylobacter infection.”

Baker and his research colleagues identified 2056 people admitted to New Zealand hospitals with GBS over the last 23 years (1988-2010), giving a population rate of 2.3 cases per 100,000 a year, which is high by world standards.

“This study shows another reason why campylobacter infection should never be dismissed as just a stomach bug. People may end up paralysed for weeks or die if they develop GBS after eating food contaminated with campylobacter.”

The study provided important evidence linking GBS to campylobacter by showing that:

- annual rates of GBS and campylobacter infection were significantly correlated over the 23 year period;
- the 50% decline in campylobacter infection was associated with a

statistically significant 13% decline in GBS; and

- those hospitalised with campylobacter infection had a 320-times increased risk of being readmitted to hospital with GBS within the next month.

A co-author, Associate Professor Nick Wilson, hopes this research will encourage the Ministry of Agriculture and Forestry to use its regulatory powers to further lower the campylobacter contamination levels in fresh [poultry](#).

“New Zealand still has amongst the highest notified rates of campylobacteriosis in the world and poultry remains the dominant source,” he says. “We should not tolerate this unnecessary burden of disease that is still causing at least 70,000 cases of campylobacteriosis a year, 500 people being admitted to hospitals, and around a dozen new cases of GBS.”

“This work provides yet another illustration of the importance of strong evidence-based health and safety regulation. It also shows the very significant health and economic benefits that come from adequate regulation of food safety,” says Wilson.

“This intervention is now saving New Zealand at least \$60 million dollars a year in productivity and health care costs”.

The regulations introduced to lower campylobacter contamination of poultry in 2006 followed detailed research by Associate Professor Michael Baker and colleagues which confirmed the strong link between contaminated fresh chicken and extremely high campylobacteriosis rates in NZ consumers.

“We should not forget that campylobacter come from other sources as well as fresh poultry, so improvements in general food safety and water

quality are highly desirable. It's time we did a lot more to get the quality of the environment to match up to the "clean green" image New Zealand sells to tourists," says Associate Professor Baker.

Provided by University of Otago

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