| 07 | **DISASTER MANAGEMENT: OPTIMISATION MODELLING TO INFORM EMERGENCY FOOD STORAGE FOR ORGANISATIONS AND CITIZENS IN NEW ZEALAND** |

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Background New Zealand (NZ), is a country subject to a wide range of natural disasters, some of which (eg, floods and storms) may increase in frequency and severity with the effects of climate change.
Aim We aimed to use scenario development and linear programming to identify the lowest-cost foods for emergency storage.
Methods We used NZ food price data (eg, from the Food Price Index) and nutritional data from a NZ food composition database. Different scenarios were modelled in Excel and R along with uncertainty analysis.

Results A collection of low-cost emergency storage foods that meet daily energy requirements for men were identified for example, at a median purchase cost of $NZ 2.21 per day (equivalent to $US 1.45) (95% simulation interval=$NZ 2.04 to 2.38). In comparison, the cost of such a collection of foods which did not require cooking, was $NZ 3.67 per day. While meeting all nutritional recommendations (and not just energy) is far from essential in a disaster setting, if such nutritionally optimised foods are purchased for storage, then the cost would be higher ($NZ 7.10 per day). Where zero spoilage was assumed (eg, storage by a government agency), the cost of purchasing food for storage was as low as $NZ 1.93 per day.

Significance It appears to cost very little to purchase basic emergency foods for storage in the current New Zealand setting. The lists of the foods identified could be considered by organisations who participate in disaster relief (civil defence) but also by citizens.