

# Using the Systems-Practice Framework to Understand Food Allergen Management Practices at College Catering Operations: A Qualitative Study

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## ARTICLE INFORMATION

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## ABSTRACT

**Background** The number of individuals with food allergies or intolerances attending catered university residential colleges is increasing, and safe dining options are required to minimize the risk of allergic reactions and food-induced death.

**Objective** This qualitative research study sought to advance professional knowledge of the factors affecting allergen management practices, particularly pertaining to college foodservices.

**Design** Three catered residential colleges affiliated with a major university in New Zealand were selected as research sites. The study used an ethnographic approach and systems-practice theory as a framework for data collection and organizing results. Data collection techniques included document analyses (3 hours per site), observations (6 to 8 hours per site), focus groups with foodservice workers (30 to 45 minutes per site, n=16), and interviews with foodservice managers (45 to 90 minutes per interview, n=5). Notes and transcripts were coded through the process of thematic analysis using NVivo for Mac software, version 11.1.1, to identify factors affecting allergen management practices.

**Results** The main factors affecting allergen management practices at college foodservices included information provided by residents about dietary requirements; communication between residents and foodservice staff; systems for allergen management; attitude of foodservice staff; and college size.

**Conclusions** Detailed dietary information, effective communication with residents, sufficient resources, clarification of responsibilities, and thorough systems are required for staff to perform safe allergen management practices. Ultimately, successful implementation was predominantly determined by staff attitude. Foodservice managers are advised to identify motivators and address barriers of staff attitudes toward allergen management practices to promote successful implementation.

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**T**HE PREVALENCE OF FOODBORNE ALLERGIES worldwide has been documented to be increasing to what some are describing as epidemic proportions.<sup>1,2</sup> More children than ever before are being diagnosed with food allergies<sup>3</sup> and, although it is usually common to see remittance in the later childhood years, the number persisting through to adulthood is concerning.<sup>1,4</sup> Strict avoidance of the allergen of concern and the use of epinephrine in the case of an anaphylactic emergency is the only remedy for individuals with food allergies.<sup>5</sup> Responsibility for allergen avoidance and epinephrine management shifts from parent to child in adolescence.<sup>6</sup> Pair this transition with adolescents leaving home to live at a university or college and their risk-taking behavior can have fatal consequences.<sup>6-15</sup> In fact, the most food-induced allergic reactions and deaths have occurred among this age group when they eat away from

home, with many of these incidents occurring at college cafeterias.<sup>7,8,10</sup> This presents a challenge for college catering operations, as many adolescents and young adults attend a catered residential college in the first year of university. Even though primary allergen management responsibility belongs to the individual,<sup>13</sup> this issue directly affects foodservice operations' leaders and managers who are responsible for providing safe and suitable meals and, therefore, must have successful allergen management practices in place.<sup>16</sup> Effective systems for allergen management are already being explored,<sup>17,18</sup> including best-practice guidelines for allergen management in college foodservices and training of foodservice staff.<sup>19-22</sup>

Studies investigating allergen management have been mostly quantitative and predominantly assessed foodservice staff knowledge of food allergies.<sup>23-30</sup> Only a few studies have

## RESEARCH

focused on allergen management practices, with scant literature specific to the college foodservice setting.<sup>26,31</sup> Harris and colleagues<sup>32</sup> argue that the field of dietetics is enriched by qualitative research, especially when it can add to current quantitative research to provide a more complete exposition of a phenomenon. As well as having a leadership role in individuals' management of their allergies,<sup>33</sup> registered dietitian nutritionists and nutrition and dietetics technicians, registered, hold leadership and management positions in foodservice operations, including college and university foodservices. They, along with their foodservice personnel, are integral to the implementation of successful allergen management practices. For this reason, a qualitative research approach has been recommended for investigating allergen management in order to evaluate processes and understand reasons for outcomes.<sup>32</sup> It also has great potential to provide a depth of understanding that quantitative studies cannot.<sup>34</sup> Unlike the quantitative approach, qualitative research does not attempt to understand data of a large population, its strength lies in its ability to produce highly detailed data from a small sample.<sup>34</sup> However, few qualitative studies on allergen management exist<sup>28-30</sup> and, to the best of the authors' knowledge, there are no qualitative studies investigating allergen management practices in a college foodservice setting. This research contributed to existing literature by asking: What are the requirements for and challenges of successful allergen management practices in college catering operations? An ethnographic approach was adopted and the recently developed systems-practice theory was used as a framework.<sup>35</sup>

## METHODS

A qualitative, ethnographic approach was taken to investigate foodservice staff's allergen management practices throughout the processes involved in providing college residents who had food allergy- or food intolerance-related dietary requirements with safe and suitable meals. These meals are referred to as "alternative meals" in this article. Ethnography has been defined as the art and science of describing a human group or culture, incorporating institutions, interpersonal behaviors, material productions, and beliefs.<sup>36</sup> Ethnography was a novel and appropriate approach for this research, given the lack of literature in this area and LeCompte and Schensul's<sup>37</sup> recommendation to use this approach to explore factors associated with a research problem in order to identify, understand, and address them, especially when they are not known.

## Participant Selection

Three university residential college foodservices run by the same catering company in one of New Zealand's major cities were selected as research sites. The Institutional Review Board (University of Otago, New Zealand) approved the study protocol and all participants provided written informed consent. A range of college sizes was chosen (termed *small college*, *medium college*, and *large college*) to see whether allergen management practices were influenced by the number of residents provided for (see the [Table](#)). Each college prepared meals in their on-site kitchen using a cook-fresh production system and meals were served from the kitchen and dining room area, confining allergen management practices to these areas. The medium college also provided food to a satellite kitchen at a smaller college, which enabled allergen management practices in the distribution system to be investigated. Each college made meals for residents, college management staff, and registered guests every day of the week. All colleges were comparable in that they had the same overarching allergen management policies, given that they were all overseen by the same catering company.

## Data Collection Tools

The data collection approach for ethnography has been described as examining, experiencing, and enquiring. Examining documents detailing what has already been done; gaining first-hand experience in naturally occurring events through observation; and enquiring what is actually going on through focus groups and interviews.<sup>38</sup> Therefore, the data collection techniques in this study were document analyses, observations, focus groups, and interviews. Documentation analysis examines material related to the research topic that has already been produced by others<sup>38</sup> so the researchers identified all documents relating to allergen management. During observations, participants were observed in their natural setting, thereby providing objective data.<sup>38</sup> For each focus group and interview, the researchers developed guides to use as a framework for discussion, as recommended by Kruger and Casey.<sup>39</sup> Data collection was carried out over a 3-week period, with 1 week at each of the college foodservice sites. The researchers were known to some of the foodservice staff at two of the sites due to previous work- and university study-related experience.

## Systems-Practice Framework

In combination with ethnography, the recently developed systems-practice theory<sup>40</sup> was used as a framework in the

**Table.** Number of meals produced per day at each of the colleges<sup>a</sup> and the number and percent of these meals that had to be safe and suitable for food-allergic and food-intolerant residents<sup>b</sup>

Variable	Small college	Medium College		
		Satellite kitchen	Medium college	Large college
No. of daily meals	471	375	990	1,596
No. of allergen-friendly meals (% of total)	93 (20)	30 (8)	75 (8)	114 (7)

<sup>a</sup>The colleges were termed *small college*, *medium college*, and *large college*. The medium college catered for a smaller college from its kitchen and this one was referred to as the "satellite kitchen."

<sup>b</sup>Information as of May 2016.

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