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## Introduction

Hazard Analysis Critical Control Point (HACCP) is the most widely used food quality and safety assurance system in the world! By creating a standardized food process the HACCP plan ensures that deviations which could lead to the introduction of new hazards do not occur.<sup>2</sup> In Canada HACCP is not required for small food establishments. Small businesses have difficulty implementing HACCP plans due to the cost, technical expertise and heavy emphasis on documentation they require.<sup>3</sup> However, the basic principles of HACCP may still be in place in small businesses, and Toronto Public Health incorporates HACCP principles in their education of small business owners.

This study will explore current food safety practices in small to medium restaurants which have fewer than four locations in order to inform Toronto Public Health on the results of their education practices as well as to point out possible areas to focus interventions on in future.

## Methods

Survey for owners and managers of small to medium restaurants. Given out to restaurants in Toronto, ON (East York)

- Q1 How old are you?  
Q2 How many years have you spent working in the food industry?  
Q3 Is your first language other than english or French?  
Q4 What is your highest level of education?  
Q5 Do you have specific education in food safety? If yes please specify.  
Q6 I have specific food safety and quality requirements and I communicate these requirements to my suppliers.  
Q7 I feel that food safety is of great importance to my business's success.  
Q8 I feel that food safety requirements are difficult to achieve and use valuable time and resources.  
Q9 Learning more about food safety is important to me.  
Q10 Preventing cross contamination of food products via food handlers and contaminated utensils and surfaces is extremely important in the prevention of foodborne outbreaks.  
Q11 Do you have a food safety plan set out in writing?  
Q12 How many employees does your location employ?  
Q13 Are the majority of your employees part time or full time?  
Q14 Do you conduct in house training on food safety procedures?  
Q15 If yes, what is the duration of your training?  
Q16 Do you consistantly use a thermometer to check the temperatures of your food when foods are being stored in hot/cold holding units?  
Q17 Do you consistantly use a thermometer to check the temperatures of your food when reheating chilled foods?  
Q18 Do you consistantly use a thermometer to check the temperatures of your food when checking to see if food has been cooked well?  
Q19 Do you set limits (cooking temperatures, pH etc.) on these points to ensure that they are effective?  
Q20 If yes, do you monitor your critical control points to ensure that they meet these limits?  
Q21 If yes, do you keep written records of the results of your monitoring?  
Q22 Do you have written instructions about what to do if your critical control points aren't met?  
Q23

## HACCP Steps

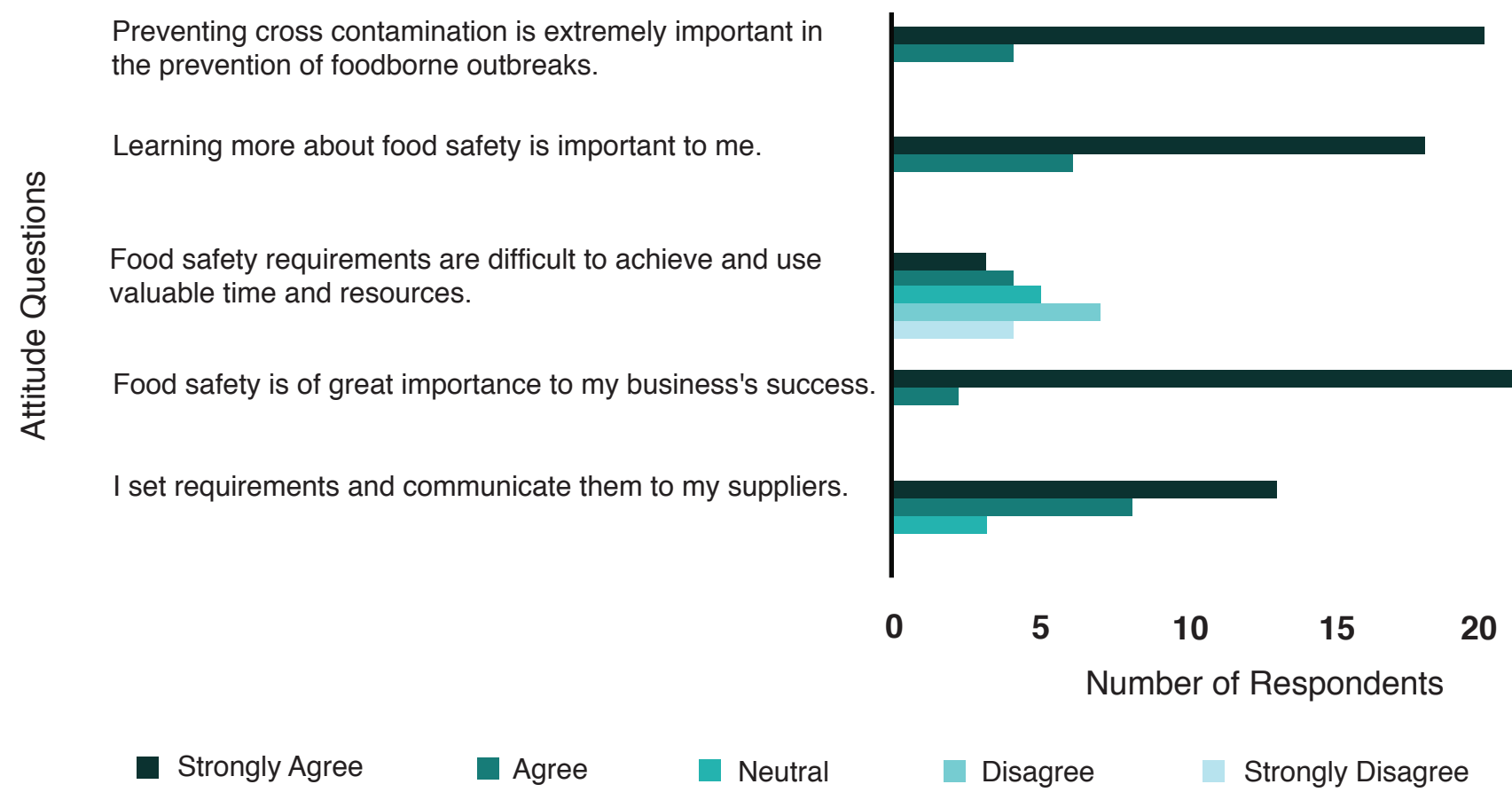
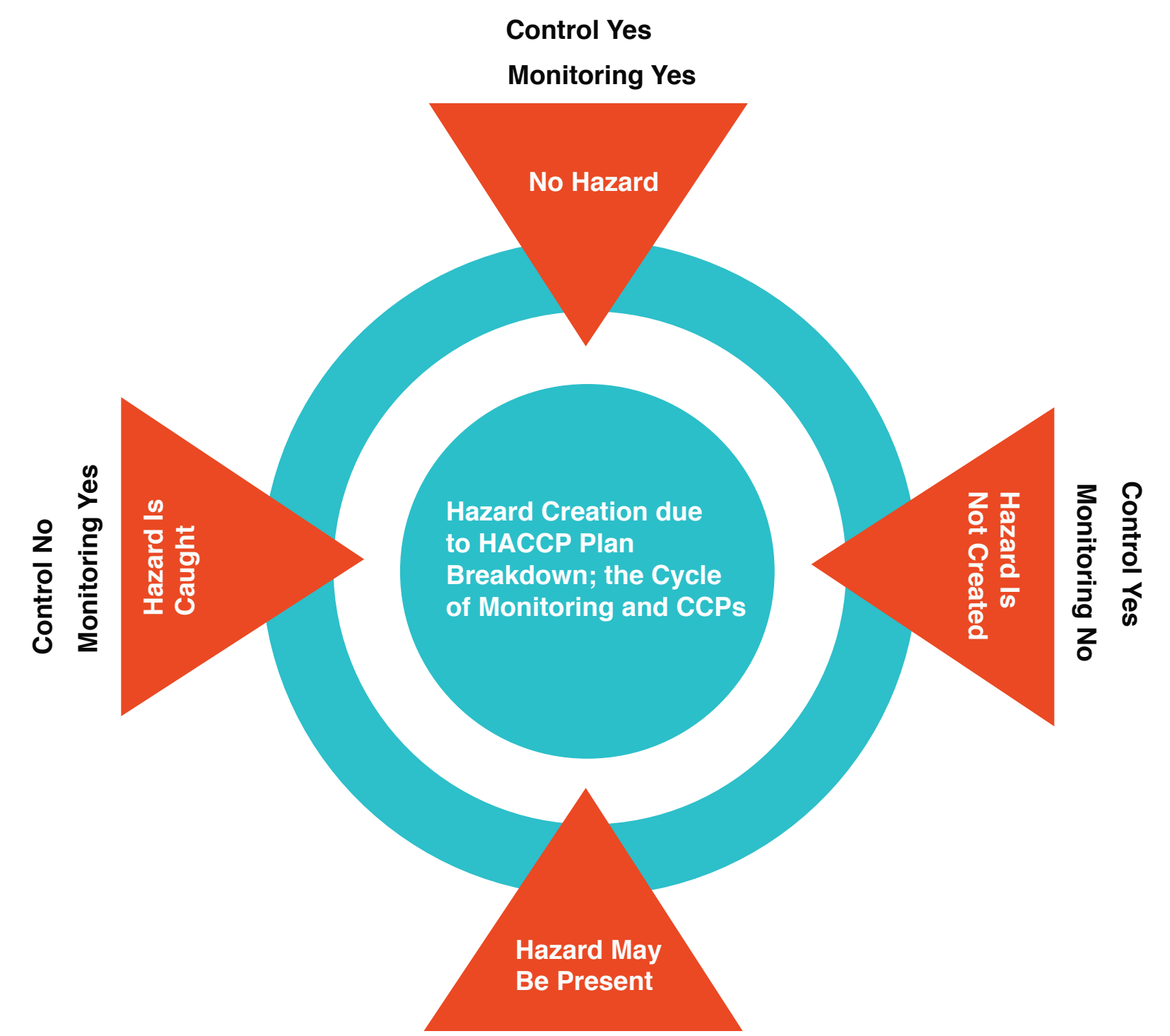
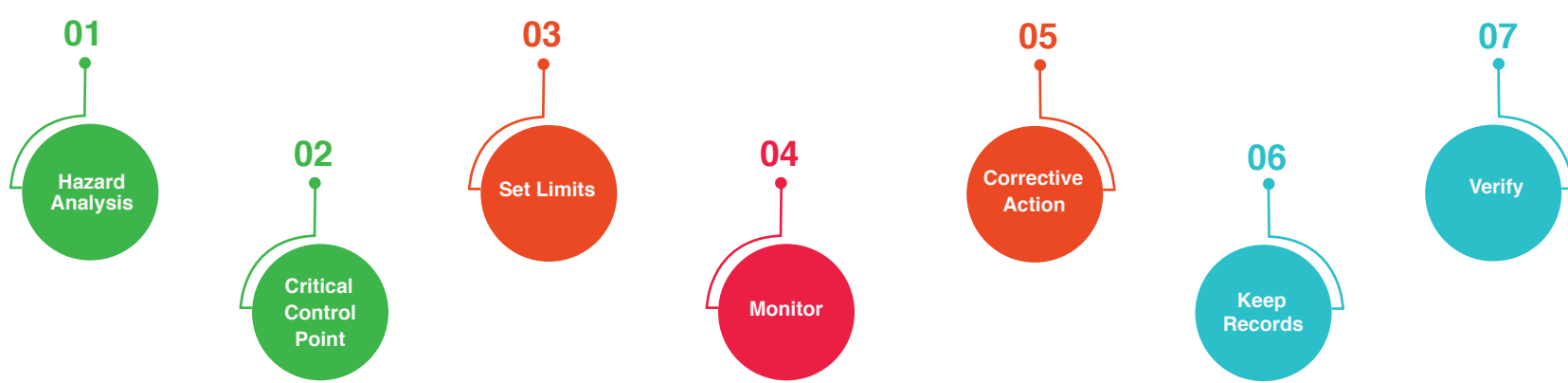


Figure 1. Responses to Attitude Questions. n=24. The most positive response overall was for "food safety is of great importance to my businesses success", followed closely by "preventing cross contamination is extremely important in the prevention of foodborne outbreaks".

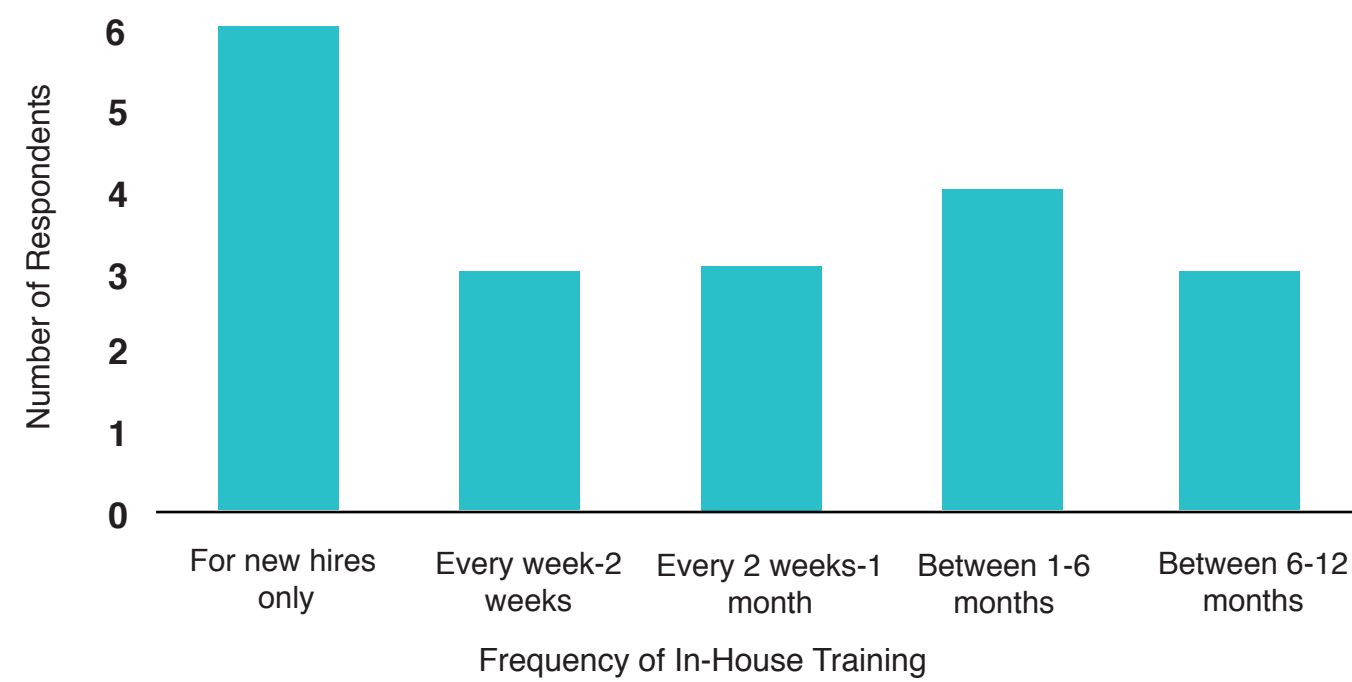


Figure 2. Frequency of in-house training for those respondents who indicated they conduct it. n=20. New Hires Only training is the most commonly conducted.

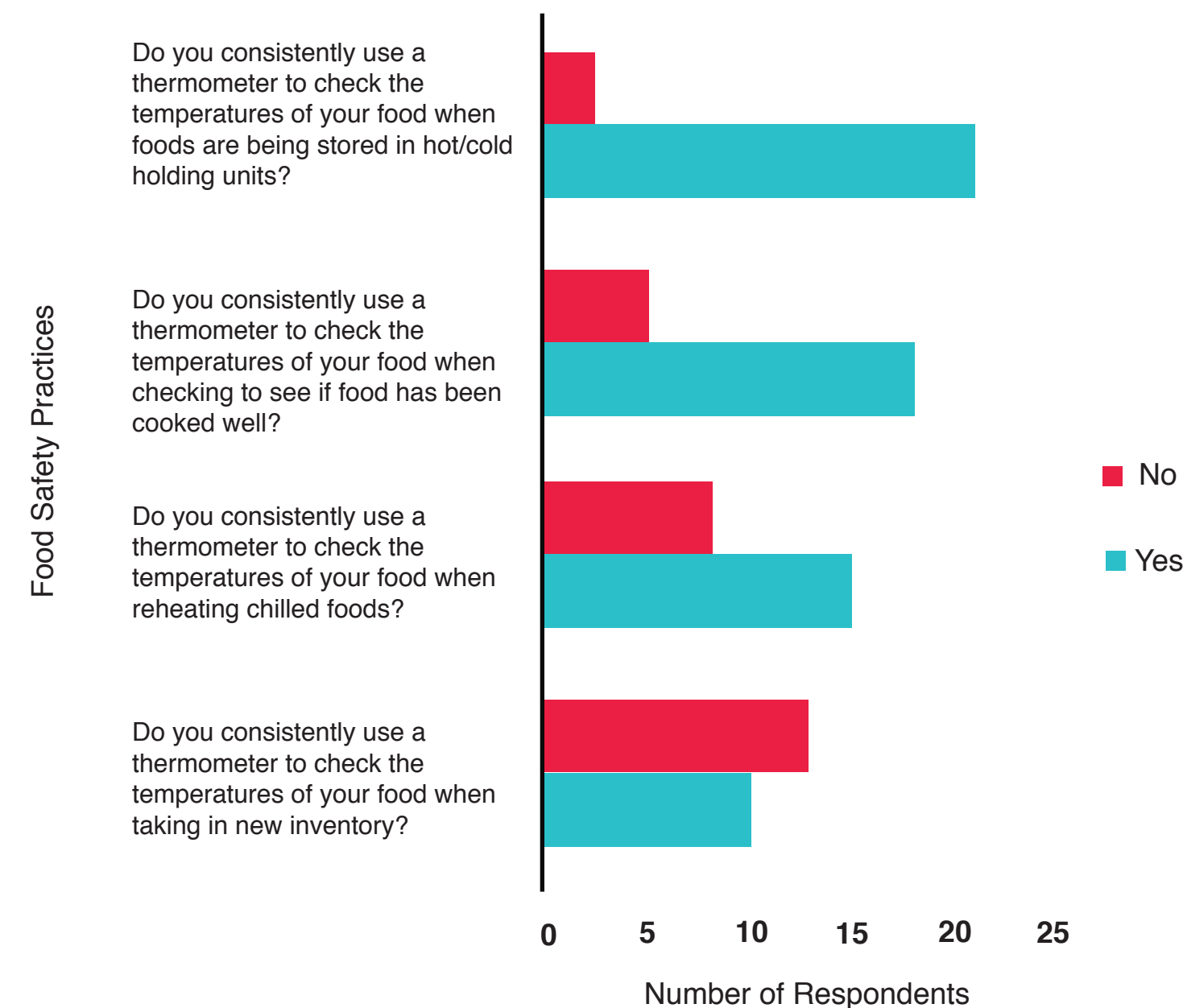


Figure 3. Answers to Food Safety Questions that Pertain to Temperature Monitoring. n=23. Temperature checks of hot/cold holding units had the highest reported adherence rate and temperature checks on incoming food had the lowest reported adherence rate.

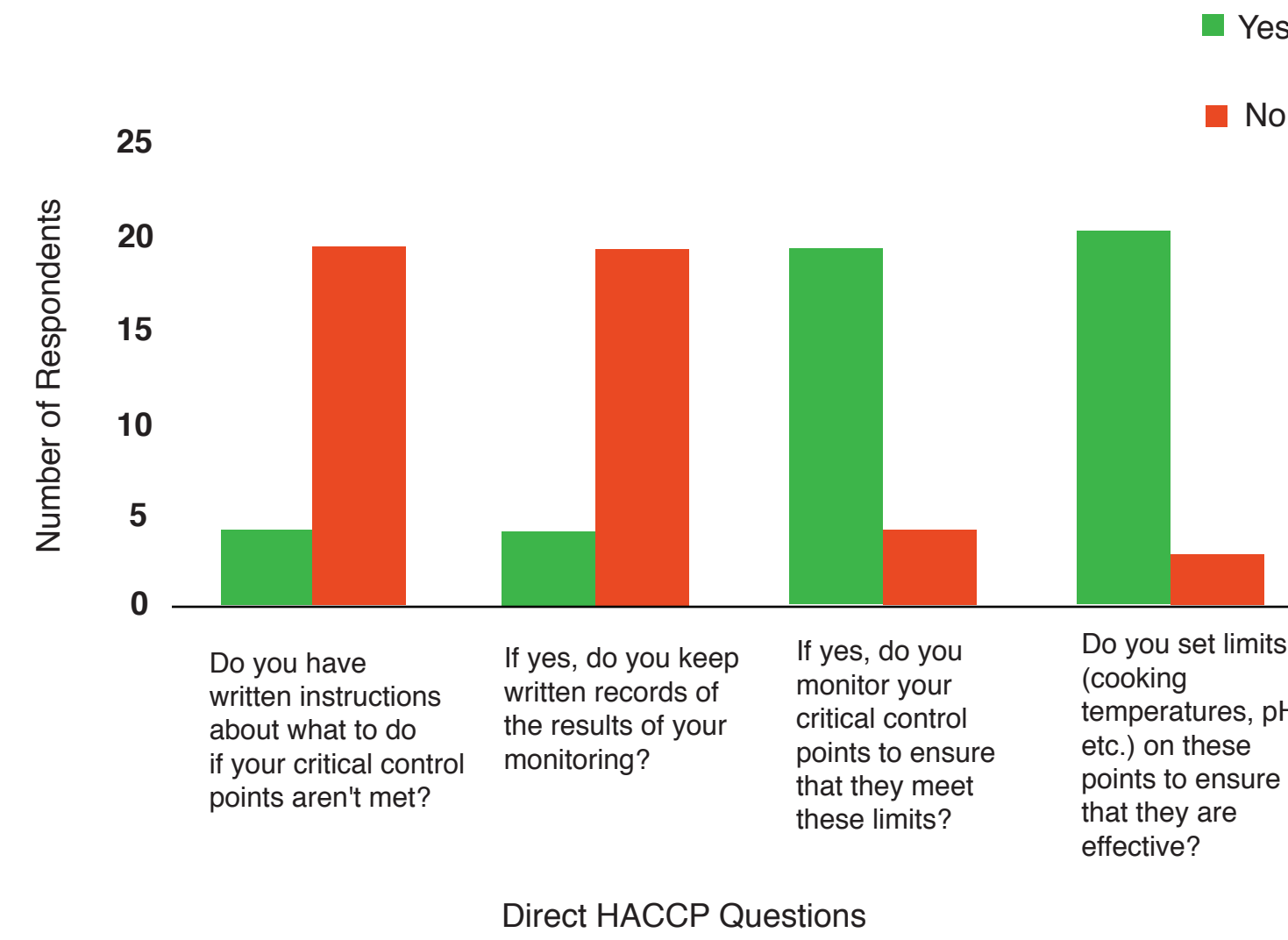


Figure 4. The responses (yes or no) to the four direct HACCP questions. n=23. The questions on Critical Control Point monitoring have largely positive adherence while the questions regarding documentation have low adherence rates.

## Discussion

Attitudes towards food safety were generally positive and no one appeared overwhelmed by the current food safety demands. Training was most often conducted on an as needed basis, which may not be inappropriate in a small business. Temperature monitoring was lowest in incoming material which disrupts the cold chain and could create hazards in the food. People who answered very positively on the attitude questions still frequently did not report temperature adherence. HACCP behaviours that did not require documentation were reported as being consistently adhered to in most places. When documentation was mentioned the answers became largely negative with most places not bothering. More than half of the respondents indicated that they had a safety plan in writing, this was the most frequent form of food safety documentation. All participants indicated that food safety was important for their business' success, and those who did not conduct temperature checks indicated that it was not necessary for their process.

## Conclusions

Formal training for new hires should be encouraged. Toronto Public Health training should focus on encouraging temperature monitoring, especially of incoming materials. This education should focus on the individual process to convince handlers that temperature monitoring is necessary to produce safe food. Focusing on incorporating key documentation of monitoring procedures and corrective actions would be beneficial.

## References

- Ko, W. (2013). The relationship among food safety knowledge, attitudes and self-reported HACCP practices in restaurant employees. Food control, 29(1), 192-197. DOI: 10.1016/j.foodcont.2012.05.076
- Domenech, E., Doménech, E., Escriche, I., & Martorell, S. (2008). Assessing the effectiveness of critical control points to guarantee food safety. Food control, 19(6), 557-565. DOI: 10.1016/j.foodcont.2007.06.015
- Ricci, A., Chemaly, M., Davies, R., Fernández Escámez, P. S., Girones, R., Herman, L., ... Bolton, D. (2017). Hazard analysis approaches for certain small retail establishments in view of the application of their food safety management systems. EFSA Journal, 15(3). DOI: 10.2903/j.efsa.2017.4697