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# BMJ Open

## Feasibility of working with a wholesale supplier to co-design and test acceptability of an intervention to promote smaller portions in British Fish & Chip Shops

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| Complete List of Authors:     | Goffe, Louis; Newcastle University, Institute of Health & Society; Newcastle University, Human Nutrition Research Centre<br>Hillier-Brown, Frances; Durham University, Faculty of Social Sciences and Health; Fuse – UKCRC Centre for Translational Research in Public Health<br>Hildred, Natalie; Fuse – UKCRC Centre for Translational Research in Public Health<br>Worsnop, Matthew; Henry Colbeck Limited<br>Adams, J; University of Cambridge, Centre for Diet & Activity Research<br>Araujo-Soares, Vera; Newcastle University, Institute of Health & Society; Fuse – UKCRC Centre for Translational Research in Public Health<br>Penn, Linda; Newcastle University, Institute of Health & Society; Fuse – UKCRC Centre for Translational Research in Public Health<br>Wrieden, Wendy; Newcastle University, Institute of Health & Society; Newcastle University, Human Nutrition Research Centre<br>Summerbell, Carolyn; Durham University, Faculty of Social Sciences and Health; Fuse – UKCRC Centre for Translational Research in Public Health<br>Lake, Amelia; Department of Science, School of Science, Engineering and Design, Teesside University; Fuse – UKCRC Centre for Translational Research in Public Health<br>White, Martin; University of Cambridge, Centre for Diet and Activity Research (CEDAR), MRC Epidemiology Unit; Newcastle University, Institute of Health & Society<br>Adamson, Ashley; Newcastle University, Institute of Health & Society; Fuse – UKCRC Centre for Translational Research in Public Health |
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|                               |   |

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Manuscripts

1 **Feasibility of working with a wholesale supplier to co-design and test**  
2 **acceptability of an intervention to promote smaller portions in British Fish**  
3 **& Chip Shops**

4 Louis Goffe (LG [louis.goffe@ncl.ac.uk](mailto:louis.goffe@ncl.ac.uk) M1.151 William Leech Building, Medical School, Newcastle  
5 University, Newcastle upon Tyne, NE2 4HH)<sup>1,2,3</sup>

6 Frances Hillier-Brown (FHB [frances.hillier-brown@durham.ac.uk](mailto:frances.hillier-brown@durham.ac.uk))<sup>4,3</sup>

7 Natalie Hildred (NH)<sup>3</sup>

8 Matthew Worsnop (MWO)<sup>5</sup>

9 Jean Adams (JA [jma79@medschl.cam.ac.uk](mailto:jma79@medschl.cam.ac.uk))<sup>6</sup>

10 Vera Araujo-Soares (VAS [vera.araujo-soares@ncl.ac.uk](mailto:vera.araujo-soares@ncl.ac.uk))<sup>1,3</sup>

11 Linda Penn (LP [linda.penn@ncl.ac.uk](mailto:linda.penn@ncl.ac.uk))<sup>1,3</sup>

12 Wendy Wrieden (WW [wendy.wrieden@newcastle.ac.uk](mailto:wendy.wrieden@newcastle.ac.uk))<sup>1,2,3</sup>

13 Carolyn D Summerbell (CDS [carolyn.summerbell@durham.ac.uk](mailto:carolyn.summerbell@durham.ac.uk))<sup>4,3</sup>

14 Amelia A Lake (AAL [Amelia.Lake@tees.ac.uk](mailto:Amelia.Lake@tees.ac.uk))<sup>7,3</sup>

15 Martin White (MWh [martin.white@mrc-epid.cam.ac.uk](mailto:martin.white@mrc-epid.cam.ac.uk))<sup>6,1</sup>

16 Ashley Adamson (AA [ashley.adamson@newcastle.ac.uk](mailto:ashley.adamson@newcastle.ac.uk))<sup>1,2,3</sup>

17 <sup>1</sup> Institute of Health & Society, Newcastle University, Newcastle upon Tyne, UK

18 <sup>2</sup> Human Nutrition Research Centre, Newcastle University, Newcastle upon Tyne, UK

1  
2  
3 19 <sup>3</sup> Fuse – UKCRC Centre for Translational Research in Public Health, Newcastle upon Tyne, UK  
4

5  
6 20 <sup>4</sup> Faculty of Social Sciences and Health, Durham University, UK  
7

8  
9 21 <sup>5</sup> Newcastle Business School, Northumbria University, Newcastle upon Tyne; and Henry Colbeck  
10  
11 22 Limited, Gateshead, UK  
12

13  
14 23 <sup>6</sup> Centre for Diet and Activity Research (CEDAR), MRC Epidemiology Unit, University of Cambridge, UK  
15

16  
17 24 <sup>7</sup> Department of Science, School of Science, Engineering and Design, Teesside University, UK  
18

19  
20 25 <sup>§</sup> Corresponding author  
21

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3 28 **ABSTRACT**

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5 29 **Objectives**

6  
7 30 To explore the feasibility of working with a wholesale supplier to co-design and deliver, and to assess  
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9 31 the acceptability of, an intervention to promote smaller portions in Fish & Chip Shops.

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15 33 **Design**

16  
17 34 Uncontrolled before-and-after study.

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23 36 **Setting**

24  
25 37 Fish & Chip Shops in northern England, 2016.

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28 38  
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30 39 **Participants**

31  
32 40 Owners (n=11), a manager, and customers (n=46) of Fish & Chip Shops; and intervention deliverers  
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34 41 (n=3)

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37 42  
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40 43 **Intervention**

41  
42 44 Supplier-led, three-hour engagement event with shop owners and managers, highlighting the  
43  
44 45 problem of excessive portion sizes and potential ways to reduce portion sizes; provision of box  
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46 46 packaging to serve smaller portions; promotional posters and business incentives.

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## 48 **Data collection**

49 In-store observations and sales data collected at baseline and post-intervention. Exit survey with  
50 customers. Semi-structured interviews with owners/managers and intervention deliverers post-  
51 intervention.

## 53 **Results**

54 Twelve Fish & Chip Shops were recruited. Observational data was collected from eight shops: at  
55 baseline, six shops did not promote the availability of smaller portion meals; at follow-up all eight did  
56 and five displayed the promotional poster. Seven out of 12 shops provided sales data and all  
57 reported increased sales of smaller portion meals post intervention. Of 46 customers surveyed: 28%  
58 were unaware of the availability of smaller portion meals; 20% had bought smaller portion meals;  
59 and 46% of those who had not bought these meals were interested to try them in the future.

60 Interviews revealed: owners/managers found the intervention acceptable but wanted a clearer  
61 definition of a smaller portion meal; the supplier valued the experience of intervention co-production  
62 and saw the intervention as being compatible with their responsibility to drive innovation.

## 64 **Conclusions**

65 The co-design of the intervention with a supplier was feasible. The partnership facilitated the  
66 delivery of an intervention that was acceptable to owners and customers. Sales of smaller meal  
67 packaging suggest that promotion of such meals is viable and may be sustainable.

## 69 **STRENGTHS AND LIMITATIONS OF THIS STUDY**

- 70 • This is the first study we are aware of to evaluate the feasibility of working with a wholesale  
71 supplier to co-design and deliver a public health intervention targeting hot food takeaways.

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3 72 • It is also the first study we are aware of to detail the potential role that wholesale suppliers can  
4  
5 73 play in improving the healthfulness of food offerings from hot food takeaways, exemplified by  
6  
7 74 Fish & Chip Shops.  
8  
9 75 • A mixed-method approach was employed, which successfully captured impacts of the  
10  
11 76 interventions on all stakeholders.  
12  
13 77 • Data available on customer behaviours were limited and did not include takeaway food  
14  
15 78 consumption.  
16  
17 79 • We had a small sample size, focused on one takeaway cuisine type and therefore the results may  
18  
19 80 not be generalisable beyond the setting of Fish & Chip Shops.  
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25 82 **KEYWORDS**

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28 83 Takeaways; Fish & Chips; food environments; public health; diet; obesity; intervention; behaviour  
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30 84 change  
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## 86 INTRODUCTION

87 Takeaway and fast food meals, particularly from independent businesses, have been found to deliver  
88 excessive portion sizes,[1] driving high energy consumption,[2] which is a major public health  
89 concern.[3] Our previous work found that adults and children who ate takeaway meals at least  
90 weekly consumed 63-87kcal and 55-168kcal per day, respectively, more than those who consumed  
91 such meals rarely.[4] High takeaway meal consumption has been linked to weight gain [5] and diet-  
92 related diseases.[6]

93

94 In the UK, 'Fish & Chips' are culturally embedded,[7] with an estimated 10,500 Shops across the  
95 UK.[8] Typical meals from Fish & Chip Shops consist of white fish in a batter of flour and water, and  
96 chipped potatoes, both deep fried in fat.[9] Portion size is a key driver of the high energy, fat and salt  
97 content of these meals. One survey found that the median energy content of 64 Fish & Chip meals  
98 was 1,658kcal,[1] representing 79% of a woman's and 64% of a man's estimated average energy  
99 requirement.[10] This underpins the need to reduce portion sizes as a means to promote population  
100 health.[11, 12]

101

102 Wholesale suppliers have an influence on what food is offered by independent hot food  
103 takeaways;[13] most outlets use a limited number of suppliers.[14] Wholesale suppliers have a clear  
104 interest in the financial viability of the sector. Professionals with experience of delivering  
105 interventions in this setting have expressed a need for greater involvement of wholesale suppliers in  
106 intervention delivery.[15] To date, limited research has involved suppliers.[13]

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3 108 The aim of this study was to explore the feasibility of working with a wholesale supplier to co-design  
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5 109 and deliver an intervention to promote smaller portion meals in Fish & Chip Shops; and the  
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7 110 acceptability of this intervention to shop owners/managers and their customers.  
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## 11 112 **METHODS**

### 12 113 **Intervention co-design**

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15 114 We approached Henry Colbeck Limited (HC), an independent specialist wholesaler for Fish & Chip  
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17 115 Shops, supplying over 2,500 shops across northern England and Scotland,[16] within a partnership of  
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19 116 three independent suppliers that supplies over 6,000 shops across the UK.[8] We asked HC if they  
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21 117 would work with us to co-design and lead on the delivery of an intervention to encourage Fish & Chip  
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23 118 Shops to improve portion control of all meals and actively promote smaller portion meals. Members  
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25 119 of the research team and HC staff set out their respective positions and terms of partnership that  
26  
27 120 included: for HC – responsibility for intervention development and intervention delivery (including  
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29 121 costs), as well as data sharing; for the research team – responsibility for study design and co-  
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31 122 ordination of data collection, independence of analysis and right to publish findings.  
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40 124 We discussed findings of our previous studies on independent takeaways [4, 17-21] with HC, and in  
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42 125 turn they shared their knowledge, detailing meal packaging options currently used: boxes, trays, and  
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44 126 paper wrapping. It was established that large portion size meals existed across the sector, driven  
45  
46 127 primarily by high competition and a desire to offer customers 'value-for-money'. We agreed the  
47  
48 128 dual-focus of an intervention to facilitate and promote: better portion control through use of box  
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50 129 packaging that restricts portion size (in particular in comparison with paper wrapping); and active  
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52 130 promotion of smaller portion meals to customers. We agreed that HC should promote the  
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54 131 intervention to Fish & Chip Shop owners/managers primarily on the potential financial benefits for  
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3 132 businesses of portion control and smaller portion sizes. The intervention was theorised in detail by  
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5 133 the research team at the outset (Supplementary File A).  
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10 135 **Intervention description**

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12 136 The research team supported HC to develop a three hour engagement event held in April 2016 at a  
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14 137 hotel in Gateshead, North-East England. Fish & Chip Shop owners, managers, and their staff were  
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16 138 invited to attend by HC. The programme included sessions delivered by HC and two Fish & Chip Shop  
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18 139 owners, and a question and discussion session involving all attendees.  
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24 141 Owners/managers were encouraged to place a greater emphasis on portion control of all meals  
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26 142 served through box packaging, and to actively promote smaller portion meals. The potential financial  
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28 143 benefits of these strategies were stressed throughout. Participants were presented with a range (by  
29  
30 144 size and material) of boxes available to support serving of smaller portion meals, but the choice of  
31  
32 145 packaging product was left to the discretion of the owner/manager. An enhanced action-planning  
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34 146 activity developed by the research team included a goal-setting form (Supplementary File B).[22] This  
35  
36 147 included a 'public pledge', where Fish & Chip Shop owners/managers detailed what changes they  
37  
38 148 would make, how and when these would be delivered, and how confident they were to deliver them.  
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40 149 Owners/managers were encouraged to keep these written pledges. We completed a template for  
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42 150 intervention description and replication (TIDieR) checklist [23] to fully describe the intervention  
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44 151 (Supplementary File C).  
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51 153 Following the engagement event, owners/managers were offered two copies of one of two different  
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53 154 A0 size posters promoting smaller portion meals to display in their shop (Figure 1). These were  
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55 155 delivered to shops within 16 days of the event. HC suggested that one poster could be displayed in  
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3 156 the shop, and the other made visible to potential customers passing the shop. Additional incentives  
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5 157 offered by HC were a free case (containing 100 units) of box packaging (for either regular or small  
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7 158 portion meals - chosen by the owner/manager) and HC customer loyalty scheme points.  
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12 160 [INSERT FIGURE 1]  
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15 161 **Figure 1. Promotional A0 size poster options**  
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20 163 Additional intervention delivery was undertaken by HC sales staff who visited shops where the  
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22 164 owner/manager had expressed an interest in attending the engagement event but had been unable  
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24 165 to attend. In these meetings HC provided an overview of the information presented at the event,  
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26 166 including details of changes suggested. They asked the owner/manager to complete the goal-setting  
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28 167 form, offered the incentives and posters, and explained the recording of the requested sales data  
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30 168 (see further details below).  
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36 170 **Recruitment to the intervention**  
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39 171 HC purposively selected shops in northern England to be invited to the engagement event with the  
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41 172 aim of recruiting shops: located in a range of socio-economic settings; both within and outside major  
42  
43 173 conurbations; and either known to be likely to engage or whose likelihood to engage was unknown.  
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45 174 HC sent a postal invitation one month prior to the engagement event. This included a tailored  
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47 175 message to the owner/manager with an invitation for them to attend along with a member of their  
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49 176 staff. Owners or managers who did not respond were contacted by phone by HC to confirm their  
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51 177 attendance.  
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3 179 **Study design**  
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5 180 We used an uncontrolled before-and-after study design to explore the feasibility of working with HC  
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7 181 to co-design and deliver the intervention and its acceptability to Fish & Chip Shop owners/managers  
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9 182 and their customers.  
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15 184 **Data collection**

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17 185 *Fish & Chip Shop owners/managers*  
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19 186 Data collected about owners and managers who attended the engagement event or took part in one-  
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21 187 to-one visits, which included: owner or manager status; number of Fish & Chip Shops owned (if  
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23 188 owner); and whether they attended the engagement event with a member of their staff. We  
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25 189 recorded details on each shop's: geographical location; local authority; location description (e.g. city  
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27 190 centre, village high street); Indices of Multiple Deprivation (IMD) decile of the locale;[24] seating  
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29 191 provision; and Food Standards Agency food hygiene rating.[25]  
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35 193 *Goal-setting*  
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37 194 A digital image was taken of all goal-setting forms completed either at the engagement event or  
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39 195 during additional intervention delivery at the shop visits.  
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45 197 *Covert observations*  
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47 198 Covert data collection was completed in a subset of participating shops that were accessible to the  
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49 199 research team within available resources, at three time points (baseline, two and six weeks post-  
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51 200 intervention) by members of the research team posing as customers. Data collected included the  
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53 201 visibility (including the display of the promotional posters) and availability of smaller portion meals  
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55 202 for all customers. One regular size meal and one smaller portion meal (where available) was  
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3 203 purchased from each shop. The shop menu description of the smaller portion meal was recorded as  
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5 204 was the packaging used and meal cost. The components (battered fish, chips) of meals were later  
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7 205 weighed within two hours of purchasing.  
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12 207 *Sales of Fish & Chip meals*  
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14 208 Participating shops were provided with a booklet to record sales of regular and smaller portion meals  
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16 209 from at least five days before to at least five days after first receiving the posters.  
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22 211 *Customer survey*  
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24 212 Following the completion of the covert data collection (six weeks post-intervention), a customer  
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26 213 survey was conducted within participating shops. Interviews were conducted in-person after  
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28 214 customers had ordered their food and while they waited for their meals to be served. Questions  
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30 215 covered awareness of availability of smaller portion meals, views on meal portion size and  
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32 216 purchasing behaviour including: frequency of and reasons for purchasing; whether they had tried  
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34 217 smaller portion meal; and willingness to try smaller portion meals in the future. Data were also  
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36 218 collected on the gender and age-category of respondents.  
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42 220 *Semi-structured interviews*  
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44 221 All shop owners/managers who had engaged in the intervention were invited to participate in a  
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46 222 semi-structured interview, either in-person or by telephone, to explore their experience of the  
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48 223 intervention. Further interviews were conducted with those responsible for development and  
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50 224 delivery of the intervention at HC to explore their experiences of the intervention. Interviews with HC  
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52 225 were conducted by a researcher not involved in intervention development and delivery.  
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3 227 **Data analysis**

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5 228 Descriptive statistics were used to summarise quantitative data. Interviews were transcribed

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7 229 verbatim checked against the audio recordings for accuracy and then anonymised. Thematic

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9 230 framework analysis with constant comparison was used to identify themes.[26]

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15 232 **RESULTS**

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17 233 **Recruitment and retention**

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19 234 Thirty-one Fish & Chip Shop owners or managers were invited to attend the engagement event. Of

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21 235 these, 15 (48%) stated an intention to attend, nine (29%) attended and three did not attend but took

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23 236 part in one-to-one sessions with HC staff. Thus, 12 took part in the evaluation (39%) (Figure 2).

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29 238 [INSERT FIGURE 2]

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32 239 **Figure 2. Portion control intervention participation and data collection flowchart**

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37 241 **Shop setting**

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39 242 Shops were spread across nine local authorities in northern England. Six of the 12 shops provided a

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41 243 sit-in restaurant service. Shops were located in areas across all IMD 2015 deciles.[24] The FSA

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43 244 hygiene rating of the shops was high, with ten receiving a maximum rating of five (Table 1).

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49 246 **Goal-setting**

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51 247 Eleven owners/managers completed the goal-setting form. All considered that they were already

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53 248 providing all of their customers with opportunities to purchase smaller portion meals in some form.

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249 The principal change to usual business practices that could be inferred from the forms was a public  
250 pledge to promote smaller portion meals, primarily through displaying posters (in five cases; Table 1).  
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**Table 1. Summary of data collected**

| Shop  | Summary   | ID01          | ID02                          | ID03                     | ID04            | ID05          | ID06                           | ID07            | ID08                             | ID09                     | ID10           | ID11            | ID12  |
|---|---|---------------|-------------------------------|--------------------------|-----------------|---------------|--------------------------------|-----------------|----------------------------------|--------------------------|----------------|-----------------|---|
| <b>Participant position</b>                             | Owner = 11<br>Manager = 1                         | Manager       | Owner                         | Owner                    | Owner           | Owner         | Owner                          | Owner           | Owner                            | Owner                    | Owner          | Owner           | Owner   |
| <b>Number of total Fish &amp; Chip Shops owned</b>      | Own 1 = 10<br>Own > 1 = 2                         | 1             | 1                             | 7                        | 1               | 1             | 1                              | 1               | 1                                | 1                        | 2              | 1               | 1   |
| <b>Attended the engagement event (number attendees)</b> | Yes = 9<br>No = 3                                 | Yes (2)       | Yes (2)                       | Yes (1)                  | Yes (2)         | No            | Yes (1)                        | No              | Yes (1)                          | Yes (2)                  | No             | Yes (1)         | Yes (1)   |
| <b>Completed goal-setting form</b>                      | Yes = 11<br>No = 1                                | Yes           | Yes                           | Yes                      | Yes             | Yes           | Yes                            | Yes             | Yes                              | Yes                      | No             | Yes             | Yes   |
| <b>Public pledge</b>                                    |   | “Smaller box” | “Smaller box/ Display poster” | “Smaller portion”        | “Already doing” | “Advertising” | “Will promote smaller portion” | “Already using” | “Will display promotion posters” | “Bio box”*               | Not completed  | “Already doing” | “Display poster & use on social media to promote lite bite” |
| <b>Covert observations conducted</b>                    | Yes = 8<br>No = 4                                 | Yes           | No                            | No                       | Yes             | Yes           | Yes                            | Yes             | Yes                              | Yes                      | Yes            | No              | No  |
| <b>Semi-structured interview</b>                        | Yes = 9<br>No = 3                                 | Yes           | Yes                           | No                       | Yes             | Yes           | Yes                            | No              | No                               | Yes                      | Yes            | Yes             | Yes   |
| <b>Number of customers surveyed</b>                     | Shop n = 5<br>Customers n = 46                    | 7             | 0                             | 0                        | 4               | 0             | 13                             | 0               | 0                                | 10                       | 12             | 0               | 0   |
| <b>Semi-structured interview</b>                        | Yes = 9<br>No = 3                                 | Yes (person)  | Yes (telephone)               | No                       | Yes (person)    | Yes (person)  | Yes (person)                   | No              | No                               | Yes (telephone)          | Yes (person)   | Yes (telephone) | Yes (telephone)   |
| <b>Shop region</b>                                      | North-East = 8<br>Yorkshire = 3<br>North-West = 1 | North-East    | North-East                    | Yorkshire and The Humber | North-East      | North-East    | North-East                     | North-East      | North-East                       | Yorkshire and The Humber | North-East     | North-West      | Yorkshire and The Humber                                    |
| <b>Shop</b>   |   | Centre of a   | Residential                   | Residential              | Shopping        | Shopping      | High street in                 | High street in  | High street in                   | Centre of a              | High street in | City centre     | High street in  |



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| location description                               |  | rural village | area of a market town | area of a city | centre in a residential area of a metropolitan borough | centre in a residential area of a metropolitan borough | a seaside town in a metropolitan borough | a seaside village in a metropolitan borough | a seaside town in a metropolitan borough | rural village | a seaside town in a metropolitan borough | a residential area of a metropolitan borough |   |
|--|--|---------------|-----------------------|----------------|--|--|--|---|--|---------------|--|--|---|
| Sit-in restaurant                                  | Yes = 6<br>No = 6  | No            | No                    | Yes            | No   | No   | Yes                                      | No  | Yes                                      | Yes           | Yes                                      | No   |   |
| IMD decile (where 1 is most deprived 10% of LSOAs) |  | 9             | 4                     | 7              | 1  | 3  | 8  | 5   | 8  | 9             | 7  | 3  | 5 |
| Shop FSA hygiene rating                            | 0 (low) = 0<br>1 = 0<br>2 = 0<br>3 = 1<br>4 = 1<br>5 (high) = 10 | 5             | 5                     | 3              | 5  | 5  | 5  | 5   | 5  | 5             | 4  | 5  | 5 |

253 \* Bio boxes constructed from biodegradable material extracted from sugar cane.

254

For peer review only

1  
2  
3 255 **Covert observations**  
4

5 256 We collected observational data from eight shops (Table 2). At baseline, only two shops clearly  
6  
7 257 displayed availability of smaller portion meals. During at least one of the post-intervention visits  
8  
9 258 (two or six weeks), all eight shops displayed availability of smaller portion meals. At baseline, one  
10  
11 259 shop had smaller portion meals on their main menu, two provided smaller portion meals on their  
12  
13 260 lunchtime menu only, two on their children's menu only, and two had no smaller portion meals on  
14  
15 261 any menu. Post-intervention, five of the eight shops actively promoted smaller portion meals using a  
16  
17 262 poster facing inside the shop, and two also displayed a poster facing outside. Of the other three: one  
18  
19 263 had actively promoted their own branded smaller portion meals throughout the evaluation but not  
20  
21 264 displayed the poster provided by HC; another had introduced a smaller portion meal by the six-week  
22  
23 265 follow-up; and one only had a smaller portion on the children's menu. All but one shop used box  
24  
25 266 packaging at baseline and all shops served their meals in boxes at follow-up.  
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31 268 Between baseline and six-week follow-up, we observed a 24g increase in mean weight of battered  
32  
33 269 fish, a 61g decrease in mean weight of chips, and a 37g decrease in mean total meal weight of  
34  
35 270 regular meals. With regards to the smaller portion meals, we observed a 2g decrease in mean weight  
36  
37 271 of battered fish, a 26g decrease in mean weight of chips, and a 27g decrease in mean total meal  
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39 272 weight.  
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274 **Table 2. Summary of covert observation data collected from each shop**

|   | Baseline               | Post-intervention |                   |
|---|------------------------|-------------------|-------------------|
|   |                        | Two-weeks         | Six-weeks         |
| Clearly displaying smaller portion meals available to all customers | Yes = 2<br>No = 6      | Yes = 7<br>No = 1 | Yes = 6<br>No = 2 |
| Smaller portion meals available to buy                              | Yes = 6<br>No = 2      | Yes = 6<br>No = 2 | Yes = 8<br>No = 0 |
| Active promotion of smaller meals                                   | NA                     | Yes = 5<br>No = 3 | Yes = 4<br>No = 4 |
| Packaging used for regular meal                                     | Boxes = 7<br>Paper = 1 | Boxes = 8         | Boxes = 8         |
| Weight of regular meal (g): battered fish                           | Mean = 265.1           | Mean = 277.9      | Mean = 289.3      |
| Weight of regular meal (g): chips                                   | Mean = 399.9           | Mean = 384.9      | Mean = 339.1      |
| Weight of regular meal (g): total                                   | Mean = 665.0           | Mean = 662.8      | Mean = 628.4      |
| Packaging used for smaller meal                                     | Boxes = 6              | Boxes = 6         | Boxes = 8         |
| Weight of smaller meal (g): battered fish                           | Mean = 175.7           | Mean = 170.7      | Mean = 174.0      |
| Weight of smaller meal (g): chips                                   | Mean = 273.0           | Mean = 233.7      | Mean = 247.4      |
| Weight of smaller meal (g): total                                   | Mean = 448.7           | Mean = 404.3      | Mean = 421.4      |

275

276 **Sales of Fish & Chip meals**

277 Seven shops returned usable sales data covering a mean of seven days pre- and 32 days post-  
 278 delivery of the posters. Five used booklets provided by the study team and two used their own sheet  
 279 to record sales data; only three split sales between lunch and evening periods. The mean proportion  
 280 of all meals sold which were smaller portion was 14.2% pre-intervention and 21.2% post-  
 281 intervention. One shop did not return sales data due to illness, the remaining three did not provide a  
 282 reason.

283

284 **Customer survey**

285 Five owners/managers permitted customer surveys to be conducted in their shops (Table 1). A total  
 286 of 46 questionnaires were completed (Table 3). Most customers surveyed bought meals once a  
 287 month or more, choosing the shop for taste or convenience. Most were aware that smaller portion  
 288 meals were available (72%) though only 20% had purchased them. Of those who had not previously  
 289 tried smaller portion meals, 46% said they would be interested in trying them in the future.

290

291 **Table 3. Customer survey responses**

| Variable   | Level                    | n (%)   |
|--|--------------------------|---------|
| <b>Gender</b>  | Female                   | 21 (46) |
|  | Male                     | 25 (54) |
| <b>Age category</b>  | 18 – 30                  | 10 (22) |
|  | 31 – 40                  | 11 (24) |
|  | 41 – 50                  | 2 (4)   |
|  | 51 – 60                  | 8 (17)  |
|  | 61 – 70                  | 7 (15)  |
|  | > 70                     | 8 (17)  |
| <b>Regular customer</b>                                    | Yes                      | 35 (76) |
|  | No                       | 11 (24) |
| <b>How regular</b>   | More than once a week    | 2 (4)   |
|  | Once a week              | 10 (22) |
|  | Once every 2 weeks       | 4 (9)   |
|  | Once a month             | 10 (22) |
|  | Once every 3 months      | 6 (13)  |
|  | Once every 6 months      | 5 (11)  |
|  | Once a year              | 0 (0)   |
|  | First time               | 9 (20)  |
| <b>Reasons for buying (up to 2 choices)</b>                | Taste/Quality            | 29      |
|  | Convenience              | 32      |
|  | Price                    | 3       |
|  | Portion size             | 0       |
|  | Other                    | 1       |
| <b>Portion sizes</b>                                       | Too small                | 0 (0)   |
|  | Just right               | 36 (78) |
|  | Too big                  | 2 (4)   |
|  | NA (first time customer) | 8 (17)  |
| <b>Know about small portion</b>                            | Yes                      | 33 (72) |
|  | No                       | 13 (28) |
| <b>Notice posters (where known to have been displayed)</b> | Yes                      | 10 (37) |
|  | No                       | 17 (63) |
| <b>Tried the promoted smaller portion meals</b>            | Yes                      | 9 (20)  |
|  | No                       | 37 (80) |
| <b>Try in the future</b>                                   | Yes                      | 17 (37) |
|  | No                       | 20 (43) |
|  | NA (previously tried)    | 9 (20)  |

292

293 **Semi-structured interviews**294 *Interviews with owners/managers*

295 Interviews were conducted with eight owners and one manager, five in person and four by  
 296 telephone (Table 1). Thematic analysis identified six main themes.

297

298 *Relationship between owner/manager and Henry Colbeck Limited*

299 Those who had attended the engagement event were more enthusiastic about the process than  
300 those who received the intervention in a one-to-one session. They reported that the event provided  
301 a “*unique*” opportunity to speak about an industry matter with their peers. They were impressed  
302 with the speakers, but did not value the goal-setting form. Participants felt well-supported by HC  
303 throughout. While they appreciated the incentives offered by HC they did not feel these were  
304 necessary.

305

306 *Suggested changes and smaller portion meal definitions*

307 All respondents considered they were already providing smaller portion meals in some form at  
308 baseline. For most, therefore, it was the posters that constituted the intervention; whereas others  
309 reported developing a detailed strategy to promote smaller meal portions. One owner suggested  
310 industry-wide standards regarding portion sizes but acknowledged that “*universal adoption*” was  
311 unlikely.

312

313 *Posters and shop setting*

314 There was a mixed response to the posters. Some respondents felt they were ‘fit-for-purpose’,  
315 whereas others felt they did not fit with their shop’s ethos. The only manager who attended the  
316 engagement event, stated that the shop’s owner felt the poster design interfered with the shop’s  
317 branding and therefore did not display it. Another owner suggested a preference for alternative  
318 promotional material (e.g. leaflet), detailing the “*benefits of buying smaller*”.

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3 320 *Importance of quality customer service*  
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5 321 All respondents stressed the importance of high quality customer service to delivering smaller  
6  
7 322 portion meals. One owner who had been involved in the Fish & Chip industry “*Pretty much all my*  
8  
9 323 *life*”, had implemented numerous changes following the intervention with support from a shop  
10  
11 324 owner who spoke at the engagement event. One owner who had been unable to attend the event,  
12  
13 325 reported that they had not implemented smaller portion meals in the evening as they could not rely  
14  
15 326 on serving staff to deliver these consistently.  
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21 328 *Customer feedback*  
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23 329 Few respondents reported receiving feedback on smaller portion meals from customers. However,  
24  
25 330 one detailed the enthusiasm from a group of builders who had seen the posters and welcomed the  
26  
27 331 change.  
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33 333 *The ease of recording sales data*  
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35 334 Those who provided sales data, reported that this had been straight forward. However, till systems  
36  
37 335 used to monitor sales meant that, for most, it was not possible to distinguish between lunch and  
38  
39 336 evening sales.  
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45 338 *Interviews with those who developed and delivered the intervention*  
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47 339 Interviews were conducted with three people from HC involved in intervention development and  
48  
49 340 delivery. Thematic analysis identified five themes.  
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3 342 *Intervention deliverers' motivations regarding intervention delivery*

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5 343 HC representatives viewed individual shops as focused on daily sales meaning it was up to HC to take  
6  
7 344 *"strategic long-term views of the industry"*. Respondents wanted shops to succeed in an increasingly  
8  
9 345 competitive marketplace. They took responsibility for driving sector innovation and acknowledged  
10  
11 346 that *"I need Fish & Chip Shops to stay in business because they pay my wages"*.

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17 348 *Considerations in development of the intervention*

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19 349 HC representatives stated that effective engagement on smaller portion sizes with owners/managers  
20  
21 350 could only be achieved by highlighting the financial and customer service benefits. HC staff saw  
22  
23 351 themselves as providing information and choice to their customers, *"It is up to the customer*  
24  
25 352 *[business owner] to make that choice, we are not going to force them to do anything"*. They were  
26  
27 353 also happy to take the lead on intervention development and delivery and the cost to HC was  
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29 354 viewed as an *"investment"*.

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35 356 *Intervention deliverers' views on acceptability*

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37 357 Representatives of HC were disappointed with attendance at the engagement event (9 of 31) and  
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39 358 were frustrated that some shops *"didn't realise the potential"*. While many had not provided a  
40  
41 359 reason for non-attendance, some reportedly told HC that it was due to staffing issues. However, the  
42  
43 360 responses HC received from those who did attend was positive, *"I had quite a lot of people ring up*  
44  
45 361 *and thanking me for the event"*, and they had viewed it as a rare *"interactive"* event: *"Fish fryers in*  
46  
47 362 *the same room sharing ideas and you could see people writing down notes and bringing up their own*  
48  
49 363 *problems. Other people were listening, engaging and offering advice and help. That doesn't happen*  
50  
51 364 *often enough"*.

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3 366 HC staff were aware that not all businesses would display the posters, with some owners/managers  
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5 367 reporting that they were too big. However, they felt that it was important to provide the means to  
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7 368 clearly distinguish between regular and smaller portion meals.  
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11  
12 370 HC also viewed the incentive component of the intervention as an act of “goodwill” showing their  
13  
14 371 commitment to the intervention. They did not see incentives as imperative to owner/manager  
15  
16 372 involvement and, indeed, not all shops took advantage of them.  
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#### 20 21 22 374 *Future plans*

23  
24 375 As a direct result of this work, HC staff developed specific packaging for smaller portion meals and  
25  
26 376 associated promotional material. At the time of interviews they were also trying to source smaller  
27  
28 377 fish fillets for this new packaging.  
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34 379 While HC staff saw smaller portion packaging as a sustainable change, more sustainable methods of  
35  
36 380 delivering the portion control message were required. The engagement event and one-to-one visits  
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38 381 were not considered scalable or efficient, “*I can’t go around and visit thousands of Fish & Chip Shops*  
39  
40 382 *because I am only one person*”.

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#### 44 45 46 384 *Experience of working with the research team*

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48 385 HC staff found working with the research team a positive and “*enjoyable experience*”. It had “*re-*  
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50 386 *stimulated our [HC’s] efforts*” and was felt to be rewarding for both parties.  
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3 388 **DISCUSSION**

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5 389 **Statement of principal findings**

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7 390 We found it was feasible to co-design and deliver an intervention to promote smaller portions with a  
8  
9 391 commercial partner and the intervention was acceptable to both Fish & Chip Shops and their  
10  
11 392 customers. Attendees at the engagement event valued and enjoyed it. Shop owners/managers were  
12  
13 393 broadly willing to introduce and promote smaller portion meals although not all engaged with all  
14  
15 394 aspects of the intervention. We successfully measured portions sizes and collected sales figures. We  
16  
17 395 observed a reduction in both regular and smaller portion meals after the intervention and an  
18  
19 396 increase in the proportion of meals sold that were a smaller portion. It was interesting to note that  
20  
21 397 the reduction in portion size of regular meals was due to reduction in chips, that is, the least  
22  
23 398 nutrient-dense component of the meal. The evaluation was conducted independently, avoiding the  
24  
25 399 potential for competing interests of the commercial partners.  
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32 401 **Strengths and limitations of the study**

33  
34 402 To our knowledge, this is the first study to evaluate the feasibility of working with a wholesale  
35  
36 403 supplier to co-design and deliver a public health intervention, and also to demonstrate the potential  
37  
38 404 role of wholesale suppliers in improving the food offerings from hot food takeaways.  
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43  
44 406 Covert observations, while feasible here, would be resource intensive in a larger study. While  
45  
46 407 participating shops were of a high standard, as measured by FSA hygiene rating,[25] they covered a  
47  
48 408 wide range of IMD 2015 deciles,[24] which suggests that the intervention may be feasible across a  
49  
50 409 range of socio-economic areas. Acceptability to shops with lower hygiene ratings may be lower.

51  
52 410 Goal-setting through the 'public pledge' was not found to be useful. Greater clarity concerning what  
53  
54 411 was expected of shop owners/managers may have improved this. Some shops did not make use of  
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3 412 posters and other marketing materials may have engaged a wider range of shops. Some aspects of  
4  
5 413 the intervention were not felt to be sustainable by the commercial partner and further thought is  
6  
7 414 required to determine how any such intervention could be scaled-up. While we gained a good  
8  
9 415 understanding of implementation within shops and impacts on sales, we had no measures of impact  
10  
11 416 on customers' total diets or total population impact.

12  
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### 15 16 17 418 **Strengths and limitations in relation to other studies**

18  
19 419 There are a limited number of intervention studies targeting takeaways in England, and few have  
20  
21 420 been evaluated.[21] Most interventions to date have been delivered by local authorities, limiting  
22  
23 421 their geographical reach. Suppliers, such as HC, have a much greater geographical reach. While  
24  
25 422 mandatory approaches to portion control may be more effective than voluntary schemes,[27, 28]  
26  
27 423 these would be harder to implement.[29] Our intervention is a rare voluntary, industry-led approach  
28  
29 424 to portion control. Difficulties engaging independent takeaways in public health interventions have  
30  
31 425 been previously described.[15] The 29% recruitment rate we achieved compares favourably to other  
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33 426 interventions in the sector.[30]

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### 37 38 39 428 **Study implications**

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41 429 Our findings suggest that, within the takeaway sector, it is feasible to develop a supplier-led  
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43 430 intervention based on 'providing information' and 'enabling choice'[31] and that this is acceptable  
44  
45 431 across stakeholders. We highlight the importance of product specific packaging that constrains  
46  
47 432 portion size, which can, in part, offset variability in servers' ability to deliver consistent portions. HC's  
48  
49 433 resulting smaller portion box packaging was designed and branded to deliver a smaller sized 'Lite-  
50  
51 434 BITE<sup>®</sup>' meal.[32] Sales of these boxes provide evidence of longer-term viability; in 2017 HC sold  
52  
53 435 5,523 cases (each of 100 units) of the 'Lite-BITE<sup>®</sup>' boxes to 253 unique accounts (personal  
54  
55 436 communication). Takeaway owners/managers seem likely to be more receptive to messages about  
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3 437 portion control from peers than external organisations, framed primarily in the context of the  
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5 438 potential financial benefits. The individual responsible for implementing changes in a takeaway  
6  
7 439 (usually the owner or manager) may require clear and practical instructions on how to make  
8  
9 440 suggested changes. Ideally, interventions should seek to engage with takeaway owners, or those  
10  
11 441 responsible for branding, and this person should communicate changes to serving staff, within the  
12  
13 442 wider context of good 'customer service'.  
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15

16 443

#### 19 444 **Unanswered questions and future research**

21 445 Due to the costs, HC are not planning further engagement events as delivered in this intervention.

23 446 An alternative platform to deliver the information and guidance in a collective format may be

25 447 required to maximise the potential of smaller portion packaging (e.g. seminars at trade events).

27 448 Future research could explore the impact of smaller portion meals in Fish & Chip Shops on

29 449 customers' diet and the wider public health implications, as well as the potential to promote smaller

31 450 meal portions through trade organisations and their events. While this intervention was feasible in a

33 451 sample of Fish & Chip Shops, further work should seek to identify other sectors of the takeaway and

35 452 wider catering industry where such an approach could be applied.  
36  
37  
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#### 41 454 **ETHICS**

43 455 The study received ethical approval by the Newcastle University Research Ethics Committee. All Fish

45 456 & Chip Shop owners/managers and those from HC who delivered the intervention provided written

47 457 informed consent prior to participation. All customers who participated in the customer survey were

49 458 provided with study information and provided oral consent prior to participation. Owners/managers

51 459 were not required to give specific consent for the covert observation component of the data

53 460 collection.  
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9  
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15  
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17  
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21  
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31  
32 474 manuscript.  
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39  
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16  
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#### 23 494 **COMPETING INTERESTS**

24  
25 495 The research funding contributed to the cost of design and production of some of the intervention  
26  
27 496 materials. HC also contributed to the costs of intervention development and funded delivery. HC  
28  
29 497 developed and sell the 'Lite-BITE®' Fish & Chip meal boxes detailed in the study. Neither the project,  
30  
31 498 nor individual researchers, received financial contributions from HC for this study or any other work.  
32  
33

34 499  
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36

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38  
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40  
41 502 investigators in the NIHR SPHR. MWh led and delivered the intervention and provided the packaging  
42  
43 503 materials; at the time of the research he was an undergraduate student at Newcastle Business  
44  
45 504 School, Northumbria University on secondment to HC. After completion of the study (and his degree  
46  
47 505 programme at Northumbria University), he became an employee of HC.  
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3 507 **Henry Colbeck Limited**

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5 508 HC an independent supplier to over 2,500 Fish & Chip Shops in the North-East of England, Yorkshire,  
6  
7 509 Cumbria and Scotland. HC is a private limited company founded in 1893 and based in Gateshead,  
8  
9 510 North-East England. Company number 00822749 ([www.colbeck.co.uk](http://www.colbeck.co.uk)).  
10

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15 512 **DATA SHARING STATEMENT**

16  
17 513 Anonymised data relating to the covert observations, sales of Fish & Chip meals, customer survey  
18  
19 514 and semi-structured interviews are available on reasonable request from the corresponding author  
20  
21 515 (LG).  
22

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26  
27 517 **AUTHOR CONTRIBUTIONS**

28  
29 518 JA, VAS, CDS, AAL, MWh & AA devised the concept for the Foodscape project. MWo developed the  
30  
31 519 intervention with support from LG, FHB, VAS and AA. The evaluation study and associated methods  
32  
33 520 were designed by LG, FHB, JA, VAS, LP, WW, CDS, MWh and AA. Data collection was overseen by LG  
34  
35 521 and completed by LG, MWo, FHB, NH and AA. LG led on data analysis and drafting the manuscript,  
36  
37 522 supported by MWh and AA. All authors provided critical comments on drafts of the manuscript, and  
38  
39 523 read and approved the final version.  
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46 525 **PATIENT INVOLVEMENT**

47  
48 526 No patients were involved in the study.  
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Figure 1. Promotional A0 size poster options

275x190mm (300 x 300 DPI)

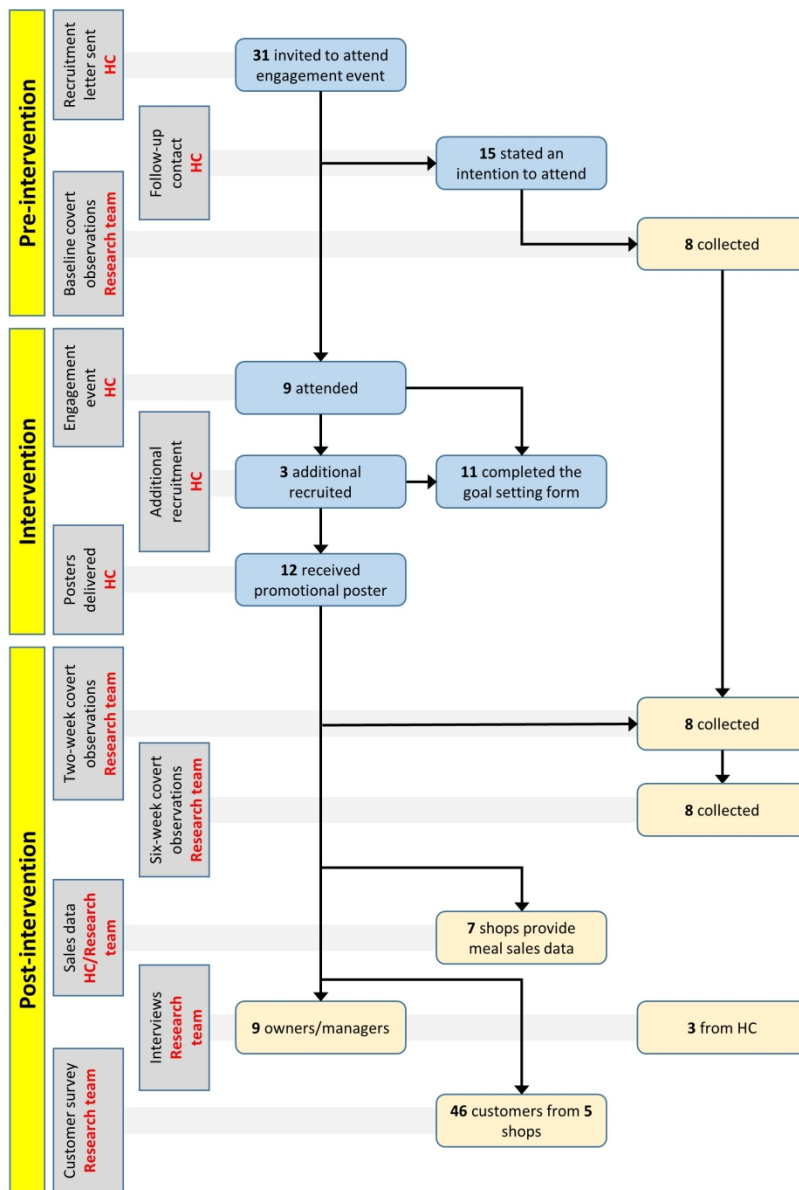
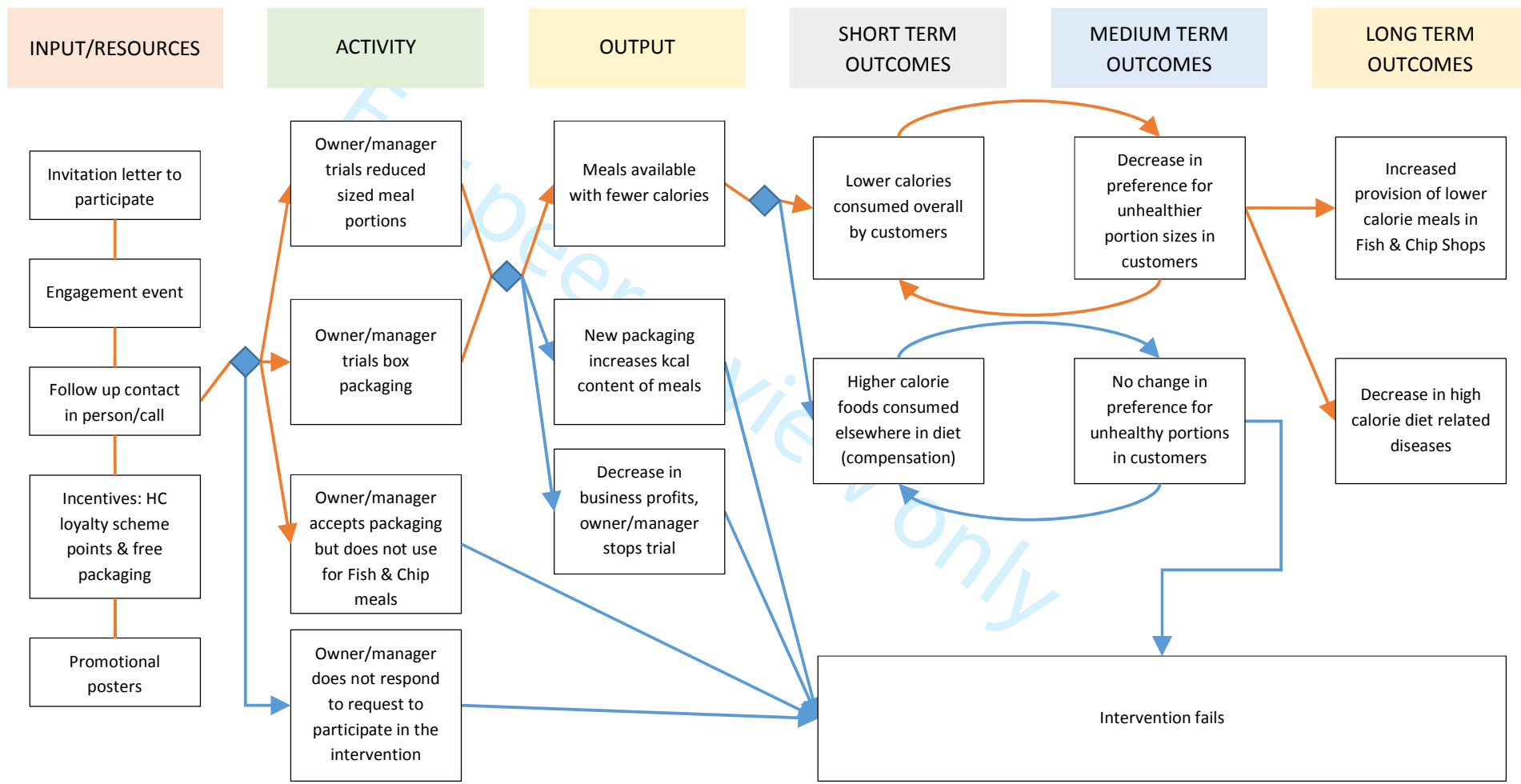


Figure 2. Portion control intervention participation and data collection flowchart

190x275mm (300 x 300 DPI)

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**Supplementary File A: Logic model**



**Supplementary File B: Goal-setting form**

**Team Spirit Event, Henry Colbeck Limited,**

**Wednesday 6th April 2016**

**Business name:** \_\_\_\_\_

**Business representatives:**

Name: \_\_\_\_\_ Role: owner/ manager/ staff (circle answer)

Name: \_\_\_\_\_ Role: owner/ manager/ staff (circle answer)

**From the topics covered at this Team Spirit event; what are the things you could change in your business?**

|   | 1. Could your business make this change? (Y/N) | 2. Are you willing to try this change? (Y/N) |
|---|--|--|
| <b>Change to structured packaging:</b><br><i>e.g. introduce bio boxes</i> |  |  |
| <b>Make smaller portions available to your customers at all times</b>     |  |  |

| <b>What to change?</b><br><i>Structured packaging<br/>/Smaller portions</i> | <b>Which packaging will you use for which change?</b><br><i>Single compartment corrugated cardboard box/Double compartment corrugated cardboard box/Bio box/MK</i> | <b>When will you do it?</b><br><i>Date</i> | <b>How sure (confident) are you that your business can achieve this?</b><br><i>From 1-5 (1=not at all sure; 5= very sure)*</i> |
|---|--|--|--|
| 1.  |  |  |  |
| 2.  |  |  |  |

**Public Pledge:** *Detail what, which and when you will change*

\*1= not at all sure; 2= not very sure; 3= neither; 4= somewhat sure; 5= very sure

I give consent to be contacted both, by phone, or in person by Newcastle University to provide them with details of the:

- Packaging changes I have made (if any)
- The number of Fish & Chips portions (all sizes) sold before and after the project
- My comments and opinions of the Team Spirit event
- My comment and opinions of any changes I have made following the event

Additionally, I will allow Newcastle University to speak with a few of my customers to hear their thoughts.

Signed \_\_\_\_\_ Print Name \_\_\_\_\_

Phone Number (and best time to call) \_\_\_\_\_

# BMJ Open

## Feasibility of working with a wholesale supplier to co-design and test acceptability of an intervention to promote smaller portions: an uncontrolled before-and-after study in British Fish & Chip Shops

|                                 |   |
|---------------------------------|---|
| Journal:                        | <i>BMJ Open</i>   |
| Manuscript ID                   | bmjopen-2018-023441.R1  |
| Article Type:                   | Research  |
| Date Submitted by the Author:   | 26-Nov-2018   |
| Complete List of Authors:       | Goffe, Louis; Newcastle University, Institute of Health & Society; Newcastle University, Human Nutrition Research Centre<br>Hillier-Brown, Frances; Durham University, Department of Sport and Exercise Sciences; Fuse – UKCRC Centre for Translational Research in Public Health<br>Hildred, Natalie; Fuse – UKCRC Centre for Translational Research in Public Health<br>Worsnop, Matthew; Henry Colbeck Limited<br>Adams, J; University of Cambridge, Centre for Diet & Activity Research<br>Araujo-Soares, Vera; Newcastle University, Institute of Health & Society; Fuse – UKCRC Centre for Translational Research in Public Health<br>Penn, Linda; Newcastle University, Institute of Health & Society; Fuse – UKCRC Centre for Translational Research in Public Health<br>Wrieden, Wendy; Newcastle University, Institute of Health & Society; Newcastle University, Human Nutrition Research Centre<br>Summerbell, Carolyn; Durham University, Department of Sport and Exercise Sciences; Fuse – UKCRC Centre for Translational Research in Public Health<br>Lake, Amelia; Department of Science, School of Science, Engineering and Design, Teesside University; Fuse – UKCRC Centre for Translational Research in Public Health<br>White, Martin; University of Cambridge, Centre for Diet and Activity Research (CEDAR), MRC Epidemiology Unit; Newcastle University, Institute of Health & Society<br>Adamson, Ashley; Newcastle University, Institute of Health & Society; Fuse – UKCRC Centre for Translational Research in Public Health |
| <b>Primary Subject Heading</b>: | Public health   |
| Secondary Subject Heading:      | Nutrition and metabolism  |
| Keywords:                       | Takeaways, Fish & Chips, food environments, Public health < INFECTIOUS DISEASES, diet, obesity  |
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13 4 Louis Goffe (LG [louis.goffe@ncl.ac.uk](mailto:louis.goffe@ncl.ac.uk) M1.151 William Leech Building, Medical School, Newcastle  
14  
15 5 University, Newcastle upon Tyne, NE2 4HH)<sup>1,2,3</sup>

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18 6 Frances Hillier-Brown (FHB [frances.hillier-brown@durham.ac.uk](mailto:frances.hillier-brown@durham.ac.uk))<sup>4,3</sup>

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21 7 Natalie Hildred (NH)<sup>3</sup>

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24 8 Matthew Worsnop (MWo)<sup>5</sup>

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27 9 Jean Adams (JA [jma79@medschl.cam.ac.uk](mailto:jma79@medschl.cam.ac.uk))<sup>6</sup>

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30 10 Vera Araujo-Soares (VAS [vera.araujo-soares@ncl.ac.uk](mailto:vera.araujo-soares@ncl.ac.uk))<sup>1,3</sup>

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33 11 Linda Penn (LP [linda.penn@ncl.ac.uk](mailto:linda.penn@ncl.ac.uk))<sup>1,3</sup>

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36 12 Wendy Wrieden (WW [wendy.wrieden@newcastle.ac.uk](mailto:wendy.wrieden@newcastle.ac.uk))<sup>1,2,3</sup>

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39 13 Carolyn D Summerbell (CDS [carolyn.summerbell@durham.ac.uk](mailto:carolyn.summerbell@durham.ac.uk))<sup>4,3</sup>

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42 14 Amelia A Lake (AAL [Amelia.Lake@tees.ac.uk](mailto:Amelia.Lake@tees.ac.uk))<sup>7,3</sup>

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45 15 Martin White (MWh [martin.white@mrc-epid.cam.ac.uk](mailto:martin.white@mrc-epid.cam.ac.uk))<sup>6,1</sup>

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48 16 Ashley Adamson (AA [ashley.adamson@newcastle.ac.uk](mailto:ashley.adamson@newcastle.ac.uk))<sup>1,2,3</sup>

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51 17 <sup>1</sup> Institute of Health & Society, Newcastle University, Newcastle upon Tyne, UK

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54 18 <sup>2</sup> Human Nutrition Research Centre, Newcastle University, Newcastle upon Tyne, UK

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19 <sup>3</sup> Fuse – UKCRC Centre for Translational Research in Public Health, Newcastle upon Tyne, UK

20 <sup>4</sup> Department of Sport and Exercise Sciences, Durham University, Durham City, UK

21 <sup>5</sup> Newcastle Business School, Northumbria University, Newcastle upon Tyne; and Henry Colbeck  
22 Limited, Gateshead, UK

23 <sup>6</sup> Centre for Diet and Activity Research (CEDAR), MRC Epidemiology Unit, University of Cambridge, UK

24 <sup>7</sup> Department of Science, School of Science, Engineering and Design, Teesside University, UK

25 <sup>§</sup> Corresponding author

26 Word count: 4,013 (excluding tables)

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For peer review only

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3 28 **ABSTRACT**  
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5  
6 29 **Objectives**  
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8 30 To explore the feasibility of working with a wholesale supplier to co-design and deliver, and to assess  
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10 31 the acceptability of, an intervention to promote smaller portions in Fish & Chip Shops.  
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16 33 **Design**  
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18 34 Uncontrolled before-and-after study.  
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24 36 **Setting**  
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27 37 Fish & Chip Shops in northern England, 2016.  
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33 39 **Participants**  
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35 40 Owners (n=11), a manager, and customers (n=46) of Fish & Chip Shops; and intervention deliverers  
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37 41 (n=3)  
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43 43 **Intervention**  
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45 44 Supplier-led, three-hour engagement event with shop owners and managers, highlighting the  
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47 45 problem of excessive portion sizes and potential ways to reduce portion sizes; provision of box  
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49 46 packaging to serve smaller portions; promotional posters and business incentives.  
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## 48 **Data collection**

49 In-store observations and sales data collected at baseline and post-intervention. Exit survey with  
50 customers. Semi-structured interviews with owners/managers and intervention deliverers post-  
51 intervention.

## 53 **Results**

54 Twelve Fish & Chip Shops were recruited. Observational data were collected from eight shops: at  
55 baseline, six shops did not promote the availability of smaller portion meals; at follow-up all eight did  
56 and five displayed the promotional poster. Seven out of 12 shops provided sales data and all  
57 reported increased sales of smaller portion meals post intervention. Of 46 customers surveyed: 28%  
58 were unaware of the availability of smaller portion meals; 20% had bought smaller portion meals;  
59 and 46% of those who had not bought these meals were interested to try them in the future.  
60 Interviews revealed: owners/managers found the intervention acceptable but wanted a clearer  
61 definition of a smaller portion meal; the supplier valued the experience of intervention co-production  
62 and saw the intervention as being compatible with their responsibility to drive innovation.

## 64 **Conclusions**

65 The co-design of the intervention with a supplier was feasible. The partnership facilitated the  
66 delivery of an intervention that was acceptable to owners and customers. Sales of smaller meal  
67 packaging suggest that promotion of such meals is viable and may be sustainable.

## 69 **STRENGTHS AND LIMITATIONS OF THIS STUDY**

- 70 • This is the first study we are aware of to evaluate the feasibility of working with a wholesale  
71 supplier to co-design and deliver a public health intervention targeting hot food takeaways.

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3 72 • It is also the first study we are aware of to detail the potential role that wholesale suppliers can  
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5 73 play in improving the healthfulness of food offerings from hot food takeaways, exemplified by  
6  
7 74 Fish & Chip Shops.  
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9  
10 75 • A mixed-method approach was employed, which successfully captured impacts of the  
11  
12 76 interventions on all stakeholders.  
13  
14 77 • Data available on customer behaviours were limited and did not include takeaway food  
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16 78 consumption.  
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18 79 • We had a small sample size, focused on one takeaway cuisine type and therefore the results may  
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20 80 not be generalisable beyond the setting of Fish & Chip Shops.  
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24 81  
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28 82 **KEYWORDS**  
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30 83 Takeaways; Fish & Chips; food environments; public health; diet; obesity; intervention; behaviour  
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## 86 INTRODUCTION

87 Takeaway and fast food meals, particularly from independent businesses, have been found to deliver  
88 excessive energy by means of large portion sizes,[1] driving high energy consumption,[2] which is a  
89 major public health concern.[3] Our previous work found that adults and children who ate takeaway  
90 meals at least weekly consumed 63-87kcal and 55-168kcal per day, respectively, more than those  
91 who consumed such meals rarely.[4] High takeaway meal consumption has been linked to weight  
92 gain [5] and diet-related diseases.[6]

93  
94 In the UK, 'Fish & Chips' are culturally embedded,[7] with an estimated 10,500 shops nationally.[8]  
95 Typical Fish & Chip Shop meals consist of white fish in batter and chipped potatoes, both deep  
96 fried.[9] One survey found that the median energy content of 64 Fish & Chip meals was 1,658kcal,[1]  
97 representing 79% of a woman's and 64% of a man's estimated average daily energy requirement.[10]  
98 This suggests reducing portion sizes could be a means to promote population health.[11-14]

99  
100 As most outlets use a limited number of wholesale suppliers,[15] these have substantial influence on  
101 what food is offered by independent hot food takeaways.[16] Whilst working with suppliers provides  
102 an opportunity for intervention,[17] to date, limited research has done so.[16]

103  
104 The aim of this study was to explore the feasibility of working with a wholesale supplier to co-design  
105 and deliver an intervention to promote smaller portion meals in Fish & Chip Shops in northern  
106 England; and the acceptability of this intervention to shop owners/managers and their customers. It  
107 was not a process or outcome evaluation study.

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3 109 **METHODS**  
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6 110 **Intervention co-design**  
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8 111 We approached Henry Colbeck Limited (HC), an independent specialist Fish & Chip Shops wholesaler,  
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10 112 supplying over 2,500 shops across northern England and Scotland,[18] within a partnership supplying  
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12 113 over 6,000 shops across the UK.[8] We asked HC if they would work with us to co-design and lead  
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14 114 delivery of an intervention to encourage Fish & Chip Shops to improve portion control and promote  
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16 115 smaller portion meals. Members of the research team and HC staff set out their respective positions  
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18 116 and terms of partnership that included: for HC – responsibility for intervention development and  
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20 117 intervention delivery (including costs), as well as data sharing; for the research team – responsibility  
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22 118 for study design and co-ordination of data collection, independence of analysis and right to publish  
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24 119 findings.  
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32 121 We discussed findings of our previous studies on independent takeaways [4, 19-23] with HC, and in  
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34 122 turn they shared their knowledge, detailing meal packaging options currently used: boxes, trays, and  
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36 123 paper wrapping. It was established that large portion size meals existed across the sector, driven  
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38 124 primarily by high competition and a desire to offer customers ‘value-for-money’. We agreed the  
39  
40 125 dual-focus of an intervention to facilitate and promote: better portion control, supported through  
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42 126 use of box packaging that standardises portion size (in particular in comparison with paper  
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44 127 wrapping); and active promotion of smaller portion meals. We agreed that implementation of the  
45  
46 128 intervention should not incur direct costs to the participating Fish & Chip Shops and that HC should  
47  
48 129 promote to owners/managers primarily on the potential financial benefits of portion control and  
49  
50 130 smaller portion sizes. HC recruited two owners with established smaller portion meal promotion to  
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52 131 support intervention delivery to detail their practical experience and financial benefits. The  
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54 132 intervention was theorised in detail by the research team (Supplementary File A).  
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3 134 **Intervention description**  
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5 135 The research team supported HC to develop a three hour engagement event held in April 2016 at a  
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7 136 hotel in North-East England. Fish & Chip Shop owners, managers, and their staff were invited to  
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9 137 attend by HC. The programme included sessions delivered by HC and two Fish & Chip Shop owners,  
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12 138 followed by a question and discussion session.  
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17  
18 140 Owners/managers were encouraged to place a greater emphasis on portion control by using box  
19  
20 141 packaging, and to actively promote smaller portion meals. The potential financial benefits of  
21  
22 142 attracting a wider customer base and reducing portion sizes without pro-rata reductions in price  
23  
24 143 charged were stressed throughout, such as an increase in trade and higher meal profit margin.  
25  
26 144 Participants were presented with a range (by size and material) of smaller portion boxes, but the  
27  
28 145 choice of packaging selected was made by the owner/manager. An enhanced action-planning activity  
29  
30 146 developed by the research team included a goal-setting form (Supplementary File B).[24] This  
31  
32 147 included a 'public pledge', where Fish & Chip Shop owners/managers detailed what changes they  
33  
34 148 would make, how and when these would be delivered, and how confident they were to deliver them.  
35  
36 149 Owners/managers were encouraged to keep these pledges. We completed a template for  
37  
38 150 intervention description and replication (TIDieR) checklist [25] (Supplementary File C).  
39  
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45  
46 152 Following the engagement event, owners/managers were offered two copies of one of two different  
47  
48 153 A0 size posters promoting smaller portion meals for their shops (Figure 1). These were delivered to  
49  
50 154 shops within 16 days. HC suggested that one poster could be displayed in-store, and the other made  
51  
52 155 visible to passers-by. Additional incentives offered by HC were 100 units of the box packaging chosen  
53  
54 156 by the owner/manager and HC customer loyalty scheme points.  
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3 158 [INSERT FIGURE 1]  
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6 159 **Figure 1. Promotional A0 size poster options**  
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12 161 Additional intervention delivery was undertaken by HC sales staff who visited owners/managers who  
13  
14 162 had expressed an interest in the engagement event but had not attended. An overview of the  
15  
16 163 information presented at the event was provided to owners/managers and they were asked to  
17  
18 164 complete the goal-setting form, offered the incentives and posters, and the recording of sales data  
19  
20 165 was explained (see below).  
21  
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23 166  
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### 26 167 **Recruitment to the intervention** 27

28  
29 168 HC purposively selected shops in northern England to be invited to the engagement event with the  
30  
31 169 aim of recruiting shops: located in a range of socio-economic settings; both within and outside major  
32  
33 170 conurbations; and either known to be likely to engage or whose likelihood to engage was unknown.  
34  
35 171 HC sent a postal invitation one month prior to the engagement event. This included a tailored  
36  
37 172 message to the owner/manager with an invitation for them to attend along with a member of their  
38  
39 173 staff. Owners or managers who did not respond were contacted by phone by HC.  
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### 46 175 **Study design** 47

48 176 We used an uncontrolled before-and-after study design to explore the feasibility of working with HC  
49  
50 177 to co-design and deliver the intervention and its acceptability to Fish & Chip Shop owners/managers  
51  
52 178 and their customers.  
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3 180 **Data collection**  
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6 181 *Fish & Chip Shop owners/managers*  
7

8 182 Data collected about owners/managers who attended the engagement event or took part in one-to-  
9  
10 183 one visits included: owner or manager status; number of Fish & Chip Shops owned (if owner); and  
11  
12 184 whether they attended the engagement event with a member of their staff. We recorded details on  
13  
14 185 each shop's: geographical location; local authority; location description (e.g. city centre, village high  
15  
16 186 street); Indices of Multiple Deprivation (IMD) decile of location;[26] seating provision; and Food  
17  
18 187 Standards Agency food hygiene rating.[27]  
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25 189 *Goal-setting*  
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27 190 A digital image was taken of all completed goal-setting forms, to record pledged changes.  
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31 191  
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33 192 *Covert observations*  
34

35 193 To provide objective measures of change, covert data collection was completed in a subset of  
36  
37 194 participating shops that were accessible to the research team, at three time points (baseline, two  
38  
39 195 and six weeks post-intervention). Members of the research team posed as customers. Data collected  
40  
41 196 included the visibility (including the display of promotional posters) and availability of smaller portion  
42  
43 197 meals. One regular size meal and one smaller portion meal (where available) was purchased from  
44  
45 198 each shop. The shop menu description of the smaller portion meal was recorded as was the  
46  
47 199 packaging used and meal cost. The components (battered fish, chips) of meals were weighed within  
48  
49 200 two hours of purchasing.  
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3 202 *Sales of Fish & Chip meals*  
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5 203 Participating shops were provided with a booklet to record sales of regular and smaller portion meals  
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7 204 from at least five days before to at least five days after first receiving the posters.  
8  
9

10  
11 205

12  
13 206 *Customer survey*  
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15  
16 207 Following the completion of the six-week post-intervention covert data collection, a customer survey  
17  
18 208 was conducted in participating shops (Supplementary File D). Interviews were conducted in-person  
19  
20 209 after customers had ordered their food but before food had been served. Questions covered  
21  
22 210 customer gender, age-group, awareness of availability of smaller portion meals, views on meal  
23  
24 211 portion size and purchasing behaviour including: frequency of and reasons for purchasing; whether  
25  
26 212 they had tried smaller portion meal; and willingness to try smaller portion meals in the future.  
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33 214 *Semi-structured interviews*  
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35 215 All shop owners/managers who engaged in the intervention were invited to participate in a semi-  
36  
37 216 structured interview, either in-person or by telephone, to explore their experience of the  
38  
39 217 intervention (Supplementary File D), conducted by LG. Interviews were also conducted with those  
40  
41 218 responsible for development and delivery of the intervention at HC to explore their experiences of  
42  
43 219 the intervention (Supplementary File D). Interviews with HC were conducted by a researcher, FHB,  
44  
45 220 not involved in intervention development and delivery.  
46  
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52 222 **Data analysis**  
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55 223 Descriptive statistics (sample size, means, proportions), conducted in R (LG), were used to summarise  
56  
57 224 quantitative data but not for the purpose of statistical inference.[28] Interviews were transcribed  
58  
59 225 verbatim checked for accuracy and then anonymised. Thematic framework analysis with constant  
60

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3 226 comparison was used to identify themes related to feasibility and acceptability of the  
4  
5 227 intervention.[29] The coding framework for each set of interviews was based on a priori themes from  
6  
7 228 the interview topic guides and emergent themes from the data. The final coding framework was then  
8  
9 229 applied to all transcripts and the resulting themes were reviewed and agreed upon by team  
10  
11  
12 230 members involved in the analysis (LG, AA & MWh).  
13  
14  
15 231

## 18 232 **RESULTS**

### 21 233 **Recruitment and retention**

23 234 Thirty-one Fish & Chip Shop owners or managers were invited to attend the engagement event. Of  
24  
25 235 these, 15 (48%) stated an intention to attend, nine (29%) attended and three did not attend but took  
26  
27 236 part in one-to-one sessions with HC staff. Thus, 12 took part in the evaluation (39%) (Figure 2).  
28  
29  
30  
31 237

33 238 [INSERT FIGURE 2]

36 239 **Figure 2. Portion control intervention participation and data collection flowchart**

### 42 241 **Shop setting**

44 242 Shops were spread across nine local authorities. Six of the 12 shops provided seating. Shops were  
45  
46 243 located in areas across all IMD deciles.[26] The FSA hygiene rating of the shops was high, with ten  
47  
48 244 receiving a maximum rating of five (Table 1).  
49  
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### 55 246 **Goal-setting**

57 247 Eleven owners/managers completed the goal-setting form. All considered that they were already  
58  
59 248 providing all of their customers with opportunities to purchase smaller portion meals in some form.  
60

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3 249 The principal change to usual business practices that could be inferred from the forms was a public  
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5 250 pledge to promote smaller portion meals, primarily through displaying posters (n=5; Table 1).  
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For peer review only

252 Table 1. Summary of data collected

|  | Shop-level summary (count)      | Individual Fish & Chip Shop |                               |                          |                 |               |                                |                 |                                  |                          |               |                 |   |
|--|---------------------------------|-----------------------------|-------------------------------|--------------------------|-----------------|---------------|--------------------------------|-----------------|----------------------------------|--------------------------|---------------|-----------------|---|
|  |                                 | ID01                        | ID02                          | ID03                     | ID04            | ID05          | ID06                           | ID07            | ID08                             | ID09                     | ID10          | ID11            | ID12  |
| Participant position                             | Owner = 11<br>Manager = 1       | Manager                     | Owner                         | Owner                    | Owner           | Owner         | Owner                          | Owner           | Owner                            | Owner                    | Owner         | Owner           | Owner   |
| Number of total Fish & Chip Shops owned          | Own 1 = 10<br>Own > 1 = 2       | 1                           | 1                             | 7                        | 1               | 1             | 1                              | 1               | 1                                | 1                        | 2             | 1               | 1   |
| Attended the engagement event (number attendees) | Yes = 9<br>No = 3               | Yes (2)                     | Yes (2)                       | Yes (1)                  | Yes (2)         | No            | Yes (1)                        | No              | Yes (1)                          | Yes (2)                  | No            | Yes (1)         | Yes (1)   |
| Completed goal-setting form                      | Yes = 11<br>No = 1              | Yes                         | Yes                           | Yes                      | Yes             | Yes           | Yes                            | Yes             | Yes                              | Yes                      | No            | Yes             | Yes   |
| Public pledge                                    |                                 | “Smaller box”               | “Smaller box/ Display poster” | “Smaller portion”        | “Already doing” | “Advertising” | “Will promote smaller portion” | “Already using” | “Will display promotion posters” | “Bio box”*               | Not completed | “Already doing” | “Display poster & use on social media to promote lite bite” |
| Covert observations conducted                    | Yes = 8<br>No = 4               | Yes                         | No                            | No                       | Yes             | Yes           | Yes                            | Yes             | Yes                              | Yes                      | Yes           | No              | No  |
| Semi-structured interview                        | Yes = 9<br>No = 3               | Yes                         | Yes                           | No                       | Yes             | Yes           | Yes                            | No              | No                               | Yes                      | Yes           | Yes             | Yes   |
| Number of customers surveyed                     | Shop n = 5<br>Customers n = 46  | 7                           | 0                             | 0                        | 4               | 0             | 13                             | 0               | 0                                | 10                       | 12            | 0               | 0   |
| Semi-structured interview                        | Yes = 9<br>No = 3               | Yes (person)                | Yes (telephone)               | No                       | Yes (person)    | Yes (person)  | Yes (person)                   | No              | No                               | Yes (telephone)          | Yes (person)  | Yes (telephone) | Yes (telephone)   |
| Shop region                                      | North-East = 8<br>Yorkshire = 3 | North-East                  | North-East                    | Yorkshire and The Humber | North-East      | North-East    | North-East                     | North-East      | North-East                       | Yorkshire and The Humber | North-East    | North-West      | Yorkshire and The Humber                                    |

|  | North-West<br>= 1 |                           |                                   |                            |   |   |   |  |   |                           |   |             |   |
|--|-------------------|---------------------------|-----------------------------------|----------------------------|---|---|---|--|---|---------------------------|---|-------------|---|
| Shop location description                                      |                   | Centre of a rural village | Residential area of a market town | Residential area of a city | Shopping centre in a residential area of a metropolitan borough | Shopping centre in a residential area of a metropolitan borough | High street in a seaside town in a metropolitan borough | High street in a seaside village in a metropolitan borough | High street in a seaside town in a metropolitan borough | Centre of a rural village | High street in a seaside town in a metropolitan borough | City centre | High street in a residential area of a metropolitan borough |
| Sit-in restaurant  | Yes = 6<br>No = 6 | No                        | No                                | Yes                        | No  | No  | Yes   | No   | Yes   | Yes                       | Yes   | Yes         | No  |
| IMD decile (where 1 is most deprived 10% of LSOAs)             |                   | 9                         | 4                                 | 7                          | 1   | 3   | 8   | 5  | 8   | 9                         | 7   | 3           | 5   |
| Shop FSA hygiene rating (0 to 5, where 0 is low and 5 is high) |                   | 5                         | 5                                 | 3                          | 5   | 5   | 5   | 5  | 5   | 5                         | 4   | 5           | 5   |

\* Bio boxes constructed from biodegradable material extracted from sugar cane.

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3 **255 Covert observations**  
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5  
6 256 We collected observational data from eight shops (Table 2). At baseline, only two shops clearly  
7  
8 257 displayed availability of smaller portion meals. During at least one of the post-intervention visits  
9  
10 258 (two or six weeks), all eight shops displayed availability of smaller portion meals. At baseline, one  
11  
12 259 shop had smaller portion meals on their main menu, two provided smaller portion meals on their  
13  
14 260 lunchtime menu only, two on their children's menu only, and two had no smaller portion meals on  
15  
16 261 any menu. Post-intervention, five of the eight shops actively promoted smaller portion meals using  
17  
18 262 an in-store facing poster, and two also displayed a poster facing outside. Of the other three: one  
19  
20 263 actively promoted their own branded smaller portion meals throughout but did not displayed the HC  
21  
22 264 posters; another had introduced a smaller portion meal by the six-week follow-up; and one only had  
23  
24 265 a smaller portion on the children's menu. All but one shop used box packaging at baseline and all did  
25  
26 266 so at follow-up.  
27  
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34 268 Between baseline and six-week follow-up, we observed a 24g increase in mean weight of battered  
35  
36 269 fish, a 61g decrease in mean weight of chips, and a 37g decrease in mean total meal weight of  
37  
38 270 regular meals. With regards to the smaller portion meals, we observed a 2g decrease in mean weight  
39  
40 271 of battered fish, a 26g decrease in mean weight of chips, and a 27g decrease in mean total meal  
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42 272 weight.  
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274 **Table 2. Summary of covert observation data collected from each shop**

|  | Baseline               | Post-intervention |                   |
|--|------------------------|-------------------|-------------------|
|  |                        | Two-weeks         | Six-weeks         |
| <b>Clearly displaying smaller portion meals available to all customers</b> | Yes = 2<br>No = 6      | Yes = 7<br>No = 1 | Yes = 6<br>No = 2 |
| <b>Smaller portion meals available to buy</b>                              | Yes = 6<br>No = 2      | Yes = 6<br>No = 2 | Yes = 8<br>No = 0 |
| <b>Active promotion of smaller portion meals</b>                           | NA                     | Yes = 5<br>No = 3 | Yes = 4<br>No = 4 |
| <b>Packaging used for regular meal</b>                                     | Boxes = 7<br>Paper = 1 | Boxes = 8         | Boxes = 8         |
| <b>Weight of regular meal (g): battered fish</b>                           | Mean = 265.1           | Mean = 277.9      | Mean = 289.3      |
| <b>Weight of regular meal (g): chips</b>                                   | Mean = 399.9           | Mean = 384.9      | Mean = 339.1      |
| <b>Weight of regular meal (g): total</b>                                   | Mean = 665.0           | Mean = 662.8      | Mean = 628.4      |
| <b>Packaging used for smaller portion meal</b>                             | Boxes = 6              | Boxes = 6         | Boxes = 8         |
| <b>Weight of smaller portion meal (g): battered fish</b>                   | Mean = 175.7           | Mean = 170.7      | Mean = 174.0      |
| <b>Weight of smaller portion meal (g): chips</b>                           | Mean = 273.0           | Mean = 233.7      | Mean = 247.4      |
| <b>Weight of smaller portion meal (g): total</b>                           | Mean = 448.7           | Mean = 404.3      | Mean = 421.4      |
| <b>Cost of regular meal (£)</b>  | Mean = £5.80           | Mean = £5.79      | Mean = £5.79      |
| <b>Cost of smaller portion meal (£)</b>                                    | Mean = £4.22           | Mean = £4.07      | Mean = £4.00      |

275

276 **Sales of Fish & Chip meals**

277 Seven shops returned usable sales data covering a mean of seven days pre- and 32 days post-  
 278 delivery of the posters. However, this was inconsistent in format and detailed analyses were not  
 279 possible. The mean proportion of all meals sold which were smaller portion was 14.2% pre-  
 280 intervention and 21.2% post-intervention. One shop did not return sales data due to illness, the  
 281 remaining three did not provide a reason.

282

283 **Customer survey**

284 Five owners/managers permitted customer surveys to be conducted in their shops (Table 1). A total  
 285 of 46 questionnaires were completed (Table 3). Most customers surveyed bought meals once a  
 286 month or more, choosing the shop for taste or convenience. Most were aware that smaller portion  
 287 meals were available (72%) though only 20% had purchased them. Of those who had not previously  
 288 tried smaller portion meals, 46% said they would be interested in trying them in the future.

289

290

**Table 3. Customer survey responses**

| Variable   | Level                    | n (%)   |
|--|--------------------------|---------|
| <b>Gender</b>  | Female                   | 21 (46) |
|  | Male                     | 25 (54) |
| <b>Age category</b>  | 18 – 30                  | 10 (22) |
|  | 31 – 40                  | 11 (24) |
|  | 41 – 50                  | 2 (4)   |
|  | 51 – 60                  | 8 (17)  |
|  | 61 – 70                  | 7 (15)  |
|  | > 70                     | 8 (17)  |
| <b>Regular customer</b>                                    | Yes                      | 35 (76) |
|  | No                       | 11 (24) |
| <b>How regular</b>   | More than once a week    | 2 (4)   |
|  | Once a week              | 10 (22) |
|  | Once every 2 weeks       | 4 (9)   |
|  | Once a month             | 10 (22) |
|  | Once every 3 months      | 6 (13)  |
|  | Once every 6 months      | 5 (11)  |
|  | Once a year              | 0 (0)   |
|  | First time               | 9 (20)  |
| <b>Reasons for buying (up to 2 choices)</b>                | Taste/Quality            | 29      |
|  | Convenience              | 32      |
|  | Price                    | 3       |
|  | Portion size             | 0       |
|  | Other                    | 1       |
| <b>Portion sizes</b>                                       | Too small                | 0 (0)   |
|  | Just right               | 36 (78) |
|  | Too big                  | 2 (4)   |
|  | NA (first time customer) | 8 (17)  |
| <b>Know about small portion</b>                            | Yes                      | 33 (72) |
|  | No                       | 13 (28) |
| <b>Notice posters (where known to have been displayed)</b> | Yes                      | 10 (37) |
|  | No                       | 17 (63) |
| <b>Tried the promoted smaller portion meals</b>            | Yes                      | 9 (20)  |
|  | No                       | 37 (80) |
| <b>Try in the future</b>                                   | Yes                      | 17 (37) |
|  | No                       | 20 (43) |
|  | NA (previously tried)    | 9 (20)  |

291

292

**Semi-structured interviews**

293

*Interviews with owners/managers*

294

Interviews were conducted with eight owners and one manager, five in person and four by

295

telephone (Table 1). Thematic analysis identified six main themes.

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3 296  
4  
56 297 *Relationship between owner/manager and Henry Colbeck Limited*  
7

8 298 Those who had attended the engagement event were more enthusiastic about the process than  
9  
10 299 those who received the intervention in a one-to-one session. They reported that the event provided  
11  
12 300 a “unique” [ID06, ID04] opportunity to speak about an industry matter with their peers. They were  
13  
14 301 impressed with the speakers, but did not value the goal-setting form. Participants felt well-  
15  
16 302 supported by HC throughout. While they appreciated the incentives offered by HC they did not feel  
17  
18 303 these were necessary.  
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22 304  
23  
2425 305 *Suggested changes and smaller portion meal definitions*  
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27  
28 306 All respondents considered they were already providing smaller portion meals in some form at  
29  
30 307 baseline. For most, therefore, the intervention constituted the posters; whereas others reported  
31  
32 308 developing a detailed strategy to promote smaller meal portions. One owner suggested industry-  
33  
34 309 wide standards regarding portion sizes but acknowledged that “universal adoption” [ID12] was  
35  
36 310 unlikely.  
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40 311  
4142 312 *Posters and shop setting*  
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45 313 There was a mixed response to the posters. Some respondents felt they were “really good... it really  
46  
47 314 just says it all... it’s [poster] very relevant to our business” [ID05], whereas others felt they did not fit  
48  
49 315 with their shop’s ethos. The only manager who attended the engagement event, stated that the  
50  
51 316 shop’s owner felt the poster clashed with the shop’s branding and did not display it [ID01]. Another  
52  
53 317 owner was highly critical stating that “posters that big look stupid” and suggested a preference for  
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55 318 alternative promotional material (e.g. leaflet), detailing the “benefits of buying smaller” [ID06].  
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3 320 *Importance of quality customer service*  
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5 321 All respondents stressed the importance of high quality customer service to delivering smaller  
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7 322 portion meals. One owner who had been involved in the Fish & Chip industry “*Pretty much all my*  
8  
9 323 *life*” [ID09], had implemented numerous changes following the intervention with support from an  
10  
11 324 owner who spoke at the engagement event. One owner who had been unable to attend the event,  
12  
13 325 reported that they had not implemented smaller portion meals in the evening as they could not rely  
14  
15 326 on serving staff to deliver these consistently [ID05].  
16  
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22 327  
23 328 *Customer feedback*  
24

25 329 Few respondents reported receiving feedback on smaller portion meals from customers. However,  
26  
27 330 one detailed the enthusiasm from a group of builders who had seen the posters and welcomed the  
28  
29 331 change [ID09].  
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31  
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34

35 333 *The ease of recording sales data*  
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37 334 Those who provided sales data, reported that this had been straight forward. However, till systems  
38  
39 335 limited the value of these for analyses.  
40  
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45 336  
46 337 *Interviews with those who developed and delivered the intervention*  
47

48 338 Interviews were conducted with three people from HC. Thematic analysis identified five themes. In  
49  
50 339 order to retain anonymity, the quotes below are not specifically attributed to a given intervention  
51  
52 340 deliverer.  
53  
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3 342 *Intervention deliverers' motivations regarding intervention delivery*

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5 343 HC representatives viewed individual shops as focused on daily sales meaning it was up to HC to take  
6  
7 344 *"strategic long-term views of the industry"*. Respondents wanted shops to succeed in an increasingly  
8  
9 345 competitive marketplace. They took responsibility for driving sector innovation and acknowledged  
10  
11 346 that *"I need Fish & Chip Shops to stay in business because they pay my wages"*.  
12  
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18 348 *Considerations in development of the intervention*

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20 349 HC representatives stated that effective engagement on smaller portion sizes with owners/managers  
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22 350 could only be achieved by highlighting the financial and customer service benefits. HC staff saw  
23  
24 351 themselves as providing information and choice to their customers, *"It is up to the customer*  
25  
26 352 *[business owner] to make that choice, we are not going to force them to do anything"*. They were  
27  
28 353 also happy to take the lead on intervention development and delivery and the cost to HC was  
29  
30 354 viewed as an *"investment"*.  
31  
32  
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34 355

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36  
37 356 *Intervention deliverers' views on acceptability*

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39 357 Representatives of HC were disappointed with attendance at the engagement event (9 of 31) and  
40  
41 358 were frustrated that some shops *"didn't realise the potential"*. While many had not provided a  
42  
43 359 reason for non-attendance, some reportedly told HC that it was due to staffing issues. However, the  
44  
45 360 responses HC received from those who did attend were positive, *"I had quite a lot of people ring up*  
46  
47 361 *and thanking me for the event"*, and they had viewed it as a rare *"interactive"* event: *"Fish fryers in*  
48  
49 362 *the same room sharing ideas and you could see people writing down notes and bringing up their own*  
50  
51 363 *problems. Other people were listening, engaging and offering advice and help. That doesn't happen*  
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53 364 *often enough"*.  
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3 366 HC staff were aware that not all businesses would display the posters, with some owners/managers  
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5 367 reporting that they were too big. However, they felt that it was important to provide the means to  
6  
7 368 clearly distinguish between regular and smaller portion meals.  
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13 370 HC also viewed the incentive component of the intervention as an act of “goodwill” showing their  
14  
15 371 commitment to the intervention. They did not see incentives as imperative to owner/manager  
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17 372 involvement and, indeed, not all shops took advantage of them.  
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#### 23 374 *Future plans*

24  
25  
26 375 As a direct result of this work, HC staff developed specific packaging for smaller portion meals and  
27  
28 376 associated promotional material. At the time of interviews they were also trying to source smaller  
29  
30 377 fish fillets for this new packaging.  
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35  
36 379 While HC staff saw smaller portion packaging as a sustainable change, more sustainable methods of  
37  
38 380 delivering the portion control message were required. The engagement event and one-to-one visits  
39  
40 381 were not considered scalable or efficient, “*I can’t go around and visit thousands of Fish & Chip Shops*  
41  
42 382 *because I am only one person*”.

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#### 46 384 *Experience of working with the research team*

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49 385 HC staff found working with the research team a positive and “*enjoyable experience*”. It had “*re-*  
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51 386 *stimulated our [HC’s] efforts*” and was felt to be rewarding for both parties.  
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## 388 **DISCUSSION**

### 389 **Statement of principal findings**

390 We found it was feasible to co-design and deliver an intervention to promote smaller portions with a  
391 commercial partner and the intervention was acceptable to both Fish & Chip Shops and their  
392 customers. Attendees at the engagement event valued and enjoyed it. Shop owners/managers were  
393 broadly willing to introduce and promote smaller portion meals. We successfully measured portions  
394 sizes and collected some sales data. We observed a reduction in the size of both regular and smaller  
395 portion meals after the intervention and an increase in the proportion of meals sold that were a  
396 smaller portion. The reduction in portion size of regular meals was due to reduction in chips – the  
397 least nutrient-dense component of the meal. As all participating owners/managers considered that  
398 their businesses provided smaller portion meals in some form at baseline, the additional overt  
399 promotion was broadly acceptable. Most also used box packaging at baseline meaning introduction  
400 of this was unlikely to be a key component of the intervention. The evaluation was conducted  
401 independently, avoiding the potential for competing interests of the commercial partners.

402

### 403 **Strengths and limitations of the study**

404 To our knowledge, this is the first study to evaluate the feasibility of working with a wholesale  
405 supplier to co-design and deliver a public health intervention, and to demonstrate the potential role  
406 of wholesale suppliers in improving the food offerings from hot food takeaways.

407

408 Covert observations, while feasible, would be resource intensive in a larger study. While  
409 participating shops had high FSA hygiene ratings,[27] they covered a wide range of IMD deciles,[26]  
410 suggesting the intervention may be feasible across a range of socio-economic settings. Acceptability  
411 to shops with lower hygiene ratings is unknown. Participants did not feel goal-setting through the

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3 412 'public pledge' was useful. Greater clarity concerning what was expected of shop owners/managers  
4  
5 413 may have improved this. Some shops did not make use of posters and other marketing materials,  
6  
7 414 such as leaflets, may have engaged a wider range of shops. We did not conduct in-depth interviews  
8  
9 415 with customers and these would provide more insight into their choices and preferences. Some  
10  
11 416 aspects of the intervention were not felt to be sustainable by HC and further thought is required to  
12  
13 417 determine how any such intervention could be scaled-up. We collected no data on customers' total  
14  
15 418 diets or total population impact.  
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22 419  
23 420 Due to time and resource constraints our data is unlikely to be representative. Furthermore, we did  
24  
25 421 not reach data saturation in interviews, nor was our customer survey validated or piloted prior to  
26  
27 422 use. Our findings may not be generalisable beyond the UK.  
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### 33 424 **Strengths and limitations in relation to other studies**

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35 425 There are a limited number of intervention studies targeting takeaways in England, and few have  
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37 426 been evaluated.[23] Most interventions to date have been delivered by local authorities, limiting  
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39 427 their geographical reach. Suppliers, such as HC, have a much greater geographical reach. While  
40  
41 428 mandatory approaches to portion control may be more effective than voluntary schemes,[30, 31]  
42  
43 429 these may be harder to implement.[32, 33] Our intervention is a rare voluntary, industry-led  
44  
45 430 approach to portion control. Difficulties engaging independent takeaways in public health  
46  
47 431 interventions have been previously described, where simply identifying a given takeaway owner can  
48  
49 432 be challenging.[17] The 29% recruitment rate we achieved compares favourably to other  
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51 433 interventions in the sector; in another, unpublished, local authority-led study we achieved a 10%  
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53 434 recruitment rate.[34] We received limited feedback from those who did not attend the engagement  
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55 435 event, although lack of staff cover may be a problem.  
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56 437 **Study implications**  
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8 438 Our findings suggest that, within the takeaway sector, it is feasible to develop a supplier-led  
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10 439 intervention based on ‘providing information’ and ‘enabling choice’[35] and that this is acceptable  
11  
12 440 across stakeholders. We highlight the importance of product specific packaging that constrains  
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14 441 portion size, which can, in part, offset variability in servers’ ability to deliver consistent portions. HC’s  
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16 442 smaller portion box packaging was designed and branded to deliver a smaller sized ‘Lite-BITE®’  
17  
18 443 meal.[36] Sales of these boxes provide evidence of longer-term viability; in 2017 HC sold 552,300  
19  
20 444 units of the ‘Lite-BITE®’ boxes to 253 unique accounts [D. McLean, personal communication, 2018].  
21  
22 445 Takeaway owners/managers seem likely to be more receptive to messages about portion control  
23  
24 446 from peers than external organisations, framed primarily in the context of the potential financial  
25  
26 447 benefits. The individual responsible for implementing changes in a takeaway (usually the owner or  
27  
28 448 manager) may require clear and practical instructions on how to make changes. Ideally,  
29  
30 449 interventions should seek to engage with takeaway owners, or those responsible for branding, and  
31  
32 450 this person should communicate changes to serving staff, within the wider context of good  
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34 451 ‘customer service’.

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4243 453 **Unanswered questions and future research**  
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46 454 HC are not planning further engagement events. An alternative platform to deliver the information  
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48 455 and guidance in a collective format may be required to maximise the potential of smaller portion  
49  
50 456 packaging (e.g. seminars at trade events). While the promotion of smaller portion meals was broadly  
51  
52 457 acceptable, over half of the customers surveyed, that had not previously purchased the smaller  
53  
54 458 portion meals, were not interested in trying in the future. However, smaller portion meals were  
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56 459 clearly attractive to others. Further work is required to assess whether and how customer choices  
57  
58 460 can be further changed.[35] Qualitative interviews with customers could usefully inform this,  
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3 461 inclusive of their views with regards to meal value-for-money. Future research could explore the  
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5 462 impact of smaller portion meals in Fish & Chip Shops on customers' diet and the wider public health  
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7 463 implications, as well as the potential to promote smaller meal portions through trade organisations  
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9  
10 464 and their events. Owners and managers would additionally benefit from a clearer definition of what  
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12 465 constitutes a smaller portion meal from a practical perspective. Defining and developing guidelines  
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14 466 to support delivery would be of use.

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20 468 While this intervention was feasible in a sample of Fish & Chip Shops, further work should seek to  
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22 469 identify other sectors of the takeaway and wider catering industry where such an approach could be  
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24 470 applied.

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## 30 472 **ETHICS**

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33 473 The study received ethical approval by the Newcastle University Research Ethics Committee. All Fish  
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35 474 & Chip Shop owners/managers and those from HC who delivered the intervention provided written  
36  
37 475 informed consent prior to participation. All customers who participated in the customer survey were  
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39 476 provided with study information and provided oral consent prior to participation. Owners/managers  
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41 477 were not required to give specific consent for the covert observation component of the data  
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43 478 collection.

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22 492 manuscript.  
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## 10 11 512 **COMPETING INTERESTS**

12  
13  
14 513 The research funding contributed to the cost of design and production of some of the intervention  
15  
16 514 materials. HC also contributed to the costs of intervention development and funded delivery. HC  
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19  
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21  
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23  
24 517  
25

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29  
30 520 investigators in the NIHR SPHR. MWh led and delivered the intervention and provided the packaging  
31  
32 521 materials; at the time of the research he was an undergraduate student at Newcastle Business  
33  
34 522 School, Northumbria University on secondment to HC. After completion of the study (and his degree  
35  
36 523 programme at Northumbria University), he became an employee of HC.  
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## 43 525 **Henry Colbeck Limited**

44  
45  
46 526 HC an independent supplier to over 2,500 Fish & Chip Shops in the North-East of England, Yorkshire,  
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48 527 Cumbria and Scotland. HC is a private limited company founded in 1893 and based in Gateshead,  
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50 528 North-East England. Company number 00822749 ([www.colbeck.co.uk](http://www.colbeck.co.uk)).  
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3 **530 DATA SHARING STATEMENT**  
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5 531 Anonymised data relating to the covert observations, sales of Fish & Chip meals, customer survey  
6  
7 532 and semi-structured interviews are available on reasonable request from the corresponding author  
8  
9 533 (LG).  
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15

16 **535 AUTHOR CONTRIBUTIONS**  
17

18 536 JA, VAS, CDS, AAL, MWh & AA devised the concept for the Foodscape project. MWo developed the  
19  
20 537 intervention with support from LG, FHB, VAS and AA. The evaluation study and associated methods  
21  
22 538 were designed by LG, FHB, JA, VAS, LP, WW, CDS, MWh and AA. Data collection was overseen by LG  
23  
24 539 and completed by LG, MWo, FHB, NH and AA. LG led on data analysis and drafting the manuscript,  
25  
26 540 supported by MWh and AA. All authors provided critical comments on drafts of the manuscript, and  
27  
28 541 read and approved the final version.  
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36 **543 PATIENT INVOLVEMENT**  
37

38 544 No patients were involved in the study.  
39  
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45 **546 COPYRIGHT STATEMENT**  
46

47 547 The promotional posters are copyrighted to Henry Colbeck Limited and cannot be reproduced  
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49 548 without their expressed permission.  
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3 552 **LEGENDS:**  
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6 553 Table 1 - Summary of data collected  
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9 554 Table 2 - Summary of covert observation data collected from each shop  
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12 555 Table 3 - Customer survey responses  
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15 556 Figure 1 - Promotional A0 size poster options  
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18 557 Figure 2 - Portion control intervention participation and data collection flowchart  
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21 558 Supplementary File A - Logic model  
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24 559 Supplementary File B - Goal-setting form  
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27 560 Supplementary File C - TIDieR checklist  
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30 561 Supplementary File D - Customer survey  
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Figure 1. Promotional A0 size poster options

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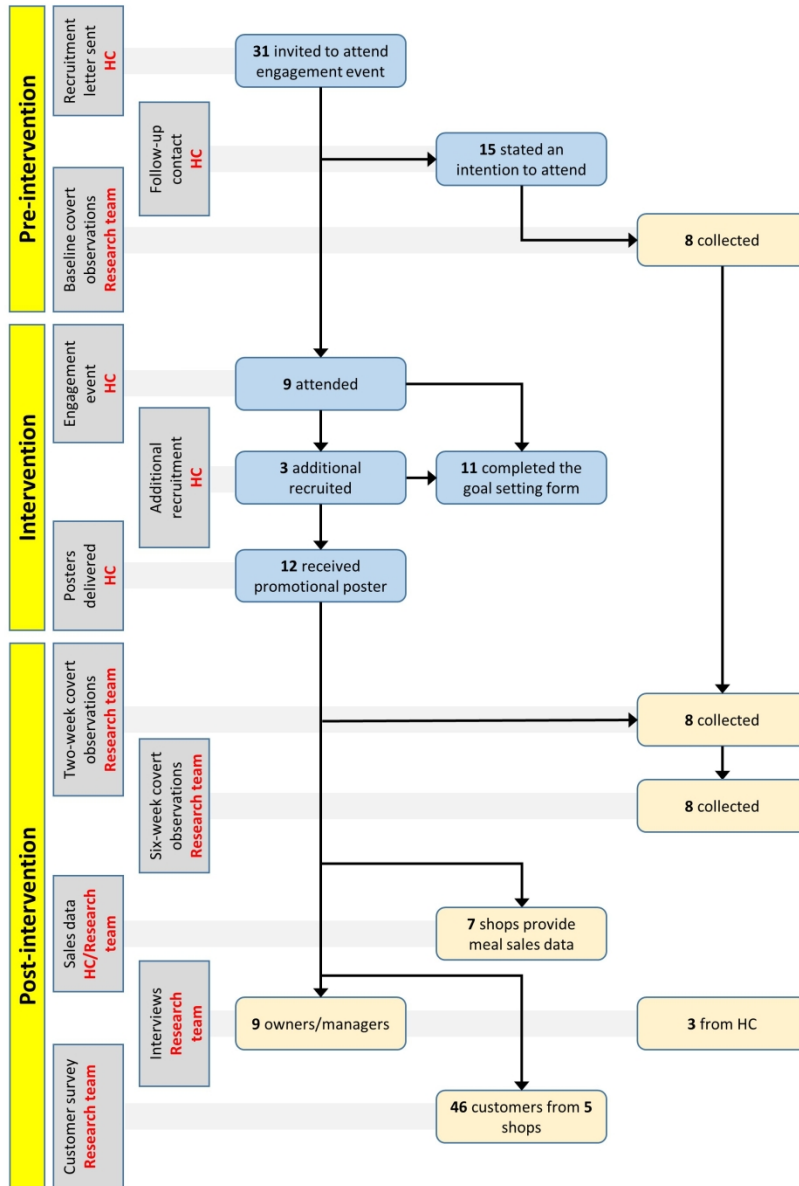
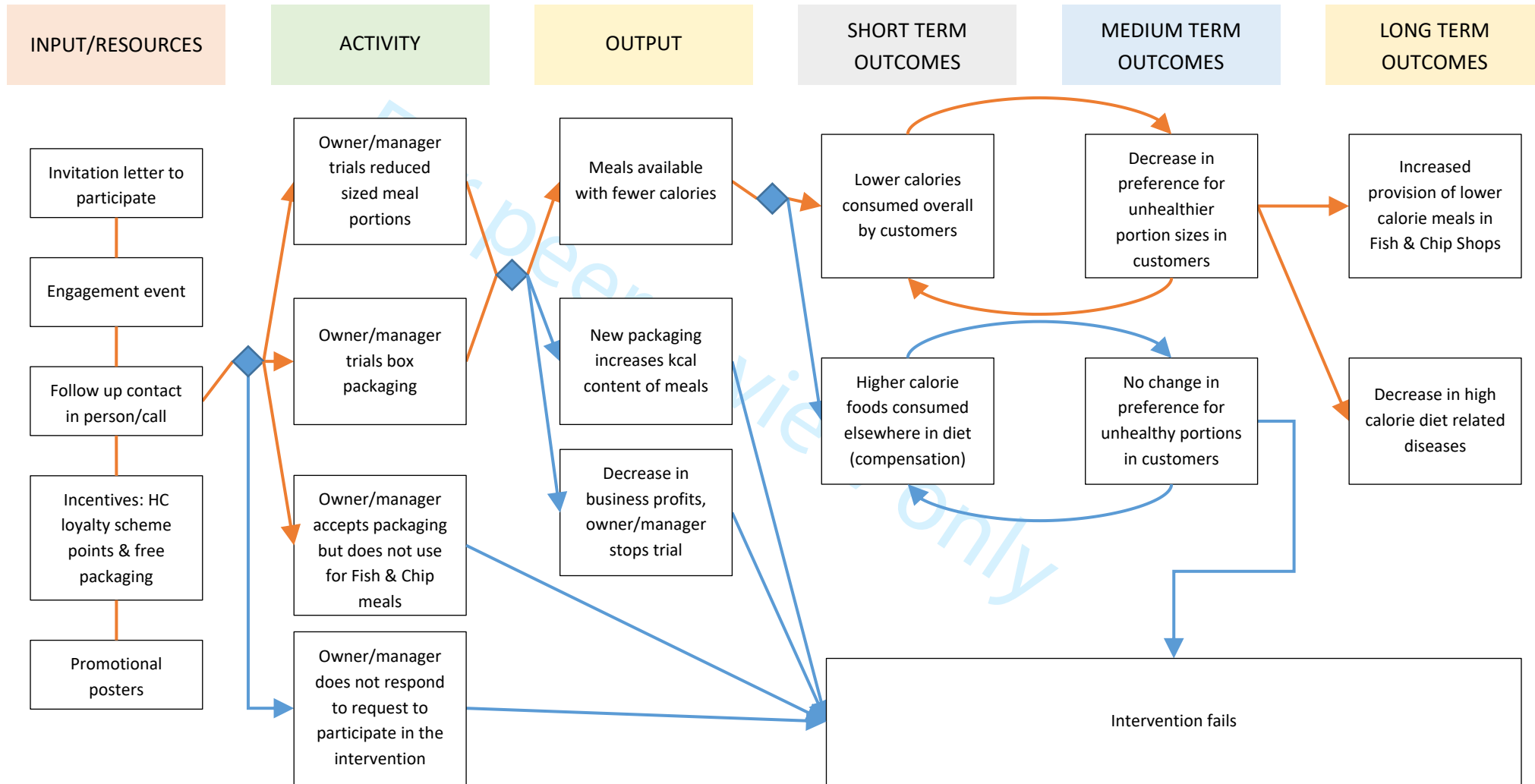


Figure 2. Portion control intervention participation and data collection flowchart

190x275mm (300 x 300 DPI)

Supplementary File A: Logic model



1 **Supplementary File B: Goal-setting form**

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4 **Team Spirit Event, Henry Colbeck Limited,**

5 **Wednesday 6th April 2016**

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10 **Business name:** \_\_\_\_\_

11 **Business representatives:**

12

13 Name: \_\_\_\_\_ Role: owner/ manager/ staff (circle answer)

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15 Name: \_\_\_\_\_ Role: owner/ manager/ staff (circle answer)

16 **From the topics covered at this Team Spirit event; what are the things you could change in your business?**

17

|   | 1. Could your business make this change? (Y/N) | 2. Are you willing to try this change? (Y/N) |
|---|--|--|
| <b>Change to structured packaging:</b><br><i>e.g. introduce bio boxes</i> |  |  |
| <b>Make smaller portions available to your customers at all times</b>     |  |  |

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29 **Public Pledge: Detail what, which and when you will change**

| What to change?<br><i>Structured packaging<br/>/Smaller portions</i> | Which packaging will you use for which change?<br><i>Single compartment corrugated cardboard box/Double compartment corrugated cardboard box/Bio box/MK</i> | When will you do it?<br><i>Date</i> | How sure (confident) are you that your business can achieve this?<br><i>From 1-5 (1=not at all sure; 5= very sure)*</i> |
|--|---|-------------------------------------|---|
| 1.   |   |                                     |   |
| 2.   |   |                                     |   |

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43 \*1= not at all sure; 2= not very sure; 3= neither; 4= somewhat sure; 5= very sure

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46 I give consent to be contacted both, by phone, or in person by Newcastle University to provide them with details of

47 the:

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- Packaging changes I have made (if any)
- The number of Fish & Chips portions (all sizes) sold before and after the project
- My comments and opinions of the Team Spirit event
- My comment and opinions of any changes I have made following the event

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55 Additionally, I will allow Newcastle University to speak with a few of my customers to hear their thoughts.

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59 Signed \_\_\_\_\_ Print Name \_\_\_\_\_

60 Phone Number (and best time to call) \_\_\_\_\_

**Packaging key:**

- Corrugated cardboard boxes are available in either single or double compartment versions. The double compartment boxes provides separate compartments for each of the Fish & Chip meal components.
- The Bio box packaging are a single compartment box constructed from biodegradable material extracted from sugar cane.
- MK packaging are a single compartment box constructed of non-corrugated food grade cardboard.

For peer review only

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4 **1 Supplementary File C: TIDieR checklist**  
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7 2 Description of the portion control engagement event using the template for intervention description  
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9 3 and replication (TIDieR) checklist.[1]  
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|--|-------------------------------------|---|
| 15<br>16<br>17<br>18<br>19<br>20<br>21<br>22<br>23<br>24<br>25<br>26<br>27<br>28<br>29<br>30<br>31<br>32<br>33<br>34<br>35<br>36<br>37<br>38<br>39<br>40<br>41<br>42<br>43<br>44<br>45 | 1. Name [page 8]                    | Engagement event – Henry Colbeck Ltd  |
| 46<br>47<br>48<br>49<br>50<br>51<br>52<br>53<br>54<br>55<br>56<br>57<br>58<br>59<br>60   | 2. Rationale, theory, goal [page 8] | <p>Fish &amp; Chip meals from takeaways are generally characterised by large portion sizes.[2] People who eat more meals away from home tend to eat more calories per day [3] and consumption of takeaway meals has been linked to weight gain [4] and diet-related diseases.[5] A systematic review revealed that a person consumes more when presented with a larger-sized portion.[6]</p> <p>The behaviour change techniques [7 8] used during the training were:</p> <ul style="list-style-type: none"> <li>• Providing information on behavioural outcomes</li> <li>• Instruction on how to perform the behaviour</li> <li>• Demonstration of behaviour/credible source/vicarious consequences</li> <li>• Information about others' approval</li> <li>• Pros and cons</li> <li>• Behavioural practice/rehearsal</li> <li>• SMART goal setting (behaviour) and action planning</li> <li>• Behavioural contract</li> <li>• Adding objects to the environment</li> <li>• Self-monitoring of behaviour (sales)</li> <li>• Monitoring of behaviour by others without feedback</li> <li>• Reward (outcome)/Material Incentive</li> <li>• Financial incentive/form for specific goods [8]</li> </ul> <p>Aim of the intervention: To increase the provision and promotion of smaller portion meals available to all customers throughout all opening hours and/or increased/renewed focus on portion control across all meals.</p> |
|  | 3. Materials [page 8]               | <p>Information provision on the consequences of behaviour and behaviour change opportunities, presented by owners of established Fish &amp; Chip Shops and the supplier.</p> <p>Owners, managers and their staff of Fish &amp; Chip Shops that attended were presented with details, primarily financial, of the benefits of effective portion control and the promotion and provision of smaller portion meals. These were predominantly in the form of PowerPoint presentations, but also included further visual aids such as the displaying of a locally purchased Fish &amp; Chips meal on an 11 inch plate to illustrate the volume of food delivered.</p>  |



|                                   |   |
|-----------------------------------|---|
|                                   | <p>Participants were asked to read and sign a 'public pledge' as part of the goal setting form that stipulated which proposed activities they could and would be willing to make in their business.</p> <p>Owners/managers were offered, by the supplier, two incentives to support fulfilment of the pledges. These were loyalty scheme points (financial) and a free case (100 units) of box packaging of their choosing (specific goods). Additionally, they were offered free posters to promote the availability of the smaller portion meals to the shop's customers.</p> <p>The research team also provide a booklet to record Fish &amp; Chip meal sales during the evaluation period to monitor sales behaviour.</p> <p>A free lunch was included as part of the engagement event for all those that attended.</p>   |
| <p>4. Procedures<br/>[page 8]</p> | <p>Fish &amp; Chip Shop owners/managers were invited via a postal communication from the supplier one month prior to the engagement event.</p> <p>On the day of the event, participants were invited to a hotel in close proximity (under 3km) to Henry Colbeck Ltd's office and warehouse facility.</p> <p>There was a range of presentations delivered from both the perspective of the supplier, Henry Colbeck Ltd and Fish &amp; Chip business owners, as well as study data collection requirements from the research team (LG).</p> <p>Henry Colbeck Ltd's presentations set out the reasons for initiating the event, and contextualised existing portion sizes in the Fish &amp; Chip industry in relation to both an adult's diet as well as other sectors of the fast-food industry. They detailed the packaging available to support improved portion control and smaller meal portion delivery. They also stated the items that they would provide to incentivise shop participation.</p> <p>One business owner (Owner A) detailed his experience of delivering highly regulated portion sizes, as well as the benefits to his business of providing a range of smaller portion meals. This included knowing one's target portion size, selecting the appropriate packaging, staff training, sales and profit margins of smaller meals. A second business owner (Owner B) detailed the experience of the implementation and financial success within his shop of smaller portion meals.</p> <p>LG detailed what data the research team intended to collect as part of the evaluation.</p> <p>Following the presentations, participants were provided with lunch and refreshments, followed by a question and answer session before the close.</p> |

|  |  |
|--|--|
|  | Promotional material was provided through the sales team at Henry Colbeck Ltd and owners/managers ordered the free case of packing using their usual method of ordering through Henry Colbeck Ltd.   |
| 5. Who provided [page 8]                                   | The educational material delivered by Henry Colbeck Ltd were developed by themselves in conversation with the research team. Additionally, Owner A, created his own presentation material and Owner B, presented without supporting material.<br><br>The goal setting, action planning and pledge form (behavioural contract) was developed by the research team, guided by VAS, health psychology expert. The research team provided all material to enable participants to record sales data in the required format. |
| 6. How [page 8]  | Training delivered in person in a group session.   |
| 7. Where [page 8]  | Hotel, in close proximity to Henry Colbeck Ltd's office and warehouse facility, Gateshead.   |
| 8. When and how much [page 8]                              | One session approximately three hours.   |
| 9. Tailoring [page 8]                                      | The material provided were tailored specifically to Fish & Chips Shops that offered a takeaway service.  |
| 10. Modifications [page 8]                                 | This was the first time the intervention had been delivered. However, previous material circulated by Henry Colbeck Ltd to its customers had been adapted and incorporated accordingly to the setting of delivering the information 'in-person'.   |
| 11. Planning/fidelity (ways to maintain fidelity) [page 8] | Members of the research team attended the engagement event to assess if it was delivered as intended. As the event was a one-off no strategies were implemented to maintain or improve fidelity.   |
| 12. Actual fidelity [page 8]                               | All presentations were delivered as intended. However, the goal setting activity was not. Participants had little time to complete the form and no support. During follow-up interviews many could not recall completing this or had not seen any value in the pledge.   |

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# Customer survey

|   |   |  |  |   |   |   |  |  |
|---|---|--|--|---|---|---|--|--|
| Interviewee ID  |   |  |  |   |   |   |  |  |
| Business name   |   |  |  |   |   |   |  |  |
| Date  |   |  |  |   |   |   |  |  |
| Fish and chip shop use  |   |  |  |   |   |   |  |  |
| <b>1. Do you use this fish and chip shop regularly?</b>                                 |   |  |  |   |   |   |  |  |
| Yes<br><input type="checkbox"/>   |   |  |  | No<br><input type="checkbox"/>                  |   |   |  |  |
| <b>2. What do you mean by regularly?</b>  |   |  |  |   |   |   |  |  |
| More than once a week<br><input type="checkbox"/>                                       | Once a week<br><input type="checkbox"/> | Once every 2 weeks<br><input type="checkbox"/> | Once a month<br><input type="checkbox"/> | Once every 3 months<br><input type="checkbox"/> | Once every 6 months<br><input type="checkbox"/> | Once a year<br><input type="checkbox"/> | First time<br><input type="checkbox"/> |  |
| <b>3. What are the main <b>two</b> reasons why you come to this fish and chip shop?</b> |   |  |  |   |   |   |  |  |
| Taste/Quality<br><input type="checkbox"/>   | Convenience<br><input type="checkbox"/> |  | Price<br><input type="checkbox"/>        |   | Portion size<br><input type="checkbox"/>        |   |  |  |
| Purchase behaviour  |   |  |  |   |   |   |  |  |
| <b>4. For how many people do you usually order for?</b>                                 |   |  |  |   |   |   |  |  |
| Write answer:   |   |  |  |   |   |   |  |  |
| <b>5. What do you normally order and what portion size? i.e. large/regular/smaller</b>  |   |  |  |   |   |   |  |  |
| Write answer:   |   |  |  |   |   |   |  |  |
| Portion size  |   |  |  |   |   |   |  |  |
| <b>6. What do you think of the portion sizes here?</b>                                  |   |  |  |   |   |   |  |  |
| Too small<br><input type="checkbox"/>   |   | Just right<br><input type="checkbox"/>         |  |   | Too big<br><input type="checkbox"/>             |   |  |  |
| Smaller portions  |   |  |  |   |   |   |  |  |
| <b>7. Are you aware of the smaller portions offered?</b>                                |   |  |  |   |   |   |  |  |
| Yes<br><input type="checkbox"/>   |   |  |  | No<br><input type="checkbox"/>                  |   |   |  |  |

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|   |                                     |                                     |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| <b>8. Have you noticed the new posters or other forms of promotion in the shop?</b>                           |                                     |                                     |                                     |                                     |                                     |
| Yes<br><input type="checkbox"/>   |                                     | No<br><input type="checkbox"/>      |                                     |                                     |                                     |
| <b>9. Have you tried the smaller portions?</b>  |                                     |                                     |                                     |                                     |                                     |
| Yes<br><input type="checkbox"/>   |                                     | No<br><input type="checkbox"/>      |                                     |                                     |                                     |
| <b>10. If not, would you buy it in future?</b>  |                                     |                                     |                                     |                                     |                                     |
| NA<br><input type="checkbox"/>  | Yes<br><input type="checkbox"/>     |                                     | No<br><input type="checkbox"/>      |                                     |                                     |
| <b>11. If yes, who for?</b>   |                                     |                                     |                                     |                                     |                                     |
| Write answer:   |                                     |                                     |                                     |                                     |                                     |
| Other options   |                                     |                                     |                                     |                                     |                                     |
| <b>12. Are there any meals/dishes/portion sizes you would like to see offered at this fish and chip shop?</b> |                                     |                                     |                                     |                                     |                                     |
| Write answer:   |                                     |                                     |                                     |                                     |                                     |
| Gender  |                                     |                                     |                                     |                                     |                                     |
| Female<br><input type="checkbox"/>  |                                     | Male<br><input type="checkbox"/>    |                                     |                                     |                                     |
| Age category  |                                     |                                     |                                     |                                     |                                     |
| 18 – 30<br><input type="checkbox"/>   | 31 - 40<br><input type="checkbox"/> | 41 - 50<br><input type="checkbox"/> | 51 - 60<br><input type="checkbox"/> | 61 - 70<br><input type="checkbox"/> | Over 70<br><input type="checkbox"/> |

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# Owner/manager interview topic guide

## Interviewee background

- Please could you introduce yourself and state your role in the business
- Do you have any other premises?
- How long have you been working in fish and chips?
- How did you get into fish and chips?
- What is special or unique about your business?

## Engagement with the project

- Did you attend the engagement event?
  - Why did you decide to attend the event?
  - What did you think about the event?
    - Prompts:
      - Speakers
      - Material
      - Location, i.e. convenience
      - Venue & refreshments
      - Henry Colbeck and their staff
      - Information delivered
  - What did you like?
  - Did you learn anything new?
  - Did you speak with other owners?
  - Any missing stakeholders?
  - Was there any part of the event you thought was missing, disliked or would change?
  - Was it worthwhile attending?
- If you didn't attend, did you speak with Henry Colbeck about portion control?
  - What did they tell you about portion control?
  - Was any of the information new?
  - What changes did they ask you to make?
  - What made you choose to give the posters/smaller portions a go?
  - Anything further at the time of the visit that could have been offered or suggested to support you to make changes?
- Did you complete a pledge sheet/Do you remember the pledge sheet?

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## Changes

- What changes have you made since attending the event?
  - Prompts
    - Increased awareness/regulation of portion control in your staff
    - Reduced portion sizes
    - Changed packaging
    - Introduced smaller portions
    - Put up poster(s)
- What's the role/importance of customer service?
- What response from customers?
  - Prompts
    - Changes in sales increase/decrease
    - Comments/Conversations
- Have you gained new customers?

## Posters

- Where you offered both poster designs?
- Did you display them? And where? (possibly answered from previous questions)
  - If not, why not
  - If only inside/outside why?
- What did you think about the posters?
  - Prompts
    - Design
    - Wording
    - Appropriateness for your shop
- Any comments from customers? (possibly answered from previous questions)
- Could you suggest any changes?
- Will you keep the posters up?
- Did you do any further promotion?
  - Prompts
    - Staff led
    - Social media

## Incentives

- What did you think of the incentives provided by Henry Colbeck?
  - Prompts
    - Loyalty scheme points
    - Free packaging
- Anything further you feel that they could have offered to support you in offering smaller portions/regulating portion size?

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## Sales data

- Did you record sales data?
- Was it easy to keep track of sales data?
  - Prompts
    - Lunchtime/Evening service
- Were the sales booklets that we provided of use?
- Have any of the changes you've made been financially beneficial?

## Portion control

- Prior to this engagement with Henry Colbeck was portion control something that you considered?
- As a result of the engagement with Henry Colbeck do you give greater consideration to portion control?
- Is it important to you and your business to offer your customers a range of portion sizes?
- Will you continue to monitor the portion size of your meals?

## Future plans

- Are you happy with the changes?
- Will you stick with the changes that you've made?
- Do you plan to make any further changes?

## AOB

- Is there anything further you'd like to add about this process?



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# Intervention deliverer interview topic guide

## Interviewee background

- Please could you introduce yourself and state your role in Henry Colbeck
- How long have you been working for Henry Colbeck?
- What do you feel separates Henry Colbeck from other suppliers in the industry?

## Motivation for the work

- History of portion control
  - What work that you know of has been done broadly, what work has Henry Colbeck done specifically?
- Why were you interested in furthering such work (motives)?
  - What does your business stand to gain from such work?
  - Is it purely financial, or other broader enhancement of the industry?
- How did this specific work come to fruition?

## Development

- What was your role in the development process?
- What was your role in the delivery process?
- How did you identify suitable project partners and speakers for the event?
- What role did the University research team play in the development of the intervention?
- Incentives, why were they chosen?
- Did it detract from your usual business operations?
- Was it costly to the business?

## Engagement event

- Was it delivered as you had envisioned?
- What did you like most about the event?
- Any problems on the day?
- Any feedback from those that attended?
- Anything that you would do differently?

## Posters

- Please could you detail the design process regarding the posters?
  - Prompts:
    - Costs
    - Time
    - Stakeholders
    - Designers
- You offered two posters, was there a preference for one over the other?
- Did you receive any feedback from owners?

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- Anything learnt for future poster production?

## Incentives

- You offered both loyalty scheme points and a free case of packaging, how were they received?
- How important did you feel they were to getting businesses to trial the smaller portions?
- Is there anything else that you considered offering?

## Packaging

- You have a wide range of different packaging, was there a particular type you were interested in promoting as part of this work?
- Does the active promotion of specific packaging types raise any issues with customers, for examples those customers that have their own branded packaging?
- Did you receive any useful feedback from your customers?

## Your assessment

- Overall how have your customers responded to this work?
- Do you feel that this project has been significant increase in your efforts to promote portion control and smaller portions compared to previous efforts?
- What is your overall assessment of the project? Are you happy? Was this extra and unnecessary work?
- What were the major learning issues for you?
- Did anything surprise you?
- Did you personally enjoy the work?
- Anything you didn't enjoy or found frustrating?
- Anything that you would do differently?
- What does Henry Colbeck, gain from this work?
- What have you gained personally from this work?

## Future plans for smaller portions

- You have continued to the develop packaging for smaller portions, please can you detail what further work you done since the work with the feasibility study
- What was your motivation to continue on with this work?
- How receptive have your customers been?
- Do you have any other future work or ideas regarding portion control or reduced sized portions that you would like to detail?

## AOB

- Is there anything further you'd like to add about this process?