

Additional files

- Additional file 1: Topic guides (.pdf)
 - Topic guides for each of the interview types (Local Government/Health Board Leads/Partners/Intervention Nursery Managers)
- Additional file 2: Table showing staff training scores (in-person vs online) (.pdf)
 - This table presents data on the staff training scores for both in-person and pre-recorded training
- Additional file 3: Self-assessment scores full table (.pdf)
 - This table presents data on the self-assessment summary categories across each cycle and the percentage change in summary score across the cycles
- Additional file 4: Physical activity and nutrition goal achievement (.pdf)
 - This figure presents the percentage of goals by level of achievement for both physical activity and nutrition

Additional file 1: Topic guides

NAP SACC UK: Local Government/Health Board Leads Topic Guide

Before starting the interview

Ensure participant has read information sheet. Remind participants: the interview will be recorded; they can skip questions or pause/stop the interview at any time; we CANNOT guarantee anonymity (as we are only interviewing 4 commissioners) and they should bear this in mind in their responses.

At the end of the interview we will check if there are any issues they do not wish us to report.

If requested, we can send a full transcript of the interview for them to redact as they wish.

Check participant is happy to proceed and take verbal consent.

For researcher: Questions 5 and 8 are top priority, followed by questions 11, 12, 13, 14, 15

Your role

1. Tell me a bit about your role within the Local Authority/Health Board (LA/HB).	<ul style="list-style-type: none">• Remit and responsibility• Probe responsibility for early years and child health
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Local context

2. Tell me a bit about the local area you are responsible for.	<ul style="list-style-type: none">• Geographical patch• Demographics (e.g. deprivation levels, ethnic make-up etc)
3. What are the local priorities for child health in your area?	<ul style="list-style-type: none">• How are these priorities determined?
4. What's already happening in your area around childhood obesity prevention?	<ul style="list-style-type: none">• Do you feel what is currently offered is enough/appropriate?
5. Your LA/HB agreed to take part in NAP SACC originally back in 2018/19. It's now	<ul style="list-style-type: none">• Changes in local priorities, national government, staff within the LA/HB, other early years programmes in the area, Brexit, COVID, cost of

2023/4. What has changed in the past 5-6 years that might have affected NAP SACC?	<ul style="list-style-type: none"> living crisis, expansion of childcare provision, shortage of staff, any other significant contextual changes. Recent reports indicating worsening child health, especially in under 5s
6. What do you feel are the best the routes of communication to Early Years settings around updated guidance/research for Early Years health (particularly PA and nutrition)?	

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Involvement in NAP SACC UK

7. Do you know the history of why your LA/HB decide to take part in NAP SACC?	<ul style="list-style-type: none"> How does it fit with current local policies?
8. The LA/HB provided the staff to work as NAP SACC UK Partners in supporting the nurseries. How do you think this went overall?	<ul style="list-style-type: none"> Probe positive and negative experiences E.g. +ve - opportunities for staff development/career progression, meeting local priorities (any other opportunities coming off the back of NAPSACC e.g. additional work with nurseries as a result?) - E.g. -ve - managing existing staff workloads, staff skills, capacity and capabilities, unintended consequences - How it fits with other work they're doing locally - Delivering something so prescriptive?
9. What do you think the benefits of being involved in NAP SACC have been?	<ul style="list-style-type: none"> For LA/HB For NAP SACC UK Partners For Early Years settings
10. What have been the challenges of being involved in NAP SACC?	<ul style="list-style-type: none"> For LA/HB For NAP SACC UK Partners For Early Years settings

Future

11. From your experience so far would you continue using NAP SACC in your local area?	<ul style="list-style-type: none"> If no, why not? (prompt on budget, staffing constraints, existing interventions, etc) Is there the budget and would you be willing to continue to cover the cost of staff to deliver NAPSACC? Would you be willing to pay for a licence for the intervention (any other experience of this)? This could be around 23,000 pounds based on current US license fee costs Would include access to NAPSACC resources (website) and training and support Would you still want access to a university NAPSACC team to support and advise the implementation and evaluation of the programme?
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	<ul style="list-style-type: none"> • Do you think nurseries in your area will want to take part in NAPSACC? (recruitment potential) • Who would be the most appropriate staff to deliver it in the future?
12. Would you recommend it to other LA/HBs?	<ul style="list-style-type: none"> • Why? Any caveats? • Are there some areas you think it would work better than others?
13. What factors are most likely to affect the funding or commissioning of a programme like NAP SACC UK?	<ul style="list-style-type: none"> • Locally, nationally? • Do LA/HB have resources to commission externally or will it only ever work by using their staff?
14. Do you feel NAPSACC fits well with local policies on improving child health moving forwards?	<ul style="list-style-type: none"> • Could NAPSACC help you achieve progress towards local child health improvement goals?

Closing

15. What would be the best way to disseminate the findings of the study?	<ul style="list-style-type: none"> • In your local area? • To other local authorities or health boards elsewhere? • What are the most important things to get across? Best methods/opportunities to use?
16. Is there anything else you would like to tell me about the study?	
17. Do you have any questions for me?	

NAP SACC UK: Partner Topic Guide

Before starting the interview

Ensure participant has read information sheet and consent form has been signed.

Remind participants: the interview will be recorded; they can skip questions or pause/stop the interview at any time; the interview is confidential (unless child safeguarding issue arises).

About you

1. Tell me a bit about your professional background and experience	<ul style="list-style-type: none"> • Briefly probe previous experience/knowledge of <ul style="list-style-type: none"> - Physical activity - Nutrition - Early years
2. How did you get involved in NAP SACC UK?	<ul style="list-style-type: none"> • How/why they got involved • How it fits with their (wider) role

Training and support

3. How did you find the initial Partner training at the start of the intervention (physical activity and nutrition)?	<ul style="list-style-type: none"> Was it useful? Did it cover the right things, at the right level? How did it work being in-person/online/mixed? How well prepared did you feel for delivering workshops and supporting nurseries?
4. How useful was the online top-up training (with Kim and Ruth)?	<ul style="list-style-type: none"> What did they get from it? Was it necessary?
5. Did you have to ask the NAP SACC team for additional info or support?	<ul style="list-style-type: none"> What sort of questions did you have? Were the team able to help? Did you look for information or resources elsewhere? What other information would have been useful?
6. Did you discuss your work with other NAP SACC partners?	<ul style="list-style-type: none"> What sort of things did you discuss? Would regular meetings between Partners have been helpful?
7. What additional support do you think Partners would need if NAP SACC was rolled out?	<ul style="list-style-type: none"> Direct support (e.g. online forum? Specific NAPSACC contact point? More training?) Indirect support (e.g. better accommodation of the role within current commitments?)

Nurseries

8. Tell me about the nurseries you worked with.	<ul style="list-style-type: none"> How many did you work with? Nursery context (demographics, deprivation level, available resources) Relationship they developed with manager/staff <ul style="list-style-type: none"> Has there been a nursery manager change? And how has that affected NAP SACC implementation? Were some easier to work with than others? Why? Did you feel the staff were engaged with the programme? Which bits?
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Workshops

9. How did you find trying to set up the workshops with your nurseries? (Ask relevant questions below)	<ul style="list-style-type: none"> What made it challenging/straight forward? Was there a delay? Why? Did they do in-person/online/none?
10. IN PERSON TRAINING:	<ul style="list-style-type: none"> When did this happen? How many staff attended? Did you feel comfortable delivering the training sessions? Did it cover the right topics? Was it relevant to nursery staff? Was it at the right level? What went well/less well? Level of staff engagement Did it affect your relationship with staff? If delayed, how did this affect delivery of NAP SACC and goals?

11. ON-LINE TRAINING:	<ul style="list-style-type: none"> • Why did they opt for online training? • When did this happen? • How was this implemented? (Did staff watch together or individually?) • Did you get any feedback from manager/staff on what they thought of the training? • Did you notice any difference between nurseries engaging in in-person or online training?
12. NO TRAINING:	<ul style="list-style-type: none"> • Why did the nursery not do any training? • How did this impact the goal setting and engagement with NAP SACC?

Review & Reflect

13. How did you find using the R&R with the nursery managers?	<ul style="list-style-type: none"> • When did this happen? • Did they complete it with manager? Online or in-person? • Was it a useful exercise for the nursery? • Any problems? • Differences between cycle 1 and cycle 2 (if both cycles completed)?
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Goals

14. Tell me about the sorts of goals the nurseries set in cycle 1	<ul style="list-style-type: none"> • Why were they chosen? • How much progress was made? • Do you feel that the progress recorded on the goal setting document was accurately reflected what happened in the nursery setting? • Facilitators/barriers to progress?
15. What sorts of goals did they set in cycle 2 (if applicable)?	<ul style="list-style-type: none"> • Why were they chosen? • Was process of choosing them different from cycle 1? • Easier or harder to achieve than cycle 1? Why? • Was it useful having two cycles?
16. If they didn't do a second cycle...	<ul style="list-style-type: none"> • Why didn't this happen? • What impact did this have on their progress? • What impact might it have had if it went ahead?
Particular issues to explore	<ul style="list-style-type: none"> • Ability to influence menus (e.g. if external catering company) • Staff issues (for Partners themselves; for nursery staff) • Monitoring of lunchbox contents • Cost of living and impact on food prices • Impact of covid • Any other issues identified during the course of the trial

Nursery support

17. Tell me about how you offered ongoing support to nurseries	<ul style="list-style-type: none"> • What sort of support did you offer? • How often and in what format (email, phone, video call, in person?)
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	<ul style="list-style-type: none"> • Did you provide nurseries with extra resources (other than NAPSACC resources)? What and why? • Did some nurseries require more support than others? Why? • Did you feel able to support nurseries adequately?
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Future

18. How have you found working on the NAP SACC project?	<ul style="list-style-type: none"> • What did you enjoy the most? • What were the biggest challenges?
19. How well did it fit with your current role?	<ul style="list-style-type: none"> • Complementary or in tension with other parts of role? • Fit with skills and experience?
20. How much time did your NAP SACC work take?	<ul style="list-style-type: none"> • More or less than you expected? • What was most time-consuming?
21. Would it be sustainable for NAP SACC to become part of your role?	<ul style="list-style-type: none"> • What would need to happen for this to be possible?
22. Is there anything you would change about the NAP SACC programme?	<ul style="list-style-type: none"> • Things to include or take out?

Closing

23. Is there anything else you would like to tell me about the study?
24. Do you have any questions for me?

NAP SACC UK: Intervention Nursery Managers Topic Guide

Before starting the interview

Ensure participant has read information sheet and consent form has been signed.

Remind participants: the interview will be recorded; they can skip questions or pause/stop the interview at any time; the interview is confidential (unless child safeguarding issue arises).

Stress I am here to evaluate the intervention and am not involved in the delivery or assessment of the outcome measures. It is important we get your honest opinion on the study.

Nursery context

25. Tell me about your role as manager in the nursery	<ul style="list-style-type: none"> • Are they full time? Are they also the owner? • If part of a chain, explore their relationship with management and other nurseries • If part of a school, explore their relationship with the school management. How separate or integrated are they? • Has there been a nursery manager change? • And how has that affected NAP SACC implementation?
26. Why did you decide to take part in NAP SACC UK?	Any physical activity or nutrition related issues you were already concerned about with your children

<p>27. Have you been involved in any other major initiatives since starting NAPSACC</p>	<ul style="list-style-type: none"> • What did this/these initiatives focus on? • Did these affect your participation in NAP SACC UK in any way?
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Remind manager of the NAP SACC elements (R&R, workshops, goal setting, Partner support) and explain we want to get their views on each of these, as well as the overall impact NAPSACC has had in their nursery.

Review & Reflect

<p>28. How did you find completing the Review and Reflect form?</p>	<ul style="list-style-type: none"> • Who did you complete it with (and when)? • Was it useful? What did it highlight? • Any problems? • Differences between cycle 1 and 2? (If applicable)
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Staff workshops

<p>29. When did your staff workshops take place?</p>	<ul style="list-style-type: none"> • If delayed, explore why and what impact this had.
<p>30. What did you think of the physical activity and nutrition NAP SACC workshops offered to your staff?</p>	<ul style="list-style-type: none"> • Were they useful? How? • Any problems? • Staff reactions to the workshops
<p>31. [If relevant] How was the Partner in delivering the workshops?</p>	<ul style="list-style-type: none"> • Quality of training sessions • Benefits/drawbacks of being in-person • Were they the most appropriate person to deliver the workshops? (Personality, level of knowledge)
<p>32. [If relevant] Tell me about the online training?</p>	<ul style="list-style-type: none"> • Why did they do it online? • Did staff watch together or online? • Quality of online training • Staff reactions/engagement with online workshops • Benefits/drawbacks of being online
<p>33. [If relevant] How useful was the online top-up training?</p>	<ul style="list-style-type: none"> • How well was this completed by staff (if known)? • Was the top-up session needed?
<p>34. How were staff compensated for attending the out-of-hours training?</p>	<ul style="list-style-type: none"> • TOIL, overtime? • Was the manager happy to accommodate this? • Do they have a specific training budget? • How did they cover staff absences if done during worktime?
<p>35. Additional resources: Did you look for or use any other resources or forms of training to help you?</p>	<ul style="list-style-type: none"> • What did they use? • Why was this needed? • What extra training or resources might have been useful?
<p>36. If the nursery didn't do the training</p>	<ul style="list-style-type: none"> • Why did the training not happen? • Did they consider doing the online training? • What impact did not doing the training have? • Did the staff have enough knowledge to implement the goals?

Goal setting

<p>37. Tell me about the goals you set in cycle 1.</p>	<ul style="list-style-type: none"> • Why did you choose them? • Who helped set them (Partner? Staff? Owner?) • How much progress did you make? • What helped or hindered your progress?
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(SRA to remind them of what goals they set)	<ul style="list-style-type: none"> How engaged were the staff in delivering these goals?
38. Tell me about the goals you set in cycle 2.	<ul style="list-style-type: none"> Why did you choose them? How much progress did you make? How engaged were the staff in delivering these goals? Easier or harder to achieve than cycle 1? Why? Was it useful having two cycles?
39. If they didn't do a second cycle...	<ul style="list-style-type: none"> Why didn't this happen? What impact did this have on their progress? What impact might it have had if it went ahead?
40. We asked you to come up with both physical activity goals and some nutrition goals	<ul style="list-style-type: none"> was it easier to set goals in one area than the other? was there a difference in how easy or hard it was to make changes in these two areas?

Partner support

41. Tell me about the contact you had with your NAP SACC UK Partner.	<ul style="list-style-type: none"> Was it useful? How often and what format was the contact? Were they the right person to offer support? Could they answer all your questions? Were there any problems? Did the support differ between cycle 1 and cycle 2?
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Overall reflections

42. What sort of impact (if any) has NAPSACC had in your nursery?	<ul style="list-style-type: none"> children's physical activity and diet staff practices policies, structures and the nursery environment Relationship with the Partner Engagement with parents Anything else
43. What have been the biggest benefits of NAP SACC for your nursery	<ul style="list-style-type: none"> (if not already mentioned in above question)
44. What have been the biggest challenges?	<ul style="list-style-type: none"> Probe staffing issues, cost of living crisis and Covid/Brexit Constraints if part of school/chain or have external catering company For SCOTLAND – impact of Scottish funding Any other issues? Any unintended consequences?
45. Will you be able to sustain the changes you've made now that the study has ended?	<ul style="list-style-type: none"> Facilitator or barriers How might staff turn-over affect this?
46. Will you continue to use the Review & Reflect and goal-setting process?	<ul style="list-style-type: none"> When and how often?
47. Where do you receive/look for updated guidance/research around Early Years health currently (particularly PA and nutrition)? How would you like to hear about this?	<ul style="list-style-type: none">
48. Is there anything you would change about the programme?	<ul style="list-style-type: none"> Things to add in or take away?

Recruitment (ask if you have time)

How did you find recruiting children to take part in the study?	Was this difficult? Why? What could have helped this?
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Closing

49. Is there anything else you would like to tell me about the study?
50. Do you have any questions for me?

Additional file 2: Table showing staff training scores (in-person vs online)

Training workshop	Delivery mode	Attendance (in-person) Given access (online)	Number completing eval form	Overall quality of training	Facilitator quality	Usefulness of training
Nutrition	Overall	N/A	96	4.66 Median: 5 Range: 2 (3-5) IQ: 1	4.90 Median: 5 Range: 2 (3-5) IQ: 0	4.56 Median: 5 Range: 4 (1-5) IQ: 1
	In-person	74	62	4.85 Median: 5 Range: 1 (4-5) IQ: 1	4.90 Median: Range: IQ:	4.67 Median: 5 Range: 4 (1-5) IQ: 1
	Online	112	34	4.30 Median: 4 Range: 2 (3-5) IQ: 1	N/A	4.35 Median: 5 Range: 3 (2-5) IQ: 1
Physical Activity	Overall	N/A	86	4.58 Median: 5 Range: 2 (3-5) IQ: 1	4.68 Median: 5 Range: 2 (3-5) IQ: 1	4.41 Median: 5 Range: 3 (2-5) IQ: 1
	In-person	65	65	4.68 Median: 5 Range: 2 (3-5) IQ: 1	4.68 Median: 5 Range: 2 (3-5) IQ: 1	4.44 Median: 5 Range: 2 (3-5) IQ: 1
	Online	112	21	4.25 Median: 4.5 Range: 2 (3-5) IQ: 1.25	N/A	4.28 Median: 4 Range: 3 (2-5) IQ: 1
Top-up	Online	76	18	4.44 Median: 4.5 Range: 2 (3-5) IQ: 1	N/A	4.30 Median: 4 Range: 2 (3-5) IQ: 1

Additional file 3: Self-assessment scores full table

Self-assessment summary scores

	Cycle 1 (n=20)	Cycle 2 (n=10)	Intervention end (n=19)	% change - overall (n=19)	% change - completed 1 cycle (n=9)	% change – completed 2 cycles (n=10)
Child Nutrition Summary Score	2.97 (0.32)	3.17 (0.30)	3.41 (0.27)	14.6 (10.6)	12.1 (7.9)	16.8 (12.6)
Food provided	2.88 (0.46)	2.96 (0.48)	3.14 (0.43)	10.0 (14.6)	7.3 (10.9)	12.4 (17.5)
Beverages provided	3.76 (0.27)	3.87 (0.17)	3.95 (0.12)	5.4 (8.5)	4.7 (11.1)	6.1 (5.9)
Feeding environment	3.37 (0.24)	3.54 (0.27)	3.58 (0.24)	6.4 (9.2)	5.7 (3.9)	7.0 (12.4)
Menus and variety	3.12 (0.93)	3.33 (0.87)	3.35 (0.79)	2.6 (13.5)	-3.1 (8.8)	8.3 (15.4)
Nutrition education and professional development	2.70 (0.65)	3.34 (0.39)	3.59 (0.38)	41.4 (37.6)	31.1 (21.8)	50.7 (46.9)
Nutrition policy	2.05 (0.89)	2.00 (1.15)	2.84 (1.07)	58.8 (84.7)	64.8 (83.5)	53.3 (89.9)
Lunch Box Summary Score	1.89 (0.84)	2.15 (1.07)	2.31 (1.20)	22.0 (30.6)	15.3 (21.9)	28.1 (36.8)
Lunch box food/drink provided	2.36 (0.36)	2.71 (0.76)	2.78 (0.60)	19.8 (27.0)	10.0 (18.7)	28.1 (31.7)
Lunch box education and professional development	1.68 (1.03)	2.45 (1.42)	2.63 (1.46)	87.3 (124.1)	74.9 (129.1)	98.3 (125.3)
Lunch box policy	1.50 (0.76)	1.40 (0.97)	1.95 (1.35)	37.7 (96.5)	18.5 (33.8)	55.0 (130.1)
Lunch box feeding environment	3.62 (0.31)	3.89 (0.20)	3.82 (0.19)	7.1 (13.2)	0.6 (1.3)	12.6 (16.4)
Physical Activity and Play Summary Score	2.71 (0.41)	3.05 (0.53)	3.27 (0.52)	25.3 (31.1)	16.6 (18.6)	33.0 (38.6)
Time provided	3.25 (0.53)	3.53 (0.45)	3.60 (0.39)	14.2 (25.6)	18.5 (31.8)	10.2 (19.4)
Indoor play environment	2.98 (0.94)	3.35 (0.67)	3.32 (0.84)	27.0 (65.9)	3.4 (17.6)	48.3 (85.6)
Physical activity staff practices	3.26 (0.29)	3.53 (0.32)	3.61 (0.38)	11.2 (12.3)	7.9 (12.7)	14.1 (11.7)
Physical activity education and professional development	2.33 (0.77)	2.75 (0.92)	3.16 (1.03)	59.7 (97.7)	23.1 (36.3)	92.6 (124.1)
Physical activity policy	1.75 (0.97)	2.10 (1.29)	2.68 (1.25)	97.8 (129.8)	86.1 (132.9)	108.3 (133.2)
Outdoor Play and Learning Summary Score	2.66 (0.48)	2.98 (0.53)	3.21 (0.60)	23.1 (32.8)	11.3 (30.9)	33.8 (32.2)
Outdoor play	3.48 (0.60)	3.62 (0.43)	3.62 (0.42)	2.6 (14.5)	1.7 (10.8)	3.4 (17.8)
Outdoor physical environment	3.05 (0.46)	3.22 (0.45)	3.20 (0.55)	5.5 (17.5)	5.1 (11.3)	5.8 (22.3)
Outdoor play education and professional development	2.27 (0.97)	2.67 (1.06)	3.21 (0.77)	72.8 (92.5)	25.8 (67.1)	115.1 (94.5)
Outdoor play policy	1.85 (1.09)	2.40 (1.35)	2.79 (1.36)	94.3 (137.2)	62.0 (137.9)	123.3 (137.0)
Screen Time Summary Score	2.21 (0.41)	2.30 (0.62)	2.70 (0.80)	24.9 (34.7)	22.2 (26.6)	27.4 (42.0)
Screen time availability and staff practices	3.50 (0.49)	3.55 (0.52)	3.61 (0.43)	3.1 (9.4)	-0.3 (8.5)	6.2 (9.6)
Screen time education	1.90 (0.85)	1.95 (1.17)	2.55 (1.20)	48.4 (79.1)	50.4 (70.0)	46.7 (90.2)
Screen time policy	1.25 (0.55)	1.40 (0.97)	1.95 (1.35)	68.4 (115.7)	66.7 (111.8)	70.0 (125.2)

Additional file 4: Physical activity and nutrition goal achievement

