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# Review of evidence to guide primary health care policy and practice to prevent childhood obesity

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The rapidly rising incidence of overweight and obesity in Australia, especially among children, has been identified as a serious national issue with clear health, social and economic costs to the community.<sup>1-3</sup> Recent government health policy to prevent overweight and obesity has focused on children, young people and their families, with identification of strategies for action at the national level and in specific settings, including the primary care setting.<sup>4</sup>

Primary care includes general medical practice, community health services and other community-based and private health services. These services have regular contact with children and their parents, particularly during the early years, and thus are in an influential position to promote healthy lifestyles at an individual, family and community level and to monitor and provide support to modify factors that contribute to unhealthy weight gain. A focus on young children and their families is consistent with growing recognition that the early years of children's lives set the foundations for their future lifestyle habits and wellbeing, and that there is a need to create social, cultural, physical and economic environments that encourage and support healthy eating and active lifestyles of families with young children.<sup>5-7</sup> Family, childcare, primary health care (PHC), early childhood education and the community are influential environments for young children and need to be engaged in an integrated approach to promote healthy weight.<sup>6,8,9</sup>

To translate national policy into effective service delivery to prevent childhood obesity, primary health sector decisionmakers not only require information on *why* there is need for action but also answers to questions relating to *what* action is effective, *how* it is best delivered and *by whom*.<sup>10,11</sup> In the case of how to promote healthy weight among young children, these questions include:

- Who are the most appropriate PHC providers for mobilising change within families and other early childhood environments?
- What administrative, attitudinal, knowledge, skills and training barriers prevent effective engagement of these PHC providers with parents and early childhood service providers?
- Which interventions have been effective in overcoming these barriers, and to what extent are these replicable in different regional contexts and across larger population groups?
- What are the implications for policy, collaborations and service delivery systems, and what supports, resources and capacity-building are required for program development and implementation?
- What are the associated opportunity costs and risks?

Our article distils the policy and practice implications of a recent literature review,<sup>12</sup> guided by the above questions and conducted as a first step in synthesising evidence for a portfolio of interventions in the PHC setting to promote healthy weight among children aged 2–6 years. Our review aimed to identify key barriers presently hampering effective engagement of PHC providers in the promotion of healthy weight among children aged 2–6 years. We also sought to identify practical aspects of promising interventions that have overcome these barriers. Particular emphasis was placed

## ABSTRACT

**Objectives:** To identify key barriers to effective engagement of primary health care (PHC) providers and families in promoting healthy weight among children aged 2–6 years, and to examine promising interventions to identify policy goals to overcome these barriers.

**Methods:** We conducted a literature review of published and unpublished articles from January 1990 to February 2006 using keywords relating to childhood obesity, risk factors, prevention, populations and primary care provider interventions, constraints and models. We identified barriers to engagement by PHC providers. Appraisal of “promise” was based on best available evidence and consideration of strengths and weaknesses of interventions in specific contexts and settings.

**Results:** Of 982 interventions aimed at the primary prevention of overweight and obesity among children, few related to 2–6-year-olds, with only 45 interventions meeting the inclusion criteria and 11 ranking highly on key criteria. Areas of weakness were low-level engagement by PHC providers, focus on single risk factors rather than a multidimensional approach, and lack of a population focus. A range of administrative, attitudinal, knowledge, skills and training issues were identified as barriers to effective engagement of different PHC providers with parents and other early childhood service providers.

**Conclusions:** Engagement of PHC providers in prevention of childhood obesity requires a systematic approach involving practice protocols, assessment tools, client support material and referral pathways, as well as adequate training and sufficient staff for implementation. A more comprehensive approach could be promoted by increased collaboration, agreed role delineation, consistent public health messages and better coordination between PHC providers and other service providers, facilitated at service policy and administration level.

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on how PHC providers can engage with parents and support action by providers in other key settings — notably childcare, early education and the community.

## Methods

For the purposes of our review, PHC providers included general practitioners, practice nurses, community/child/maternal health nurses, allied health professionals (eg, dietitians, physiotherapists and exercise physiologists), multicultural and Indigenous health workers, and health education/promotion specialists.

We drew on the multimethod approaches of Mays et al<sup>11</sup> and Flynn et al<sup>13</sup> to appraise the context, develop a contextual

**1 Secondary appraisal of 45 interventions meeting study inclusion criteria (number of interventions achieving high, medium or low scores on appraisal criteria)**

Score	Evaluation rigour	PHC provider engagement	Parent participation	Impact and transferability	Population focus	Upstream involvement	Multidimensional
Low	29	12	22	25	27	19	32
Medium	11	21	15	13	14	22	9
High	5	12	8	7	4	4	4

PHC = primary health care.



framework and collate evidence on the different tiers of information required by practitioners and policymakers. The methodology aimed to outline and appraise key characteristics of promising interventions based on best available evidence,<sup>10,14</sup> and to outline the strengths and weaknesses of each intervention strategy in specific contexts and settings.

While randomised controlled trials are desirable as a means of appraising the efficacy of interventions for reducing childhood obesity, such studies are less able to identify the host of social, cultural, economic, educational and organisational considerations that enhance prevention efforts, nor the collaboration between different PHC providers, childcare centres, preschools, community groups and parents required to drive effective programs in different regional settings. Hence, other forms of evidence, such as process, impact, parallel and intuitive evidence, were also used, as suggested by Rychetnik and Wise<sup>14</sup> and Swinburn et al,<sup>10</sup> to assess quality and effectiveness of interventions and to guide policy decisions.

Compilation of data involved scanning 24 databases (including 10 grey literature databases) covering published and unpublished articles from January 1990 to February 2006. Our search used 42 primary and 30 secondary keywords related to the issue, risk factors, populations and PHC provider interventions, constraints and models.<sup>12</sup> We also did a hand search of government and multinational organisation policy papers and reports, systematic and non-systematic reviews, conference proceedings, theses and dissertations, and contacted key Australian and international informants for information on recent or unpublished reports and documents. Barriers to engagement by PHC providers were identified through systematic and non-systematic reviews and analysis of primary studies of interventions.

Interventions were included if they aimed to reduce risk factors for obesity in children aged 2–6 years; focused primarily on prevention and early intervention; were non-commercial; involved PHC providers as key facilitators of change; encouraged participation of family members; and evaluated the intervention outcomes, process, and/or acceptability. All selected interventions were then appraised and categorised as “high”, “medium” or “low” standard using a scoring system with pre-set criteria, based on the method of Flynn et al.<sup>13</sup> This method assessed the interventions according to their methodological rigour; program impact and transferability; capacity to engage PHC providers; capacity to enhance parental participation; ability to encourage PHC providers to adopt a population-based approach incorporating the family, community and broader environment; ability to shift the role of PHC providers from emphasis on treatment towards prevention through involvement in more upstream activities (education, environmental policy and advocacy); and capacity to encourage parents and PHC

providers to deal with the complex, multidimensional risk factors associated with overweight and obesity in young children.

Parallel evidence from published reviews of successful interventions in other paediatric public health areas was also compiled using the same methods. Key characteristics of interventions were recorded in a standard template, and analysis involved identification of patterns, exploration of relationships, mapping of intervention alternatives, and synthesis of findings in terms of best practice solutions for PHC providers working in different settings in Australia.

An advisory group of national and international experts in paediatric obesity, population health strategies, nutrition, physical activity, health economics, health policy and governance, and family and community development provided input to the research methods and to assessment and interpretation of the findings. Project staff also met with national and state policymakers to clarify the needs and interests of decisionmakers.

**Results**

**Interventions**

We identified 982 interventions aimed at the primary prevention of overweight and obesity among children, but few related to 2–6-year-olds and only 45 interventions (including 30 from Australia) met the inclusion criteria. Based on the secondary appraisal, only 11 of these 45 interventions were ranked either medium or high in terms of engaging PHC providers and parents as well as for at least two of the other key criteria.<sup>12</sup> Areas of weakness were focus on single risk factors rather than a multidimensional approach, lack of population focus, and low methodological rigour of planning and evaluation (Box 1).

**Barriers to engagement**

Although current policies and strategies<sup>4,15</sup> recognise the critical roles that could be played by parents, PHC providers and early childhood carers and educators in promoting healthy weight among children aged 2–6 years, our review highlighted a series of organisational, attitudinal, lifestyle, knowledge, skills and training barriers<sup>16</sup> that are presently hampering action and effective communication and collaboration between these groups (Box 2).

For the 11 interventions identified as showing significant promise in terms of engaging PHC providers and parents as well as high scoring on at least two of the other key criteria, key components for overcoming organisational, attitudinal, knowledge, skills and training barriers identified in different service delivery settings<sup>12</sup> were highlighted and their potential policy implications in different contexts were analysed (Box 3).

## 2 Types of barriers affecting communication and engagement between primary health care (PHC) providers and parents

### Operational and system level barriers<sup>17,18</sup>

- Prevention of overweight is not perceived as core business of many PHC providers and is given low priority in the face of competing demands
- PHC providers, particularly general practitioners, have limited time with patients. For GPs, this limitation is exacerbated by financial pressures to maximise productivity
- Lack of resources and support staff mean there are few opportunities for preventive counselling
- There are limited referrals to specialists because of concern for patient compensation from public health insurance
- Systems for follow-up after GP visits are lacking
- There is limited collaboration between PHC providers and childcare providers, including childcare centres and pre-primary schools, as these come under the jurisdiction of different government departments

### Attitudinal and lifestyle barriers<sup>19-21</sup>

- Norms of different socioeconomic and cultural groups affect willingness and ability of parents to perceive their children as overweight. Parents are frequently sceptical about body mass index and height/weight charts
- Parents are often poor role models with regard to diet and physical activity
- PHC providers often have negative "victim-blaming" attitudes towards overweight people, resulting in a lack of response from parents who feel that PHC providers are negative and/or dismissive
- PHC providers fear parents becoming sensitive to their comments and feel uncomfortable dealing with issues of overweight
- PHC providers can be poor role models for healthy bodyweight, which adds to their feeling of discomfort in dealing with issues of overweight

- Parents' work and lifestyles limit time available to structure eating habits or prepare nutritious meals
- Families living in isolated or poorly serviced neighbourhoods may not have easy access to healthy foods or to safe areas for children to be physically active
- Fruit, vegetables and other healthy foods are often more expensive than less healthy foods and snacks
- Parents often feel powerless in light of commercial advertising and challenges from grandparents, friends and others
- Parents are more likely to take action if they perceive that their children are suffering psychologically due to poor self-esteem or bullying

### Knowledge, skills and training barriers<sup>17,22</sup>

- PHC providers often lack knowledge/understanding of the lifestyle and environmental factors affecting weight
- PHC providers have low skill proficiency and lack of training in use of behaviour management strategies
- PHC providers often lack knowledge of parental guidance techniques and ways of addressing family conflict
- PHC providers lack appropriate educational support materials and dislike the existing clinical guidelines and materials for use with parents
- Parents often receive conflicting messages about what is healthy
- Too much of the information provided emphasises *what* to do rather than assisting parents/communities in *how* to achieve it
- Information is often too general and not targeted to specific needs of different population groups
- Information and training often fail to take account of family conflicts in dealing with key issues around food, television watching, etc ♦

## Roles of PHC providers in prevention

We identified variable current roles of PHC providers in preventing early childhood obesity. While the roles of many GPs, nurses and dietitians in general practice fell within the category of individual-oriented treatment of obesity,<sup>19</sup> those in community-oriented services have a greater role in education of either families<sup>23</sup> or other health or early childhood service providers.<sup>24,25</sup> In the highest-scoring interventions, community dietitians and public health nutritionists appeared to be the most actively involved in training and development of resources for parents and other service providers to promote prevention.<sup>23-25</sup> Along with a range of health promotion officers and multicultural and Indigenous health workers, they were also most involved in community development<sup>23,26</sup> and population-oriented strategies to change policies and environments to support healthier lifestyles.<sup>25,27</sup> Successful multidisciplinary team approaches engaging families were demonstrated in a range of highly rated programs in clinical, early childhood care/education and community settings.<sup>27,28</sup>

## Discussion

The family unit is the most important influence on the development of children's lifestyle habits,<sup>6,13</sup> although parental efforts are challenged by many external influences.<sup>5,29</sup> A universal system to support parents in developing healthy eating habits and fundamental movement skills of preschool children is desirable, with additional screening and support services at appropriate ages in

selected groups to detect and assist high-risk families. Environmental supports are also essential, with development of community attitudes and social, economic and physical environments that support healthy lifestyles for children. Childcare and early education services are important in teaching and modelling healthy eating and active play for young children, and can provide useful information and practical advice for parents.<sup>23,24,28</sup> However, they need policies, procedures, staff training and resources to undertake this role.<sup>24,25,30</sup>

PHC providers have a role in giving scientifically based information and evidence-based practical advice to parents as well as policy advice, training and resources to childcare and early education providers. Because of their expert status and standing in the community, PHC providers, particularly GPs, also have a potential role in influencing community attitudes and advocating for change in broader social policy that impacts on healthy growth of children.<sup>31,32</sup>

Our review revealed variable involvement and barriers to engagement of different PHC providers in these activities. Only a quarter of the 45 interventions involving PHC providers and targeting 2–6-year-old children were ranked highly on PHC provider involvement, with dietitians/nutritionists, maternal and child health nursing, health promotion and community development services most prominent in this category.

Prevention is generally not perceived as core business of more clinically oriented PHC providers, but our review demonstrated that expansion of this role is possible with changes in organisational

### 3 Policy goals distilled from promising interventions in different settings

#### Clinical goals

- Build a culture among primary health care (PHC) providers and parents that is aimed towards prevention and healthy lifestyles, rather than treatment of overweight and obesity
- Broaden roles and responsibilities of practice nurses and child and maternal health nurses, through Australia-wide mother-and-baby clinics or through similar general practice and outreach clinics, to include initial screening and follow-up, as well as the provision of parental guidance, counselling and support
- Develop standard systems for setting up individual patient registers to store and monitor data with reminder systems, as well as smarter database tools for early recognition of obesity risk and referral
- Increase availability in general practice waiting rooms of parent-oriented educational resource materials on the promotion of healthy lifestyles among young children and families; encourage general practitioners and practice nurses to distribute these materials, as well as information on other community resources and support services
- Increase support for short professional development courses on how primary/secondary prevention can be integrated into routine care through use of non-threatening family and lifestyle counselling
- Increase participation of PHC providers, particularly nurses and paediatricians, in the development of government educational materials and handouts for use with parents

#### Childcare and preschool goals

- Promotion of better understanding by staff and parents of the importance of early development of healthy food preferences, eating habits, and active play in shaping healthy lifestyles in later life

- Participation of parents and PHC providers on steering committees with principals, childcare providers and government stakeholders, to ensure their active participation in and support for each stage in the planning, design and implementation of interventions
- Incorporation of nutrition and active play standards in quality improvement and accreditation systems
- Extension and consistency of the quality improvement and accreditation system model, and effective interventions in childcare, pre-primary and primary school settings
- Provision of financial and training incentives to childcare/preschool staff to motivate and increase their self-worth in this area
- Maintenance of individual child folders for relevant communication between care providers and families

#### Home and community goals

- Cross-disciplinary and agency communication and agreement to ensure that parents/families receive consistent messages from different sources, including the media
- Provision of more information on how parents can deal with issues such as negotiating dietary change, setting limits on television watching, and unhealthy influences of the media
- Promotion of strong partnerships between parents, childcare centres and PHC providers to support effective childcare practices in the home
- Recruitment and training of parents to become peer educators and advocates to develop and convey salient messages to hard-to-reach groups

policy and infrastructure.<sup>12</sup> Engagement of PHC providers in prevention with families requires a systematic approach with practice protocols, assessment tools, client support material and referral pathways, as well as adequate training and sufficient staff for implementation.

Although highly rated interventions engaging PHC providers were identified in childcare, early education, home and community settings, there was a lack of coordination between settings, and population-level activities to advocate for policy change to address broader socioenvironmental issues were the least likely to be implemented. A more comprehensive approach could be facilitated by increased collaboration, agreed role delineation, consistent public health messages and coordination between PHC providers and other service providers, facilitated at service policy and administration level. There is a need to explore models for collaborative early childhood service delivery across different settings (health services, childcare, early childhood education, home and community) in Australia. These models should facilitate delivery of consistent public health messages across settings and address barriers to PHC provider engagement of parents and other service providers in promoting healthy lifestyles and growth of young children. The relevance, feasibility and applicability of the various policy options assessed as promising in our review also need to be assessed in different Australian state, regional and local contexts with consideration of different socioeconomic, cultural and geographical influences.

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#### Competing interests

None identified.

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