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Davidson, Alexandra R.; Reidlinger, Dianne P.

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## REVIEW

# A review of the growth and development of Australian practice nursing: Insights for the dietetic workforce

Alexandra R. Davidson APD, MNutrDietPract  | Dianne P. Reidlinger RD, APD, PhD 

Faculty of Health Sciences and Medicine,  
Bond University, Gold Coast, Queensland,  
Australia

**Correspondence**

Dianne P. Reidlinger, Faculty of Health  
Sciences and Medicine, Bond University,  
14 University Drive, Robina, QLD 4226,  
Australia.

Email: [dreidlin@bond.edu.au](mailto:dreidlin@bond.edu.au)

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**Abstract**

**Aim:** The aim of this scoping review was to provide an overview of the development of practice nurses, and the learnings that could be applied to improve the profile of dietetics practice in primary care.

**Methods:** A scoping review synthesising peer-reviewed and other literature relevant to the development of Australian practice nurses was conducted. Structured searches using keywords 'general practice', 'nurse' and 'Australia' were conducted in PubMed and Google Scholar in June 2021. Key government websites, Department of Health and Services Australia, were searched to identify grey literature. One reviewer screened the titles and abstracts against inclusion criteria; two reviewers conducted full-text screening independently. Data on the evolution of practice nursing were extracted based on its interest and transferability to the dietetics workforce.

**Results:** A total of 102 results (82 peer-reviewed and 20 other literature) were included in the review. Key drivers for practice nurse role development in Australia were government funding, practice nurse practice standards, cost-benefit analyses of practice nurses, career and education opportunities, general practitioner and patient perspectives of practice nurses and, individual, community and local needs.

**Conclusions:** The practice nurse role has grown and strengthened and there are three key learnings that could be translated to strengthen the dietetics workforce in primary care. (1) Use and expansion of government funding, (2) furthering post-tertiary education and career opportunities, including dietetic primary care practice standards and (3) targeting underserved areas such as those that are rural and remote and building positive relationships with other stakeholders including practice nurses, general practitioners, patients and the broader primary care team.

**KEYWORDS**

dietitians, general practice, nurses, primary health care, private practice, review

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## 1 | INTRODUCTION

The Australian dietetics workforce has experienced unparalleled growth over the past decade. Membership of the professional association has increased more than sevenfold, expanding from 1049 in 1991, to 6811 members in 2016,<sup>1</sup> and 7873 members in 2021.<sup>2</sup> Similarly, available data suggests the number of dietitians employed in the healthcare sector is growing, with 2800 dietitians employed in 2011 compared with 1900 dietitians 5 years earlier.<sup>3</sup> Whilst hospitals are still the predominant work area for Australian dietitians (36%), Dietitians Australia information suggests that private practice is now the second most common area of work (31%).<sup>1</sup> Private practice dietitians are essentially primary health care workers, although some may also consult to private hospitals and industry.

Dietitians working in private practice are at the forefront of providing evidence-based, tailored nutrition education and counselling to patients in primary care.<sup>4</sup> They provide particular benefit in promoting non-drug interventions for the prevention and management of chronic disease. As private practitioners, dietitians take the role of both business manager and health professional and face challenges to establishing and operating within the private practice sector.<sup>5</sup> The challenges identified are predominantly focused on business operations including administration, bookkeeping, marketing, establishing referral pathways and retaining clientele.<sup>6</sup> These challenges are particularly relevant for new graduates, given that private practice is not widely included in the curriculum nor commonly used as a placement setting in tertiary nutrition and dietetic programs.<sup>7</sup> Thus, there is a strong need for additional and continual professional development in management and business operations to prepare dietitians for private practice.<sup>6</sup>

Collaboration between dietitians and other primary healthcare professionals is key to overcoming the challenge of establishing and maintaining strong referral relationships. Patient referrals for dietitians working in private practice are mainly sourced from general practitioners (GPs).<sup>6</sup> Dietitians must then create and build professional networks with GPs and members of general practice teams to grow referrals and develop collaborative working relationships. Co-location and referral-only off-site collaboration, are the most prominent models of collaboration between private practice dietitians and general practice teams.<sup>8</sup> In addition, shared electronic health records between general practice and allied health professionals is an emerging model of collaboration in Australian primary health.<sup>9</sup>

Practice nurses are vital members of the general practice team. In Australia, practice nurses have become an

integral part of patient care in the primary health setting,<sup>10</sup> and primarily work alongside GPs to provide comprehensive medical and nursing services for patients.<sup>11</sup> In just over a decade, the number of practice nurses employed in Australia has nearly quadrupled from ~3200 practice nurses in 2003–2004 to over 12 000 in 2015.<sup>12</sup>

The practice nurse is a relatively new career pathway for Australian nurses compared with other countries with similar health care systems. Comparatively, dietitians in Australia have been recognised since 1929,<sup>13</sup> with a limited number of Medicare Benefits Scheme (MBS) items introduced for primary care dietetics around the same time similar items were created for the practice nurse role in the form of wound care and pap smear item numbers.<sup>14</sup> In the United Kingdom practice nurses have worked in general practice since 1966, and they have been recognised in New Zealand since 1970.<sup>15</sup> In both the United Kingdom and New Zealand, practice nurses have clearly defined roles and job descriptions and are an integral part of patient care in the primary care team.<sup>16</sup> By comparison, Australian practice nurses have voiced frustration at the lack of progress in the development and definition of a clear role description and career pathways,<sup>16</sup> with the development of practice nursing in Australian general practice referred to as *ad hoc*.<sup>17</sup> Despite this, the growth of the practice nurse workforce demonstrates a successful increase in opportunities for nurses in the primary care setting.

Whilst the development of private practice dietetics has evolved as a result of workforce expansion and government policy, much of the work of dietitians in this setting fluctuates and is part time.<sup>6</sup> The Australian government has implemented several schemes and funding incentives which have impacted both private dietetic practices and practice nurse roles. MBS item numbers for practice nurses and rebates for allied health professionals as part of the Strengthening Medicare package, entitled Enhanced Primary Care, were initially implemented in 2004.<sup>14</sup> Additional item numbers for practice nurses and allied health professionals were implemented in the chronic disease management initiative in general practice in 2005.<sup>14</sup> The chronic disease management item numbers opened up opportunities for dietetics to be better utilised in primary care to address the growing prevalence of chronic disease.<sup>18,19</sup> Additionally, the Practice Nurse Incentive Program, now known as the Workforce Incentive Program, was initiated in 2012 (coinciding with the rescinding of other practice nurse MBS item numbers), and has also enabled practice nurses, Aboriginal and Torres Strait Islander health workers, and allied health professionals to achieve a higher presence in Australian primary care.<sup>20</sup> Despite the Australian government

intention for funding to better support and involve the dietetics workforce in primary care, dietitians still arguably go largely unrecognised as frontline primary care workers compared with their nursing colleagues.

Private practice dietitians who rely on general practice referrals may learn from their nursing colleagues and the journey of practice nurses as they became embedded in Australian primary care. The achievement of practice nurse role development when compared with the development of the dietitian's role in primary care represents remarkable success in terms of role expansion and growth. To provide an overview of the development of practice nurses, and the learnings that could be applied to improve the profile of dietetics practice in primary care, this scoping review aimed to synthesise peer-reviewed and other literature relevant to the development of Australian practice nurses.

## 2 | METHODS

A scoping review was undertaken.<sup>21,22</sup> A structured search of grey and peer-reviewed literature on practice nurses in Australia was undertaken to answer the broad research question: How has the practice nurse role evolved in Australia? A preliminary search returned a key paper from 2007,<sup>15</sup> which the research team used to construct key areas of practice nurse workforce development and sustainability. These key areas were also evident from the titles of other papers returned in the preliminary search and were used as inclusion criteria: government funding and policy, practice nurse professional practice standards, cost-benefit analyses of practice nurses, career and education opportunities, GP perspectives on practice nurses, patient perspectives on practice nurses, and consideration of individual, community and local needs. To efficiently synthesise included papers and to effectively summarise implications for dietetics, these key areas were further collapsed into three categories for data analysis: government funding support, the role of professional organisations, and recognition of local community needs.

All searches were executed on 15 June 2020 and further updated on 24 June 2021. PubMed was used as the primary database to identify peer-reviewed literature, supplemented by searches on Google Scholar, plus selective grey literature searches on Australian Government websites: Department of Health and Services Australia. In line with the leading grey literature search tool kit, produced by the Canadian Agency for Drugs and Technology in Health which recommends reviewing the first 50–100 results retrieved in online searches to ensure the most relevant results, only the first 5 pages (government

TABLE 1 Keywords searched for database and grey literature sites for relevant reports on practice nurses in Australia

Database	Keywords searched	Number of results screened
PubMed (includes MEDLINE, and other biomedical citations from life science journals and online books).	'nurse' AND 'general practice' AND 'Australia'	All results screened
Google Scholar	'nurse' AND 'general practice' AND 'Australia'	First 10 pages including 100 results (in first <sup>a</sup> and second search <sup>b</sup> ) Only 6 additional results returned in second search.
Department of Health <a href="https://www.health.gov.au/">https://www.health.gov.au/</a>	'practice nurse'	First 5 pages including 50 results (both searches <sup>a,b</sup> )
Department of Human Services <a href="https://www.humanservices.gov.au/">https://www.humanservices.gov.au/</a> Note that this website changed to Services Australia; <a href="https://www.servicesaustralia.gov.au/">https://www.servicesaustralia.gov.au/</a> on 1 February 2020	'practice nurse'	First 5 pages including 50 results (both searches <sup>a,b</sup> )

<sup>a</sup>First search conducted on 15 June 2020.

<sup>b</sup>Second search conducted on 24 June 2021.

websites) or 10 pages (Google Scholar) resulting from grey literature searching were screened.<sup>23</sup> Databases, keywords and number of results screened are outlined in Table 1. Different search strategies were used for grey literature searching to produce the most relevant results to meet the aim of the research.

Peer-reviewed literature was identified through a search of PubMed as a primary source of data and Google Scholar as an additional source. Google Scholar was used in addition to PubMed as it was predicted that not all literature on the development of the practice nurse role in Australia would be published in scientific journals. To avoid personalised results in Google Scholar, accounts linked to Google were logged off prior to the search.<sup>24</sup> All search results from PubMed were included. However,

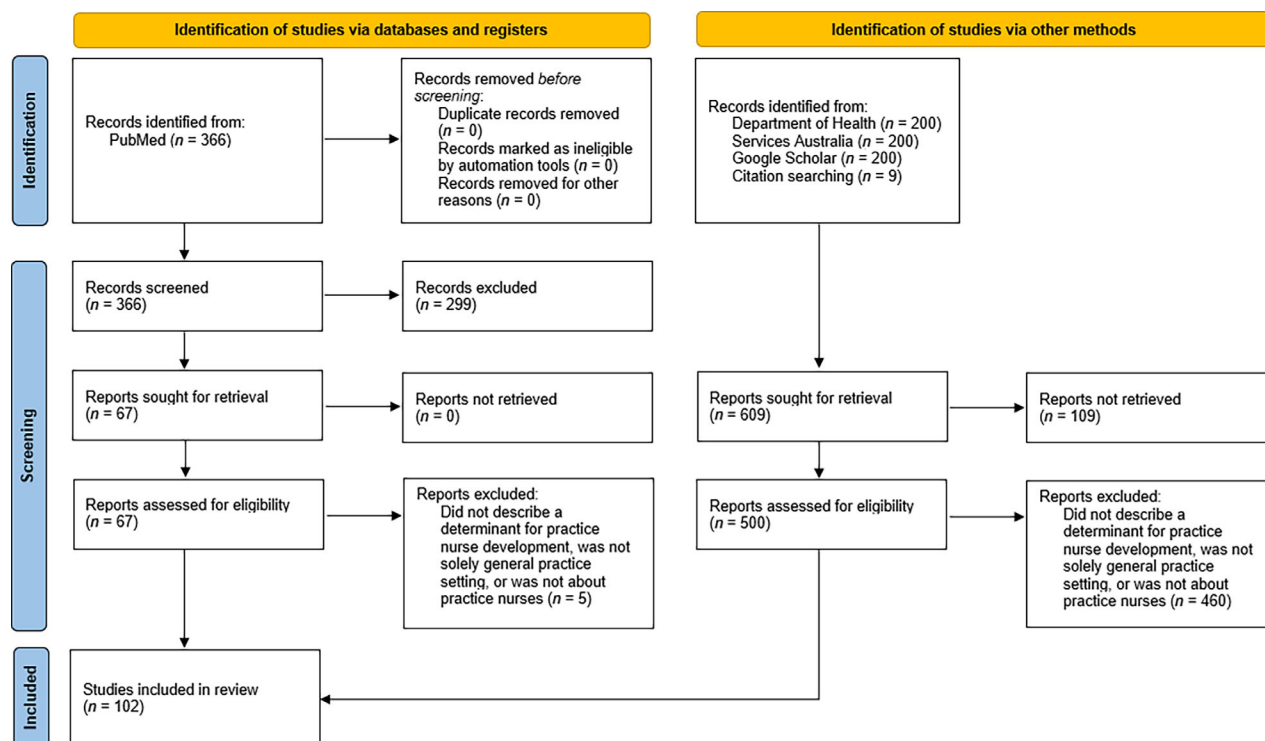


FIGURE 1 PRISMA flow diagram of study selection for a scoping review of Australian practice nurse role development.

due to the large search results from Google Scholar (>40 000), only the first 100 results were screened.<sup>23</sup>

Grey literature, including government documentation, policies and standards, was identified either through the Google Scholar search or handsearching of included studies which identified key sources for practice nurse role development. Further searches were conducted directly using the search tools on Australian Government websites: Department of Health and Services Australia.

Peer-reviewed literature was exported and screened using Endnote,<sup>25</sup> and grey literature were screened by taking 'screenshots' of sites and screened in Microsoft Word. After duplicates were removed, one reviewer screened the titles and abstracts recovered in the search. The full text of reports that were not excluded at title and abstract stage were then scrutinised against the inclusion criteria independently by two researchers. To be included, papers had to be reported as a full paper (any peer-reviewed study, Government, or professional body report, commentary, or opinion piece) focused on development and evolution of practice nursing in Australia. Following full text screening, further searching of the reference lists of included studies was undertaken to identify additional key literature. No language or time restrictions were set. Studies were excluded if they were reported in abstract format only, focused solely on nurse

practitioners, and/or reported on practice nurses in a country other than Australia.

Data on the development and evolution of practice nursing was extracted from included studies into Microsoft Word by one reviewer, based on interest and transferability to dietetics and the private practice context. Extracted data was summarised narratively under the relevant categories, and further identified as a driver (directly influencing role development) or contributor (indirectly influencing role development). In line with scoping review methodology, quality appraisal of papers was not conducted as the aim was to provide an overview of the current literature on practice nurse development, and not to appraise the quality.

### 3 | RESULTS

Following de-duplication, a total of 857 results were identified in the search (Figure 1, PRISMA flow diagram).<sup>26</sup> At title and abstract stage, 682 papers were excluded, leaving 175 for full text review, during which a further 82 were excluded. The reference lists of the remaining 93 articles including grey literature and peer-reviewed studies were scrutinised by title to identify an additional nine articles including three peer-reviewed research

TABLE 2 Included peer-reviewed and grey literature reporting on the practice nurse role development in Australian general practice

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
<i>Peer-reviewed Literature (n = 82)</i>						
Australia's first transition to professional practice in primary care program for graduate registered nurses: A pilot study	Aggar et al. <sup>27</sup>	Mixed methods; longitudinal exploratory study Questionnaire and interviews pilot study	RNs (graduate <i>n</i> = 4, preceptors <i>n</i> = 7) Data collected 3-, 6- and 12-months post commencement of transition program. Aim: To determine whether a transition to professional practice program led to competent practice nurse graduates	<ul style="list-style-type: none"> <li>With adequate support graduate nurses can transition into PN roles as a positive nursing workforce development strategy</li> <li>Nurses were deemed as competent post-program</li> <li>Relationships between preceptor and graduate nurse were positive and key to graduate nurse competency/development</li> <li>Increasing prevalence of chronic illness and multimorbidity = implications for nursing workforce development</li> </ul>	Career and education opportunities (individual, community and local needs)	Professional placements in private and general practice for student dietitians may assist with transition into this area of practice post-graduation.
Cross-sectional survey of older patients' views regarding multidisciplinary care for chronic conditions in general practice	Bonney et al. <sup>28</sup>	Quantitative; cross-sectional study	272 older patients (>60 years) Questionnaires on acceptance of other health professionals in CDM care. Aim: To explore conditions under which older patients would accept having health professional other than their GP (such as PN) involved in their CDM care	<ul style="list-style-type: none"> <li>Some scepticism by participants</li> <li>More accepting of PN than other professionals</li> <li>However, felt better when GP was also involved in 'shared continuity'</li> </ul>	Patient perspectives of PNs (individual, community and local needs)	Exploration of patient views on the inclusion of the dietitian in multidisciplinary care for chronic conditions is needed.
A qualitative study of patient experiences of Type 2 Diabetes care delivered comparatively by General Practice Nurses and Medical Practitioners	Boyle et al. <sup>29</sup>	Qualitative; interviews, interpretive study	10 patients from a single GP practice Semi-structured interviews Aim: To explore patient experiences of T2DM care delivered by PNs in collaboration with their GP.	<ul style="list-style-type: none"> <li>Patients saw PN consultation as a clinical assessment for their GP</li> <li>Expressed ongoing challenges living with T2DM and need for additional information and advice</li> <li>Patients recommended this general practice to their friends and family with T2DM as they saw benefit in the care received</li> </ul>	Patient perspectives of PNs	Exploration of patient views on inclusion of the dietitian in T2DM management compared with other professionals is needed

(Continues)

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Ascendancy with a capital A: The practice nurse and short general practice consultations.	Britt et al. <sup>30</sup>	Other; commentary report	Analysis of Medicare item claims for PNs and short (<15 min) general practice consultations.	<ul style="list-style-type: none"> <li>• Patient expectations of PN care is variable and depends on their condition and their experiences with a PN → related to the <i>ad hoc</i> nature of PN development</li> <li>• Increased use of PNs in short level 'A' consultations where 2/3 s of procedures, such as dressings, excisions and incisions, within these consultations were conducted by the PN</li> <li>• Delegation of 'straight-forward' tasks to the PN enabled GPs to see more complex patients</li> <li>• Available funds through Medicare rebates for GP activities taken on by PN</li> </ul>	Cost-benefit of PN role (government funding)	Delegation of nutrition-related education and interventions can be conducted by dietitian through use of allied health item numbers.
Cervical screening in general practice— strategies for improving participation	Byrnes et al. <sup>31</sup>	Quantitative; audit	Electronic record audit on pap smear occurrence in 1500 females (18–69 y). Aim: To assess the effect on cervical screening rates in one small general practice	<ul style="list-style-type: none"> <li>• Patients can choose to have pap smear done by PN</li> <li>• PNs conducting pap smears can reduce workload of GPs</li> </ul>	Individual, community and local needs	Re-allocation of nutrition-related interventions to dietitians could reduce GP workload and enhance care
New graduate employment in general practice: Perceptions of final-year nursing students	Calma et al. 2021 <sup>32</sup>	Qualitative; interviews, descriptive study	16 final-year nursing students from 5 universities Interviews Aim: To investigate perceptions of final-year nursing students regarding general practice nursing as a new graduate career path.	<ul style="list-style-type: none"> <li>• Four themes: (1) General practice is not a priority career path (2) Opportunities for skills development and consolidation (3) Perceptions of employment conditions (4) Transition support is limited</li> </ul>	Career and education opportunities	Support of student dietitians in private and general practice settings could enhance their experiences when entering the workplace.
Australian practice nurses' perceptions of their role and competency to provide nutrition care to patients living with chronic disease	Cass et al. <sup>33</sup>	Qualitative; interviews	20 PNs Interviews Aim: To investigate PNs' perceptions of their role and competency to provide nutrition care to patients living with	<ul style="list-style-type: none"> <li>• Four themes: (1) Role of PNs and nutrition care (2) Professional boundaries of PNs for nutrition care provision (3) Competencies required for</li> </ul>	Individual, community and local needs	Opportunity for dietitians to fulfil nutrition education and care needs.

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Mental health nurses employed in Australian general practice: Dimensions of time and space	Chamberlain-Salaun et al. <sup>34</sup>	Qualitative; interviews, descriptive exploratory study	chronic disease in Australia.  7 GPs and 2 MHPNs Semi-structured interviews Aim: To explore how people living with mental illness are supported in Australian general practice.	<ul style="list-style-type: none"> <li>effective nutrition care (4) Nutrition education of PNs</li> <li>Lack of accessibility and availability of nutrition education for PNs</li> <li>MHPNs are vital in the care and support of people with mental illness</li> <li>2 key themes: Dimensions of time and space</li> <li>MHPNs were more flexible in time and space compared with GPs who conducted MHCP</li> <li>Consult spaces that were free from stigma, such as consults conducted in their homes, were more open and comfortable to patients</li> </ul>	Government funding (individual, community and local needs)	Dietitians with mental health training and education are needed to support the growing cases of mental illness.
A tool to evaluate patients' experiences of nursing care in Australian general practice: Development of the Patient Enablement and Satisfaction Survey (PESS)	Desborough et al. <sup>35</sup>	Mixed methods; report of survey development and focus groups and interviews to refine survey	General practices PESS survey development Validity was obtained through focus groups and interviews with patients and PNs Reliability was gained through test-retest study Aim: To develop a survey to evaluate patient satisfaction and enablement of PN care	<ul style="list-style-type: none"> <li>Comprised of 20 questions (15 patient satisfaction, 5 enablement)</li> <li>Validity of survey: Two focus groups with four and then six patients. Focus groups 30–60 min. In-depth individual interviews were conducted with 4 patients. Patients described thought processes in answering draft survey questions</li> </ul>	Patient perspectives of PNs	A tool to evaluate patients' experiences of care by a dietitian could be developed.
Impact of nursing care in Australian general practice on the quality of care: A pilot of the Patient Enablement and Satisfaction Survey (PESS)	Desborough et al. <sup>36</sup>	Quantitative; pilot of PESS	Two general practices Pilot of PESS Aim: To evaluate two aspects of quality of care in PN in general practice—patients were attending nurse-led general and chronic-disease clinics	<ul style="list-style-type: none"> <li>Comparison of CDM patient's vs. 'general clinic' patients = CDM patient had higher enablement scores with PN</li> <li>All patients reported satisfaction with PN care</li> <li>Patients who attended the clinic for influenza vaccinations were least satisfied—related to the</li> </ul>	Patient perspectives of PNs	As above

(Continues)



TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
The impact of general practice nursing care on patient satisfaction and enablement in Australia: A mixed methods study	Desborough et al. <sup>37</sup>	Mixed methods; cross-sectional survey and interviews	678 patients were surveyed (42% response rate). Examined a cross-section of patients from PESS survey 48 interviews with 16 PNs, 23 patients and 9 practice managers 21 general practices Aim: To explore patient satisfaction and enablement with general practices in the ACT	<p>out-of-pocket expense of this clinic compared with the no charge of the CDM clinic</p> <ul style="list-style-type: none"> <li>Longer PN consults = greater patient satisfaction</li> <li>Consults with a well-known PN by patient = greater patient satisfaction</li> <li>Expanded roles of PNs = higher quality patient outcomes achieved</li> </ul>	Patient perspectives of PNs	Dietitians could also provide more time to patients in consultations than GPs, and encourage patient to return for continuity.
Developing a positive patient experience with nurses in general practice: An integrated model of patient satisfaction and enablement	Desborough et al. <sup>38</sup>	Mixed methods; cross-sectional interviews	Study used data from Desborough et al. <sup>37</sup> Aim: To develop a conceptual model that provides a comprehensive understanding of the structures and processes underpinning patient enablement and satisfaction in general practice nurse consultations	<ul style="list-style-type: none"> <li>Patient and PN therapeutic relationship is at the core of the integrated model and includes 'Triggering a Partnership' and 'Tailoring care'</li> <li>Builds on the results from the three previous Desborough publications<sup>35,36,37</sup></li> <li>Authors recommend the use of the model in education and training for PNs</li> </ul>	Patient perspectives of PNs	Dietitians should also focus on building strong therapeutic relationships with patients.
A nurse led model of chronic disease care—An interim report	Eley et al. <sup>39</sup>	Qualitative; interviews	Three general practices (1 urban and 1 regional Queensland and 1 rural Victorian). 8 GPs, 3 practice managers and 5 PNs Interviews— included questions focusing on the collaborative model of care of a project <sup>39</sup> Aim: To explore the perceptions of practice	<ul style="list-style-type: none"> <li>Practice staff expressed that patient self-responsibility was a key part of the new chronic disease management model</li> <li>Mixed patient responses—some had a keen involvement in this newer model of care, others were content with the usual number of reviews and lacked interest in attending the clinic more often</li> </ul>	Individual, community and local needs	Potential research area to look into where dietitian is the lead in chronic disease care.

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Outcomes and opportunities: A nurse-led model of chronic disease management in Australian general practice	Eley et al. <sup>40</sup>	Mixed methods; cross-sectional questionnaire and interviews	<p>staff on the impact of a nurse-led model of care for chronic conditions in general practice</p> <p>Randomisation of adults with T2DM, HTN or IHD into PN-led (<i>n</i> = 136) or usual GP-led care (<i>n</i> = 135). Self-reported QoL and perceptions of the new model of care—patients and GP. Aim: To evaluate a nurse-led model of chronic disease management</p>	<ul style="list-style-type: none"> <li>Both groups experienced a decrease in QoL</li> <li>PN-led model was acceptable and feasible by GPs and patients</li> <li>GPs expressed that the PN-led model freed up some of their time</li> <li>PNs were also able to spend more time counselling patients</li> <li>Patient interviews identified that PNs are drivers in patient self-management and confidence</li> </ul>	Individual, community and local needs (patient perspectives of PNs and GP perspectives of PNs)	Dietitians play a large role in chronic disease prevention and management.
A self-reported survey on the confidence levels and motivation of New South Wales practice nurses on conducting advance-care planning (ACP) initiatives in the general-practice setting	Fan and Rhee <sup>41</sup>	Quantitative; cross-sectional online survey	147 completed surveys Aim: To understand the beliefs, attitudes, perceptions, confidence, training and educational needs of NSW PNs with regards to involvement in ACP.	<ul style="list-style-type: none"> <li>PNs overall positive about their ACP role</li> <li>Relationship with the patient improved PNs' confidence with ACP</li> <li>ACP is key for when individuals are unable to decide on medical care</li> <li>GPs usually conduct ACP—but uptake is limited, thus PNs can fill this gap</li> </ul>	Individual, community and local needs (career and education opportunities)	Potential gap in care that dietitians could help to fill.
Building chronic disease management capacity in General Practice: The South Australian GP Plus Practice Nurse Initiative	Fuller et al. <sup>42</sup>	Qualitative; secondary analysis of focus group reports	<p>South Australia GP Plus Practice Nurse Initiative delivered 2007–2010 to recruit and train 157 PNs in 147 general practices in Adelaide.</p> <p>Secondary analysis of qualitative data from the Initiative evaluation report. Aim: To establish what is needed to support the</p>	<ul style="list-style-type: none"> <li>Newer PNs to general practice faced greater challenges in their new role</li> <li>The initiative offered support and development of the new roles</li> <li>Just over 50% of practices employed the PN beyond the initiative program.</li> <li>The initiative funded the employment of the PN during the program</li> </ul>	Career and education opportunities (government funding)	Dietitians could assist in building chronic disease management capacity in general practice and utilise the WIP

(Continues)

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Mentoring for nurses in general practice: An Australian study	Gibson and Heartfield <sup>43</sup>	Qualitative; focus groups and case studies	development of the CDM role of PNs 121 Divisions of General Practice, used to sample key reps from urban, rural and remote locations to participate ( $n = 201$ ) in focus groups and case studies Aim: Several aims around mentoring of PNs, including issues, approaches and transferability.	<ul style="list-style-type: none"> <li>Seven Core Areas: (1) 'role confusion and the diversity of practice nursing', (2) 'the lack of a defined career pathway for practice nurses', (3) 'professional isolation', (4) 'the need to general practitioner support', (5) 'expectations of mentoring', (6) 'resourcing and infrastructure', (7) 'role, skills and qualities of mentors'</li> </ul>	Career and education opportunities (GP perspectives of PNs and government funding)	Mentoring and/or supervision for dietitians in private practice where support is scarce.
The provision of dementia care in general practice: Practice nurse perceptions of their role	Gibson et al. <sup>44</sup>	Qualitative; focus groups	36 PNs 8 focus groups Aim: To identify the role of primary care nurse in dementia care provision.	<ul style="list-style-type: none"> <li>Themes: <i>sub-themes</i></li> <li>Theme 1: Personal attributes of the PN: <i>Knowing the person, Overcoming stigma</i></li> <li>Theme 2: Professional attributes of the PN role: <i>Providing holistic care, Knowing what to do</i></li> <li>Theme 3: The context of practice: <i>Team culture, Working in the system</i></li> </ul>	Individual, community and local needs (government funding)	Further exploration of role of dietitians in dementia care is warranted.
A transition program to primary health care for new graduate nurses: A strategy towards building a sustainable primary health care nurse workforce?	Gordon et al. <sup>45</sup>	Other; debate article	Discusses the PN workforce dilemma currently facing Australian policy makers and presents the potential merits of a New Graduate Transition to Primary Health Care Program.	<ul style="list-style-type: none"> <li>Models the transition program off the current acute care programs, and the primary health care programs seen in other countries such as Scotland, NZ and the US</li> <li>Paper proposes program design, implementation and evaluation</li> </ul>	Career and education opportunities	New graduate transition program for dietitians
Practice nurse involvement in primary care depression management: An observational cost-effectiveness analysis	Gray et al. <sup>46</sup>	Quantitative observational cost-effective analysis retrospective case study	Nine low ( $n = 6$ ) or high ( $n = 3$ ) PN-involved general practices with $n = 208$ patients. Depression case study as part of the Primary Care	<ul style="list-style-type: none"> <li>Assignment of low or high model of care based on level of nurse involvement</li> <li>High level model of care was more expensive</li> </ul>	Cost-benefit of PNs	Mental health training and education for dietitians

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
<p>A risk-adjusted economic evaluation of alternative models of involvement of practice nurses in management of type 2 diabetes.</p>	<p>Haji Ali Afzali et al.<sup>47</sup></p>	<p>Quantitative; cost-effective analysis</p>	<p>Services Improvement Project Aim: To assess the cost-effectiveness of alternative models of PN involvement in the management of diabetes.</p> <p>T2DM patients in low (<math>n = 108</math>) or high (<math>n = 231</math>) PN-involved GP practices. Aim: To determine the cost-effectiveness of alternative models of PN involvement in the management of T2DM within primary care.</p>	<ul style="list-style-type: none"> <li>No significant differences were seen in depression measured between models</li> <li>Any level (low or high) of nurse involvement improves depressive symptoms</li> <li>Focus on collaborative models of care where PNs are a key component: low-level vs. high-level of involvement of PNs</li> <li>Total cost difference between models of care was not statistically significant</li> <li>High-level of PN involvement model showed better health outcomes including larger reductions in HbA1c</li> </ul>	<p>Cost-benefit of PNs</p>	<p>Risk-adjusted economic evaluation of dietitians in T2DM management</p>
<p>Practice nurse involvement in general practice clinical care: Policy and funding issues needs resolution</p>	<p>Haji Ali Afzali et al.<sup>48</sup></p>	<p>Quantitative; cost-effective analysis</p>	<p>Draws on results from the Primary Care Services Improvement Project, a 3-year observational study Aim: To discuss limitations of current funding and policy of enhancing PN role in chronic disease management</p>	<ul style="list-style-type: none"> <li>Highlights need for collaborative care models</li> <li>Growing body of evidence that PN involvement in chronic disease management is cost-effective</li> <li>Government funding aimed to increase PN numbers and expand their role</li> <li>Highlights Government's recognition of PNs as valuable</li> </ul>	<p>Government funding (cost-benefit of PNs)</p>	<p>Financial incentives to dietitians for professional development in chronic disease management in primary care</p>
<p>Nursing in Australian general practice: Directions and perspectives</p>	<p>Halcomb et al.<sup>11</sup></p>	<p>Narrative review</p>	<p>A non-systematic literature review Aim: To identify barriers and facilitators of the implementation of PN role in Australia and identify directions for future policy development and research</p>	<ul style="list-style-type: none"> <li>Limitations of reimbursement of services provided by PNs not directly supervised by GPs</li> <li>GPs are unclear about the economic and patient outcome benefits of employing a PN</li> <li>PNs feel isolated</li> <li>Varying levels of GP support for further education and training</li> <li>Patients view PNs overall as amicable, ethical and</li> </ul>	<p>Government funding (career and education opportunities, GP perspectives of PNs and patient perspectives of PNs)</p>	<p>Dietitians Australia to assist dietitians working in private and general practice to clearly define and disseminate their role and tailor to local needs</p>

(Continues)

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Exploring the development of Australian general practice nursing: Where we have come from and where to from here?	Halcomb et al. <sup>49</sup>	Qualitative; content analysis	150 free papers from 2006 and 2007 RCNA National General Practice Nurses conference. Content Analysis of Conference Proceedings Aim: To explore and document the evolution of scholarship and professional development in Australian general practice nursing.	<p>trustworthy, that PNs enhance GP practice, not substitute it</p> <ul style="list-style-type: none"> <li>• Growth of PNs has been influenced by change in health care needs, shortage of GPs in rural areas and increasing workloads of GPs country wide</li> <li>• PNs roles are mostly developed from the individual PN dependent on factors such as local needs, individual practice structures and demands, and their own skills and confidence</li> <li>• PN roles have shifted from taking over tasks from GPs to be more autonomous</li> </ul>	Career and education opportunities (individual, community and local needs)	Dietitians Australia plays a key role in supporting evidence-based practice, professional development and professional practice standards for dietitians working in primary care and general practices
Nurses in Australian general practice: Implications for chronic disease management	Halcomb et al. <sup>50</sup>	Quantitative; descriptive national postal survey (part of a mixed methods study)	284 PNs completed a postal survey Three sections: (1) participant demographics, employment and workplace characteristics, (2) barriers and facilitators to role expansion and issues in practice, (3) clinical role. Aim: To describe the demographic and employment	<ul style="list-style-type: none"> <li>• All participants were female, 99% were RNs</li> <li>• Three levels of clinical skills (I: core clinical skills, II: advanced practice skills, III: expanded nursing skills)</li> <li>• ~84% respondents undertook core clinical skills and felt these tasks were appropriate</li> <li>• ~1/5 of respondents were conducting level II advanced clinical skills, that is, antenatal/postnatal checks, ordering</li> </ul>	Government funding (GP perspectives of PNs)	Need for identification of the barriers to practice for dietitians in the primary care and general practice setting

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Professional development needs of general practice nurses	Halcomb et al. <sup>51</sup>	Quantitative; descriptive survey	231 PNs Survey was developed using 4 competency standards for PNs: Professional practice, provision of clinical care, management of clinical care systems and collaborative practice. Aim: To identify the educational and professional development needs of NSW PNs	<ul style="list-style-type: none"> <li>diagnostic testing, infant development assessments, etc.</li> <li>~87% of respondents were conducting level III expanded nursing skills which included chronic disease management, counselling and prevention education</li> <li>Barriers to PN role expansion were legal and funding issues, and GP attitudes</li> <li>Three top priority education topics expressed by PNs: Wound care, diabetes and immunisation.</li> <li>1/5 patients expressed interest in attending a PN orientation program.</li> <li>Just &gt;50% of PNs expressed a desire to network with allied health services in general practice</li> <li>PNs expressed wanting education and training to be delivered during the work week.</li> </ul>	Career and education opportunities	Exploration of the professional development needs of private primary care and general practice dietitians
Uptake of Medicare chronic disease items in Australia by general practice nurses and Aboriginal health workers	Halcomb et al. <sup>52</sup>	Quantitative; descriptive analysis	MBS Item 10997 data was extracted from July 2007 to December 2009 from Medicare Statistics Australia.	<ul style="list-style-type: none"> <li>376 201 claims of the 10997-item number in 2 years since introduction</li> <li>Increase in claims related to the increased number of eligible practitioners to claim the item number.</li> <li>Expansion of item numbers to be claimed by PNs was linked with a growth in chronic disease services performed by PNs—shaping the PN role</li> </ul>	Government funding	Evaluation of cost-effectiveness and patient outcomes of dietitian interventions in chronic disease is needed
Practice nurses' experiences of mentoring	Halcomb et al. <sup>53</sup>	Qualitative; interviews	12 PNs who had supervised general practice nursing students on placement.	<ul style="list-style-type: none"> <li>Themes: (1) Promoting practice nursing: We really need to get students in, (2) Mentoring future</li> </ul>	Career and education opportunities	General practice/private practice placements for student dietitians could

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TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
undergraduate nursing students in Australian general practice			Structured telephone interviews Aim: To explore the experiences of PNs mentoring undergraduate students on clinical placements within the general practice setting.	<ul style="list-style-type: none"> <li>co-workers: Patients and reassurance, and (3) Reciprocity in learning: It is a bit of a two-way street</li> <li>Mutual benefit to PN and nursing student was gained through general practice placement supervision</li> </ul>		provide mutual benefit to both dietitians and students—further research required
Culturally and linguistically diverse general practitioners' utilisation of practice nurses	Halcomb et al. <sup>54</sup>	Qualitative; descriptive interviews	48 Culturally and linguistically diverse GPs working as sole practitioners. Semi-structured interviews Aim: To explore diverse GPs' perceptions of the PN role and identify barriers and facilitators to employing PNs in their practice.	<ul style="list-style-type: none"> <li>73% of GPs agreed that PNs could perform vital sign measurements or spirometry</li> <li>Key barriers to employing a PN—lack of space/equipment, legal implications, lack of a specific job description, and language issues</li> </ul>	GP perspectives of PNs	Dietitians should be aware that cultural and language barriers may be experienced when working with GPs from diverse backgrounds. Opportunities for dietitians with cultural and/or linguistic diversity may exist with GPs from similar backgrounds.
The evolution of nursing in Australian general practice: A comparative analysis of workforce surveys 10 years on	Halcomb et al. <sup>16</sup>	Quantitative; descriptive survey	284 nurses (1 male) employed in general practice completed first survey (2003–2004). 235 nurses (8 males) completed second survey (2009–2010). Not the same cohort. Rural, inner city, and remote practices included. Aim: To describe the current demographic and employment characteristics of PNs, and explore trends in changes to their role over time.	<ul style="list-style-type: none"> <li>Range of roles and tasks surveyed including vital signs measurement, physical assessment, counselling, case-management/co-ordination</li> <li>More participants in second survey conducted more complex nursing roles (follow-up of pathology results, physical assessment, and disease-specific education)</li> <li>Decreased optimism of participants for the future of PN role</li> <li>PNs want further training and education</li> <li>Progress in achieving true role development is slow</li> </ul>	Career and education opportunities	Focus on education and training of general and private practice dietitians

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Process evaluation of a practice nurse-led smoking cessation trial in Australian general practice: Views of general practitioners and practice nurses	Halcomb et al. <sup>55</sup>	Qualitative; interviews, process evaluation of 'QUIT with PN' arm of the 'Quit in General Practice' trial.	GPs ( $n = 22$ ) and PNs ( $n = 15$ ) involved in 'QUIT with PN' Semi-structured telephone interviews Aim: To perform a process evaluation of a PN-led smoking cessation intervention being tested in a randomised controlled trial in Australian general practice.	<ul style="list-style-type: none"> <li>• Overall positive view of QUIT with PN intervention</li> <li>• Adequate training of PNs = increased confidence of PNs with smoking cessation counselling</li> <li>• Collaboration between PN and GP through this intervention was not as strong or readily enacted as intended</li> </ul>	Individual, community and local needs (career and education opportunities and GP perspectives)	Dietitians should focus on seeing GPs and PNs as a collaborative team rather than solo practitioners
The development of professional practice standards for Australian general practice nurses	Halcomb et al. <sup>17</sup>	Mixed methods; concurrent survey, focus groups and consultation with experts.	Two online surveys (1st $n = 203$ , 2nd $n = 262$ ), and 14 focus groups (>200) of RN and EN PNs, and consultations with key experts. Aim: To explore the current role of general PNs and the scope of nursing practice to inform the development of national professional practice standards for Australian general PNs	<ul style="list-style-type: none"> <li>• 22 practice standards were developed</li> <li>• 4 domains of practice standards: (1) Professional Practice, (2) Nursing Care, (3) General Practice Environment and (4) Collaborative Practice</li> <li>• Standards for RNs and ENs were described separately</li> </ul>	PN practice standards	National professional practice standards are needed to support the growing dietetics primary care workforce
Exploring job satisfaction and turnover intentions among general practice nurses in an Australian Primary Health Network	Halcomb et al. <sup>56</sup>	Quantitative; descriptive survey	90 PNs Survey to measure PN demographics, employment status, role, workplace supports and performance appraisals.	<ul style="list-style-type: none"> <li>• Higher job satisfaction was related to: having a support person that is a nurse leader or manager, feeling they are using their training and knowledge to</li> </ul>	Career and education opportunities (individual, community and local needs)	Exploration of job satisfaction of general and private practice dietitians needed, and targeting areas that the workforce are least satisfied with

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TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Advanced training for primary care and general practice nurses: Enablers and outcomes of postgraduate education	Hallinan et al. <sup>57</sup>	Quantitative; descriptive cross-sectional questionnaire	Aim: To explore the job satisfaction and turnover intentions of general PNs and examine factors that influence job satisfaction and turnover intention. 100 PNs who are current and past students of postgraduate studies of primary care nursing. Aim: To understand enablers to participation in postgraduate education for PNs and to explore how postgraduate education has advanced their practice.	<ul style="list-style-type: none"> <li>full potential, not feeling isolated and having a mentor</li> <li>~45% felt they were unsure if they would remain working as a PN</li> <li>99% reported opportunities to expand scope of practice by completing postgraduate studies</li> <li>Respondents reported increased potential to provide more preventive and chronic disease services since postgraduate studies.</li> <li>Improved work satisfaction and practice autonomy by PNs</li> </ul>	Career and education opportunities	Increased access to postgraduate education opportunities for dietitians may benefit the growth of primary care dietetics practice
Mental Health Nurse Incentive Program: Facilitating physical health care for people with mental illness?	Happell et al. <sup>58</sup>	Quantitative; descriptive survey	38 PNs involved in the MHNIP participated in national survey Aim: To identify the views of PNs working within the MHNIP about their level of attention to the physical health of people with severe mental illness, and which aspects might foster collaborative and comprehensive care.	<ul style="list-style-type: none"> <li>MHNIP improved mental and physical healthcare</li> <li>Collaboration between PNs and GPs improved through the MHNIP</li> <li>Consumers of service had good access to physical and mental healthcare services</li> <li>Nurses could develop their physical clinical skills</li> </ul>	Government funding	Mental health training and education for dietitians
Review and analysis of the Mental Health Nurse Incentive Program	Happell et al. <sup>59</sup>	Systematic review	Included any literature on the MHNIP including government, professional organisation and peer reviewed. Aim: To review and synthesise research on the MHNIP to ascertain the benefits and limitations of this initiative for people	<ul style="list-style-type: none"> <li>17 reports of primary research data were included</li> <li>Program was successful in the objective of increased access to primary mental health care</li> <li>Positive feedback from stakeholders</li> <li>Room for improvement—inequities of access for people with mental illness</li> </ul>	Government funding (individual, community and local needs)	Increased consumer involvement in evaluation of dietitian services would be of benefit

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Reflections on the history of general practice in Australia	Harris and Zwar <sup>19</sup>	Narrative review	<p>with mental illness, general practitioners, mental health nurses and the wider community.</p> <p>General Practice in Australia (including PNs) Aim: To examine the transformation of, and trends in, Australian general practice through the lens of medical generalism as it has developed over the past 100 years.</p>	<ul style="list-style-type: none"> <li>• 2002—introduction of PN funding initiatives (initially just item numbers but later developed into the PNIP)</li> <li>• 2004—specific Medicare item numbers covering provision of vaccinations and wound management by PNs</li> <li>• 2007—2/3 of practices employed PNs vs. 1/3 in 1990</li> <li>• 2012—Medicare rebates were mostly replaced by the PNIP—provides funding for employment of PNs in practices and seeks to encourage PN role expansion</li> </ul>	Government funding	Evaluations of general practice should include evaluating dietitians funded through Medicare item numbers

Potential roles for practice nurses in preventive care for young people—a qualitative study	Hart et al. <sup>60</sup>	Qualitative; interviews	<p>17 health and community professionals and 12 PNs interviewed.</p> <p>Aims: (1) to provide information on acceptable roles for PNs, barriers and facilitators to performing these roles, and whether existing programs for training GPs in adolescent healthcare could be adapted for training PNs.</p> <p>(2) to explore PNs' and key informants' views on a linkage role between the general practice and other youth services provided by nurses.</p>	<p>Four themes (sub-themes):</p> <ul style="list-style-type: none"> <li>• Perceived current health issues for young people,</li> <li>• Barriers to young people accessing healthcare (confidentiality, accessibility),</li> <li>• Facilitators and barriers to optimal care by the practice nurse ('youth friendly' environment, communication skills, confidence, training, remuneration),</li> <li>• The role of the practice nurse in the care of young people (linkage roles and outreach, health promotion)</li> </ul>	Individual, community and local needs	Dietitians could help engage younger populations in their healthcare
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Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Mentoring for nurses in general practice: National issues and challenges	Heartfield and Gibson <sup>61</sup>	Qualitative; focus groups	Key stakeholders and informants discussed issues surrounding the development of a mentoring framework for PNs via teleconference that was audiotaped, transcribed and subject to content and thematic analysis. Aim: To identify national issues impacting on the development of a mentoring framework for nurses in general practice in Australia.	Four key themes (issues): (1) Choice—about scope, purpose, context and mentoring roles (2) Relationships—including building new and existing. Mentoring occurred at different stages of work life. (3) Structures—including existing networks and structures. Promote formal programs and facilitate ethical practice and continual education. (4) Resources—a culture that values mentoring, and providing technology to support communication	Career and education opportunities	Mentoring framework could be applied to provide support and guidance of dietitians throughout their careers
Australian consumers' expanded nursing roles in general practice—choice not gatekeeping	Hegney et al. <sup>62</sup>	Qualitative; discussion paper reporting two qualitative studies focus groups	Study 1—170 patients from 6 Australian states and territories Study 2—106 patients from Queensland Focus groups Aim: To explore patient perspectives and expectations for PN roles in general practice	<ul style="list-style-type: none"> <li>PNs should not act as the gatekeeper for, or replace, the GP and vice versa</li> <li>PN's main role was to enhance GP's care</li> <li>Consumers want to be able to book with the PN directly, and not have to also see the GP</li> </ul>	Patient perspectives of PNs	Exploring patients' perspectives of dietitians and nutrition services is warranted
Practice nursing in rural Australia	Hegney <sup>63</sup>	Integrated review	All articles that provided commentary of the PN role in rural areas were included Aim: To explore the existing literature describing the work of practice nurses in rural Australia and the perceptions of consumers	<ul style="list-style-type: none"> <li>The more remote the location, the more likely that patients perceived the PN to be directly supervised by the doctor</li> <li>Rural PNs are more likely to have a specialist role within the practice, for example women's health, to work alone and, to undertake emergency and triage roles</li> <li>In small, rural communities the PN is well known therefore patients may have a stronger relationship with the PN and</li> </ul>	Patient perspectives of PNs (individual, community and local needs)	Dietitians may be more autonomous in rural and remote communities

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
An overview of the general practice nurse workforce in Australia, 2012–2015	Heywood and Laurence <sup>64</sup>	Quantitative; descriptive survey	Survey data from the 2012–2015 Australia Health Practitioner Registration Agency Aim: To describe the profile of the PN workforce and to explore how it differs from the non-GPN nursing workforce, and if this workforce is changing over time.	<ul style="list-style-type: none"> <li>higher levels of personalised care</li> <li>2015 = 12 746 PNs</li> <li>Compared with the overall nursing workforce, PNs are female (97%), older, and more likely to work part-time (65%), 80% are RNs</li> <li>Compared with 2012, 2015 PNs are younger</li> <li>Discussion highlights that nursing placements in general practice are recent and may be a beneficial strategy to recruiting PNs to the workforce</li> </ul>	Career and education opportunities	Recruitment and retention strategies should be considered to support needs of dietetics workforce
A training program for primary health care nurses on timely diagnosis and management of dementia in general practice: An evaluation study	Islam et al. <sup>65</sup>	Quantitative; descriptive survey	PNs ( <i>n</i> = 1290) surveyed at 3 time points during a training program about dementia diagnosis and management (pre, immediately post, and 6 months-post) Aim: To evaluate a training program for PNs by assessing change in current practice and future intention; and their knowledge, confidence and perceived importance about dementia diagnosis and management.	<ul style="list-style-type: none"> <li>Trained participants reported higher levels in all four aspects of dementia diagnosis and management outlined in the study aim</li> <li>An ageing population increases the demand for diagnosis and management of dementia, and nurses can lead in practice changes to improve dementia care, thus training in this area would be useful</li> </ul>	Individual, community and local needs (career and education opportunities)	Dietitians need to adapt practice to the health needs of their patients and communities
Farewell to the handmaiden? Profile of nurses in Australian general practice in 2007	Joyce and Piterman <sup>66</sup>	Quantitative; descriptive cross-sectional survey	104 PNs (RNs and ENs) responded to the survey. Aim: To describe the characteristics of nurses working in Australian general practice, including their backgrounds, working environments, tasks and duties.	<ul style="list-style-type: none"> <li>1/6 respondents had completed or were undertaking postgraduate studies in practice nursing</li> <li>Some nurses in the survey reported being paid as little as \$18/h</li> </ul>	Government funding (career and education opportunities)	Career frameworks for dietitians could improve dietetics practice in primary care

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TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
The work of nurses in Australian general practice: A national survey	Joyce and Piterman <sup>67</sup>	Quantitative; descriptive cross-sectional survey	108 nurses (RNs and ENs) responded, 104 returned completed surveys. Reports data from the Practice Nurse Work Survey Aim: To describe the nature of Australian practice nurses' clinical work, including patient's reasons for consultation, patient characteristics, and the actions taken by PNs.	<ul style="list-style-type: none"> <li>The catalyst to the increase in number of PNs and the tasks undertaken by PNs was the PIP</li> <li>Clear influence of funding and organisational arrangements</li> <li>Broad variety of tasks involved in PN role include immunisation, general check-ups, and chronic disease-related tasks and span across screening and preventative through to management and monitoring</li> <li>Replacement of the single incentive payment funding stream with the PNIP opened the PN workforce to broader and more flexible roles</li> </ul>	Government funding	Dietitians should focus on a team-based approach to health prevention and should consider training in general clinical tasks such as vaccinations and general health checks
Practice nurses in Australia: Current issues and future directions	Keleher et al. <sup>68</sup>	Other; professional opinion article	PNs in Australia	<ul style="list-style-type: none"> <li>2007, ~60% of practices employ PNs</li> <li>Lack of critical evidence looking at PN models or practice outcomes</li> <li>Some ambivalence to accept PN as a specialty and progression of the practice</li> <li>Government incentives to support expansion of PNs are not consistently based on strong evidence about effectiveness, outcomes, or efficiencies</li> <li>The NIGP initiative explicitly looks at the PNs tasks that directly relieve GPs work pressure (i.e., vaccines, wound management, etc.)</li> <li>CDMs and TCAs are collaborative practice models where the PN can practice autonomously from the GP and see a patient in their complete</li> </ul>	Government funding (career and education opportunities and individual, community and local needs)	Need to track the development of the dietetics workforce in this area Translational education program for dietitians wishing to move from hospital setting to private and general practice may be needed.

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
				<p>episode of care. However, aiding GPs is still part of their role</p> <ul style="list-style-type: none"> <li>Influences on the PN's role (in a specific medical centre) are the professional characteristics of the PN (RN or EN), the business orientation of the practice, and the physical and social health needs of the patients/local demographics</li> <li>Isolated PNs are at risk of stepping outside their scope of practice</li> <li>As most PNs are &gt;40 years and likely came from hospital backgrounds—a transitional education/training program may be required for effective transition into PN</li> </ul>		
Health promotion by primary care nurses in Australian general practice	Keleher and Parker <sup>69</sup>	Quantitative; descriptive survey	Survey of 54 PNs Aim: To investigate PN perceptions of current and potential roles in health promotion in general practice settings	<ul style="list-style-type: none"> <li>Health promotion occurred primarily in the downstream realm of disease prevention and health education</li> <li>Nurses aspired to take on roles in more upstream work of partnerships and collaboration</li> <li>Opportunities for health promotion were constrained by the general practice setting and education preparation</li> <li>PNs had positive outlook that health promotion will become common practice</li> </ul>	Career and education opportunities (individual, community and local needs)	Dietitians could support health promotion roles in their work in primary care
Nurse-led diabetes management in remote locations	Kirby et al. <sup>70</sup>	Mixed methods; interviews Cost-benefit analysis pilot study	21 patients from 1 town and 2 small townships in remote Australia. Chronic Disease Nurse (CDN) visited patients. Pre- and post-test patient interviews	<ul style="list-style-type: none"> <li>Significant reductions in HbA1c levels were seen post-CDN visits</li> <li>Patient interviews: Trusted the nurse and saw advice as applicable and relatable to their individual case</li> <li>Cost of CDN per 1% reduction in HbA1c level was \$242.95</li> </ul>	Individual, community and local needs (patient perspectives of PNs)	Support for dietitians working in remote settings; exploration of potential for dietitians to lead chronic disease care in remote areas; potential need for expanding scope

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TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
			Cost-benefit was also calculated Aim: To test the feasibility of providing a nurse-led annual cycle of diabetes care in a remote location and to explore the factors that patients indicated were important in diabetes self-management	<ul style="list-style-type: none"> <li>A CDN in remote settings benefits patients both physically and mentally</li> </ul>		of practice in rural areas (and training for same)
Practice nurse chlamydia testing in Australian general practice: A qualitative study of benefits, barriers and facilitators	Lorch et al. <sup>71</sup>	Qualitative; interviews	23 PNs from the Australian Chlamydia Control Effectiveness Pilot (ACCEPT) Semi-structured interviews thematically analysed using conventional content analysis Aim: To explore the benefits, barriers and facilitators of PN chlamydia testing	<p>Five domains:</p> <ul style="list-style-type: none"> <li>(1) PNs' current role in sexual health/chlamydia testing</li> <li>(2) Opinion around PN involvement in chlamydia testing</li> <li>(3) Benefits of PN involvement in chlamydia testing</li> <li>(4) Barriers to PN involvement in chlamydia testing</li> <li>(5) Facilitators to PN involvement in chlamydia testing</li> </ul>	Individual, community and local needs	New initiatives for dietitians to expand into more generic primary care tasks such as vaccinations and blood pressure measurement, point-of-care testing and need for qualitative exploration to identify dietitians' perspectives
Understanding the process of patient satisfaction with nurse-led chronic disease management in general practice	Mahomed et al. <sup>72</sup>	Qualitative; interviews	38 patients with T2DM, IHD or HTN (47 interviews) Grounded theory study Aim: To understand patient satisfaction in relation to care provided by PNs	<ul style="list-style-type: none"> <li>The theory 'Navigating Care' was grounded in the data</li> <li>Within that theory are themes (sub-themes): <ul style="list-style-type: none"> <li>(1) Determining Care Need (Self-monitoring and Monitoring by health professionals)</li> <li>(2) Forming a relationship (Time, Communication, Continuity)</li> <li>(3) Having confidence (Trusting the model of care, trusting the role of nurse, evaluating the PN)</li> </ul> </li> </ul>	Patient perspectives of PNs	Further development and dissemination of the dietitian's role in the care of T2DM, IHD and HTN is needed
An integrative review of facilitators and barriers influencing collaboration and teamwork between	McInnes et al. <sup>73</sup>	Integrative review	Review of 11 papers (9 qualitative and 2 mixed methods) Aim: To identify facilitators and barriers influencing	<ul style="list-style-type: none"> <li>Three themes: <ul style="list-style-type: none"> <li>(1) roles and responsibilities</li> <li>(2) respect, trust and communication</li> </ul> </li> </ul>	GP perspectives of PNs	Encourage dietitians to work closely with GPs and PNs to enhance collaborative practice

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
<p>general practitioners and nurses working in general practice</p>			<p>collaboration and teamwork between GPs and PNs.</p>	<p>(3) hierarchy, education and liability                      • PNs are involved in shared decision-making, goal setting and are equal to GPs</p>		
<p>Clinical placements in Australian general practice: (Part 1) the experiences of pre-registration nursing students</p>	<p>McInnes et al.<sup>74</sup></p>	<p>Qualitative; (from a larger mixed methods project); interviews</p>	<p>15 pre-registration nursing students, post-placement in general practice                      Thematic analysis                      Aim: To explore the experiences of pre-registration nurses' experiences on general practice placements.</p>	<p>• Four themes:                      (1) Knowledge of the practice nurse role: I had very limited understanding                      (2) Quality of the learning experience: It was a fantastic placement                      (3) Support, belonging and mutual respect: I really felt part of the team                      (4) Employment prospects: I would really, really love to go to a general practice but...</p>	<p>Career and education opportunities</p>	<p>Placement in general practice and private practice settings could be an opportunity for student dietitians to gain exposure to these practice settings</p>
<p>The influence of funding models on collaboration in Australian general practice</p>	<p>McInnes et al.<sup>75</sup></p>	<p>Qualitative; interviews</p>	<p>8 GPs and 14 PNs from 13 NSW general practices                      Aim: To explore ways that general practitioners and registered nurses work together to deliver clinical care</p>	<p>• This article reports on 1 of 3 themes (the other 2 are reported in the next 2 articles<sup>76,77</sup>). The influence of funding models on collaboration between GPs and GPRNs working in Australian general practices'                      • Four sub-themes:                      (1) The ethos of general practice—describing shared goals to sustain community health services                      (2) Diverging priorities—there are diverse perspectives to prioritising care and using resources                      (3) The potential for conflict—limitations to current funding models and pressure to nursing cost supplementation                      (4) Remuneration for expertise—issues regarding employer-employee</p>	<p>Government funding (GP perspectives of PNs)</p>	<p>Funding models can support collaboration between dietitians, GPs and PNs</p>

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TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
A qualitative study of collaboration in general practice: Understanding the general practice nurse's role	McInnes et al. <sup>76</sup>	Qualitative; interviews	As above <sup>75</sup>	<ul style="list-style-type: none"> <li>relationships and PN difficulty negotiating salaries</li> <li>Overarching theme</li> <li>'Understanding the general practice registered nurses role' with three sub-themes:               <ol style="list-style-type: none"> <li>(1) The importance of role clarity,</li> <li>(2) The GPRNs' perception of their own identity,</li> <li>(3) Appreciating the GPRNs' expertise</li> </ol> </li> </ul>	GP perspectives of PNs	Dietitians could provide professional development opportunities for GPs and PNs, to enhance collaborative practice
Understanding collaboration in general practice: A qualitative study	McInnes et al. <sup>77</sup>	Qualitative; interviews	As above <sup>75</sup>	<ul style="list-style-type: none"> <li>Overarching theme</li> <li>'Understanding collaboration in general practice', with 4 sub-themes:               <ol style="list-style-type: none"> <li>(1) Interpreting collaboration in general practice</li> <li>(2) Modes of communication</li> <li>(3) Facilitators to collaboration</li> <li>(4) Collaboration in practice</li> </ol> </li> <li>Collaboration and teamwork were described by participants as interchangeable</li> <li>More structured environments enabled more effective collaboration</li> </ul>	GP perspectives of PNs	Effective communication of the dietitian role to GPs and PNs can assist with collaborative practice
Experiences of registered nurses in a general practice-based new graduate program: A qualitative study	McInnes et al. <sup>78</sup>	Qualitative; interviews	<ul style="list-style-type: none"> <li>Nine new graduate RNs and their mentors</li> <li>Aim: To explore the experiences of new graduate registered nurses and their registered nurse mentors in a new graduate program within Australian general practice.</li> </ul>	<ul style="list-style-type: none"> <li>Four themes:               <ol style="list-style-type: none"> <li>(1) Preparation and Opportunities (pre-registration has influence on preparation for PN work)</li> <li>(2) Exceeding Expectations (patients' expectations were more than met by graduate nurses)</li> <li>(3) Program Challenges</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Career and education opportunities (patient perspectives of PNs and GP perspectives of PNs)</li> </ul>	<ul style="list-style-type: none"> <li>Mentoring specific for new graduate dietitians in private practice is warranted</li> </ul>

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Is it time to include the practice nurse in integrated primary health care?	McKernon et al. <sup>79</sup>	Quantitative; descriptive survey	Sample of GPs ( <i>n</i> = 321) in QLD and NSW participating in the DVA Preventive Care Trial. 52 GPs surveyed worked with a PN Aim: To investigate the current perceptions of Australian GPs' desire for, and impact of, shared care with PNs and other health professionals.	<p>(challenges were expressed by both mentors and mentees. One challenge was around GP's understanding of the program)</p> <p>(4) Future Career Intentions (individuals who started the program felt more prepared and interested in pursuing a career as a PN)</p> <ul style="list-style-type: none"> <li>Main role of PN was to do ECGs, dressings and triage</li> <li>70% of GPs identified cost as a barrier to employing a PN</li> <li>58% reported a lack of Medicare item number as a barrier to employing a PN</li> </ul>	GP perspectives of PNs (government funding)	Understanding GPs views of dietitians working in general practice could provide insight into how dietitians can become more integrated
ARNM: Promoting nursing in general practice	McLeod and Mills <sup>80</sup>	Other; professional opinion article	Discussion on general practice nursing	<ul style="list-style-type: none"> <li>Graduate nurses are underprepared for practice nursing</li> <li>Recommendation to explore general practice placement for student nurses with PNs, in particular rural and remote areas</li> </ul>	Career and education opportunities	General practice placements could improve entry to practice for dietitians
Expanding the role of practice nurses in Australia	Merrick et al. <sup>81</sup>	Narrative review	Aim: To examine the structural policy dimensions within which these changes are occurring and makes recommendations for future research on PNs	<ul style="list-style-type: none"> <li>Organisational structures, workforce supply, and Medicare funding impact the PN role</li> <li>Structural changes of general practices, such as the move towards 'super clinics', and increasing number of GPs in one clinic may shift the PN to have to work with larger GP and multidisciplinary teams</li> </ul>	Government funding	Dietitians' ability and preference to expand their role in general practice could be explored

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TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Nursing in general practice: Organisational possibilities for decision latitude, created skill, social support and identity derived from role	Merrick et al. <sup>82</sup>	Quantitative; descriptive survey	160 PNs (96.2% RN, 3.8% EN) NSW PNs surveyed using a 26-item online questionnaire. Aim: To describe the factors that support organisational opportunities for PN decision-making and skill development for nurses employed in general practice in NSW, Australia.	<ul style="list-style-type: none"> <li>Primary healthcare changes focus on PNs' ability to work autonomously and independently whilst remaining within scope of practice</li> <li>Support from organisational structures improved PN work satisfaction and skills</li> <li>Working collaboratively with GPs and other PNs led to higher influence of PNs over the workplace</li> <li>Part-time or casual contracts provided barriers to PNs' work satisfaction and contribution to the general practice</li> </ul>	Individual, community and local needs	Patient needs could shape dietetic practice; exploring organisational structures that support dietitians to work in the general practice setting is recommended.
Patient experiences of nurse-facilitated advance care planning in a general practice setting: A qualitative study	Miller et al. <sup>83</sup>	Qualitative; interviews	13 patients were interviewed Post-intervention of training and support to GPs and PNs on ACP Aim: To explore patients' perspectives of an ACP intervention designed to address common barriers to uptake in the general practice setting	<ul style="list-style-type: none"> <li>Six themes:               <ol style="list-style-type: none"> <li>working through ideas</li> <li>therapeutic relationship with nurses</li> <li>significance of making wishes known</li> <li>protecting family from burden</li> <li>autonomy in decision-making</li> <li>challenges of family communication</li> </ol> </li> <li>The patient-professional relationship, whether pre-existing or built within the ACP session, enabled the patient to trust and respect the PN to assist with ACP</li> </ul>	Patient perspectives of PNs (career and education opportunities)	Understanding patient views of dietitians could help shape their role, or provide insights to better communicate dietitian role to patients
The changing role of practice nurses in	Mills and Fitzgerald <sup>84</sup>	Qualitative; interviews	Three RNs working in general practice Interviews	<ul style="list-style-type: none"> <li>Three themes:               <ol style="list-style-type: none"> <li>nurses in general practice renegotiating their roles</li> </ol> </li> </ul>	GP perspectives of PNs (individual, community and local needs)	Research and advocacy should consider inclusion of GPs when considering

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Australia: An action research study			Aim: Originally aimed to report on the methods used to develop a new model of service delivery—'well women's clinics'. However, participants expressed key barriers to PN role expansion. The aim was changed to how participants addressed barriers to PN role expansion.	(2) identifying and negotiating gendered patterns of cervical screening (3) multidisciplinary collaboration and retention of practice nurses.		the ways that dietitians could be integrated in primary care
The place of knowledge and evidence in the context of Australian general practice nursing	Mills et al. <sup>85</sup>	Quantitative; descriptive survey	1800 Victorian PNs with a response from 590 surveys Aim: To ascertain the place of evidence and knowledge for practice in the context of Australian general practice nursing	<ul style="list-style-type: none"> <li>Key barrier: Limited time at work</li> <li>1/4 PNs felt that they lacked authority in the workplace to change practice</li> <li>In-services and conferences were the most frequent modes of professional development and education</li> </ul>	Career and education opportunities	There may be value in survey research specifically targeting private practice, primary care dietitians to inform professional development planning. Providing education and training within working hours to dietitians could be of value.
Collaborative care—the role of practice nurses	Morgan et al. <sup>86</sup>	Quantitative; feasibility study	332 patients Training workshops for PNs from 6 practices Aim: To evaluate training workshops to prepare PNs to use screening methods for co-morbid depression in T2DM and coronary heart disease.	<ul style="list-style-type: none"> <li>Patients could have both their physical and mental health needs addressed in their management</li> <li>PNs were identified to have significant improvement in knowledge and confidence in screening and assessing depression in their CDM assessments</li> </ul>	Individual, community and local needs (cost-benefit of PNs)	Dietitians could play a role in both physical and mental health care for primary care patients, with training.
The TrueBlue study: Is practice nurse-led collaborative care effective in the management of	Morgan et al. <sup>87</sup>	Quantitative; cluster-randomised intervention trial protocol	18 general practices (regional or remote) were randomly allocated to intervention or control.	<ul style="list-style-type: none"> <li>No findings—protocol</li> </ul>	Individual, community and local needs (cost-benefit of PNs)	Further exploration of whether dietitians could play a role in both physical and mental

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TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
depression for patients with heart disease or diabetes?			Aim: To compare the clinical outcomes of our model of practice nurse-led collaborative care with usual care for patients with depression and T2DM or CHD.			health care for patients is worthy of research.
General practice and the management of chronic conditions: Where to now?	Newland and Zwar <sup>88</sup>	Other; professional article	Aim: To provide a practical overview of the use of the Medicare CDM item numbers.	<ul style="list-style-type: none"> <li>• PN role in GPMP and TCA is clearer and more inclusive</li> <li>• PNs can assess the patient</li> <li>• Facilitates communication between patient, PN, GP and other health professions, such as allied health</li> <li>• Opportunity for PN to provide health education and counselling</li> </ul>	Government funding	Dietitians could better collaborate with PNs to enhance patient care; this could in time lead to expanded funding opportunities.
The advent of mental health nurses in Australian general practice	Olasoji and Maude <sup>89</sup>	Narrative review	Describes the background and implementation of the Mental Health Nursing Incentive Program (MHNIP)	<ul style="list-style-type: none"> <li>• Prior to the program, GPs needed and sought assistance to provide consumers with timely and accessible mental health care.</li> <li>• PNs could fulfil this need</li> </ul>	Government funding	Training and support could be provided to enhance dietitians' skills and knowledge of mental health.
Practice nursing in Australia: A review of education and career pathways	Parker et al. <sup>90</sup>	Systematic review	9 databases searched. Aim: To establish the available evidence on education models and career pathways with a view to enhancing recruitment and retention of practice nurses in primary care in Australia	<ul style="list-style-type: none"> <li>• Scope of practice for PNs complements that of the GP</li> <li>• High variation in tasks undertaken by PNs</li> <li>• No mandatory training beyond post-registration qualification</li> <li>• Post-graduate courses are available, uptake is low</li> <li>• Informal education is accessible through the practice – although not standardised across practices</li> <li>• Exposure to more acute care experiences and placements than primary care in nursing programs</li> </ul>	Career and education opportunities (government funding)	Need to explore the career and education needs of dietitians in primary care settings including opportunities for role expansion.

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Primary care nursing workforce in Australia	Parker et al. <sup>91</sup>	Other; professional opinion article	Describes influences on the nursing workforce in primary care and makes recommendations on areas to focus to improve the growing future workforce.	<ul style="list-style-type: none"> <li>• Comparison to UK and NZ—have more solid foundational education and career opportunities</li> <li>• MBS and PNIP have attempted to build the PN workforce. However, lacking in systematic and integrated methods and need further work</li> <li>• Recommends that funding should focus on complex tasks rather than individual item numbers</li> <li>• Education should focus on quality assurance roles rather than individual clinical tasks</li> <li>• Undergraduate criteria should include encouragement to consider PN career pathway</li> </ul>	Government funding (career and education opportunities)	A focus on enhancing the overall role of the dietitian in this setting could build the workforce in primary care.
The work, education and career pathways of nurses in Australian general practice	Parker et al. <sup>92</sup>	Quantitative; descriptive survey	58 PNs Aim: To examine the qualifications and educational preparation of PNs, their current enrolments in education programs, and their perspectives about post-registration education.	<ul style="list-style-type: none"> <li>• 94% had access to educational opportunities</li> <li>• Range of barriers to using opportunities of further education</li> <li>• Respondents felt less well regarded than their acute care colleagues</li> </ul>	Career and education opportunities	Dietitians Australia competency standards need to reflect the growth of dietitians in the primary care setting
General practice nursing education in Australia	Pascoe et al. <sup>93</sup>	Mixed methods; survey and focus groups	Three-part research project using qualitative and quantitative data collection methods. ‘RACGP/RCNA NiGP Project’ 1. Telephone survey of 222 PNs about current roles, qualifications and education experience and needs.	<ul style="list-style-type: none"> <li>• Over 1/3 PNs in the telephone survey have no further formal education (beyond their initial nursing education) to support their PN role</li> <li>• Those who received further formal education had done so in areas of midwifery, immunisation, and maternal and child health</li> </ul>	Career and education opportunities	Encouraging formal and non-formal education and professional development for dietitians

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TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Nursing's contribution to general practice: General practitioners' and practice nurses' views	Patterson et al. <sup>94</sup>	Quantitative; descriptive survey	<p>2. 14 focus groups (97 GPs and 183 PNs) to explore the two professions' views, experiences and perceptions about nursing and education in general practice</p> <p>3. Survey—to identify and map PNs formal and non-formal education opportunities</p> <p>Aim: To explore the education currently available for nursing in general practice.</p>	<ul style="list-style-type: none"> <li>~95% nurses had received non-formal education in the past 2 years</li> <li>GPs and PNs expressed that current education for PNs is limited, largely non-formal, delivered within the practice setting, focused on National Health Priority Areas, more appropriate for RNs over ENs, and focused more on clinical tasks</li> </ul>	GP perspectives of PNs	Understanding the view of GPs on working with dietitians may inform efforts to increase their contributions in primary care
Collaborative practice between registered nurses and medical practitioners in Australian general practice: Moving from rhetoric to reality	Patterson and McMurray <sup>95</sup>	Narrative review	<p>Aim: To present some of the known facilitative and hindering factors to collaborative practice and examine these in the context of the Australian general practice setting.</p>	<ul style="list-style-type: none"> <li>PNs understanding the dynamics of their relationships with GPs to move to more collaborative in nature</li> <li>Collaborative practice, although strongly encouraged, was seen as more of the exception than standard practice</li> <li>Highlights the PN role moving from 'working for' to 'working with' the GP</li> </ul>	GP perspectives of PNs	Collaborating with GPs and PNs could enhance dietetic practice in primary care.
Following the funding trail: Financing, nurses and teamwork in	Pearce et al. <sup>96</sup>	Mixed methods; multimethod study—interviews,	Interviews $n = 82$ —PNs (36), Doctors (24) and managers (22)	<ul style="list-style-type: none"> <li>Participants expressed concerns that Government funding and remuneration narrowed PN</li> </ul>	Government funding	Funding and initiatives to better support collaboration and

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Australian general practice		structured observation and case studies	Structured Observation = 51 h Aim: To examine the influence of funding structures on the role of the PN.	roles by limiting to tasks only directly funded. • 6% of fee-for-service funding was claimed by PN activities		teamwork in primary care should include dietitians
Clinical placements in general practice: Relationships between practice nurses and tertiary institutions	Peters et al. <sup>97</sup>	Qualitative; interviews	12 PNs Aim: To explore the perspectives of PNs who have experience in facilitating undergraduate clinical placements about the relationships between higher education institutions and nurses.	• Three themes (1) Appropriate preparation for placements: <i>They do not know what primary health really means</i> (2) Seeking greater consultation in the organisation of clinical placements: <i>They have got to do it one way for everyone</i> (3) Uncertainty and lack of support: <i>I had no contact with the university.</i>	Career and education opportunities	Universities and clinical supervisors need to be included in the implementation of primary care placements for student dietitians
Being strategic: Utilising consumer views to better promote an expanded role for nurses in Australian general practice	Price et al. <sup>98</sup>	Qualitative; discussion paper	Collation of two qualitative studies: • Consumer perceptions of nursing and nurses in general practice (Cheek et al., 2003) and; • Consumer perceptions of practice nursing (Hegney et al., 2004). Plus the General Practice Nursing in Australia report	• Emphasis on the use of consumer perspectives to guide what and how services could be improved in general practice • GPs and PNs tend to focus on professional and structural tensions	Patient perspectives of PNs	Consulting with consumers/ patients to identify potential areas for better services, and to identify where dietitians could contribute more in the primary care setting
Brief interventions: Good in theory but weak in practice	Roche and Freeman <sup>99</sup>	Narrative review	Aim: To examine the role of GPs vs. the role of the PN in brief interventions for	• PNs are more cost-effective in health interventions (10%–42% less) than their GP counterparts	Cost-benefit of PNs (individual, community and local needs)	Cost-effectiveness or cost-analyses could benefit dietitians providing services in primary care

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TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
How general practice nurses view their expanding role	Senior <sup>100</sup>	Quantitative; exploratory descriptive questionnaire	<p>alcohol and drug-related problems.</p> <p>22 PNs Questionnaire Aim: To explore the barriers and enablers that nurses working in general medical practice experience in relation to the Australian Government-driven expansion of their roles.</p>	<ul style="list-style-type: none"> <li>GP-led brief interventions for alcohol and drug-related problems have more barriers than PN-led interventions</li> <li>90% of respondents reported an expansion of their role since Government funding initiatives</li> <li>Most of the nurses were the key drivers in the expansion of their role at the practice level</li> <li>Key barriers to PN role expansion were lack of physical space in the practice and lack of time</li> </ul>	Government funding (GP perspectives of PNs)	Government funding can support the expansion and development of the dietitian role
Wound care costs in general practice: A cross-sectional study	Whitlock <sup>101</sup>	Quantitative; cross-sectional study	<p>18 general practices in QLD. Recorded data for every wound care episode within a 2-week period. Aim: To determine the cost of wound care in general practice by conducting an audit of current wound management practices.</p>	<ul style="list-style-type: none"> <li>PNs were seen as a cost-effective way of managing wound care and dressings</li> <li>General practices expressed that PNs had a reduced role in wound care since removal of Medicare item numbers for PNs conducting wound care</li> </ul>	Cost-benefit of PNs (government funding)	Wound care is a potential area for dietitians to contribute through nutrition education and support
Working relationships between practice nurses and general practitioners in Australia: A critical analysis	Willis et al. <sup>102</sup>	Qualitative; interviews	<p>9 PNs, 2 Nurse Practitioners and 10 GPs Aim: To identify the extent to which shared care existed in the workplace relationship, the form shared care took, and the factors which influenced it.</p>	<ul style="list-style-type: none"> <li>Shared care did not exist in GP practices where interviews were held</li> <li>GP and PNs had established constructive working relationships</li> <li>GPs expressed desire for PN role to broaden</li> <li>Medicare funding has enabled increase in PN taking on workloads originally done by the GP</li> <li>Nursing salaries are not growing linearly with the growth of required tasks</li> </ul>	GP perspectives of PNs (government funding)	Working relationships between GPs, PNs and dietitians should be encouraged and supported

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
A nurse-led model of chronic disease management in general practice: Patients' perspectives	Young et al. <sup>103</sup>	Qualitative; interviews	10 patients with chronic conditions Second phase of a mixed method study Aim: To explore patients' perceptions of a nurse-led collaborative model of care trialled in 3 GP practices.	<ul style="list-style-type: none"> <li>Patients felt empowered by PN when they perceived to have a strong relationship with the PN</li> <li>Three themes                             <ol style="list-style-type: none"> <li>(1) Time (No time with GP, More time with PN)</li> <li>(2) Ambience (More relaxed, Better atmosphere, Encouraging)</li> <li>(3) Dimensions of PN role (Therapeutic relationship, Educational role, Clinical knowledge)</li> </ol> </li> </ul>	Patient perspectives of PNs	
Quit in General Practice: A cluster randomised in-trial of enhanced in-practice support for smoking cessation	Zwar et al. <sup>104</sup>	Quantitative; cluster randomised trial	Aim: To compare the 'Quit with PN' intervention against referral to a telephone Quitline service and 'usual care' as part of a three-armed randomised control trial.	<ul style="list-style-type: none"> <li>Highlights the importance of trials such as smoking cessation to advancing the PN role</li> </ul>	Cost-Benefit of PNs	Identifying areas where dietitians can be a cost-benefit could help to support practice areas
<i>Grey Literature (n = 20)</i>						
Nursing in General Practice: A guide for the general practice team	Australian College of Nursing (ACN) <sup>105</sup>	Handbook	Developed to provide the general practice team with information on employing and supporting RNs and ENs in general practice. Update from the Nursing in General Practice Information Kit 2001 and 2005 version by Royal College of Nursing, Australia. Aim: To provide the general practice team with information on employing and supporting registered and enrolled nurses in general practice.	<ul style="list-style-type: none"> <li>Reflects the ongoing development of PN's roles</li> <li>Updates on the changes to available funding to support employment of PNs</li> <li>Gives an outline of the PNIP, MBS item numbers for PNs and other funding opportunities for practices</li> <li>Practice standards available are not required for PN registration but are a framework to support PN practice</li> <li>PN roles include provision and coordination of clinical care, management of clinical care systems, collaborative practice and professional practice</li> </ul>	Government funding; PN practice standards; career and education opportunities; individual, community and local needs	Developing a similar guide to outline the role of dietitians to the general practice team could be beneficial in role clarification and expansion

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Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Review of Australian Government Health Workforce Programs: 7.2 Nursing and Midwifery Retention	Australian Government Department of Health <sup>106</sup>	Government document	Describes government incentives and initiatives to improve workforce retention for nursing and midwifery careers	<ul style="list-style-type: none"> <li>PNs can specialise within general practice: Immunisation services, mental health services, diabetes nurse educators, and sexual and reproductive health care</li> <li>Nursing and Allied Health Scholarship and Support Scheme (NAHSS)—facilitates continued professional development of nurses (including PNs) and encourages pursuit of careers in settings of shortages</li> <li>Nursing and Allied Health Rural Locum Scheme (NAHRLS)—enables rural nurses to take short-term leave from rural jobs for professional development</li> <li>University Departments of Rural Health (UDRH)—provides postgraduate rural training services</li> <li>Rural Health Continuing Education (RHCE) provides access to professional training and support in rural and remote areas for health professionals, including nurses</li> <li>Also provides details on the NiGP and PNIP, and gives an example of the PNIP in action to improve the role of PNs</li> </ul>	Career and education opportunities (government funding)	Government funding and initiatives to enhance the dietitian role in addressing nation's health priority areas. A similar document for dietitians could lead to role expansion and more dietitians in areas of shortage.
Questions and Answers on the Chronic Disease Management (CDM) items	Australian Government Department of Health <sup>18</sup>	Government Website	Provides answers to frequently asked questions regarding Chronic Disease Management Items	<ul style="list-style-type: none"> <li>PNs can assist with CDM items, however the GP must review and confirm the plan and see the patient</li> <li>Item number 10997 can be claimed by practice for PN monitoring and supporting chronic disease patient</li> </ul>	Government funding	Raising dietitian awareness of the PN role in CDM, and making information readily available to dietitians about claiming CDM items
Questions and Answers on the Chronic Disease Management (CDM) items	Australian Government Department of Health <sup>18</sup>	Government Website	Outlines PN involvement and how practices can claim relevant items	<ul style="list-style-type: none"> <li>Item number 10997 can be claimed by practice for PN monitoring and supporting chronic disease patient</li> </ul>	Government funding	Raising dietitian awareness of the PN role in CDM, and making information readily available to dietitians about claiming CDM items

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Stronger Rural Health Strategy from the Corporate Plan 2018–2019	Australian Government Department of Health <sup>107</sup>	Government Document	Aims to build a sustainable, high quality health workforce that is distributed across the country according to community need, particularly in rural and remote areas	<ul style="list-style-type: none"> <li>PNs can be part of the minimum of three members of the TCA team</li> <li>For the health workforce as a whole, however nurses in primary care settings are mentioned</li> <li>Reviews and addresses the current education preparation for nurses</li> <li>Focuses on strengthening the role of PNs</li> <li>Expects growth of PNs across urban and rural areas</li> </ul>	Individual, community and local needs (government funding, career and education opportunities)	Need to support the development of rural dietitians; general health workforce documents often apply to dietitians but are less visible to the profession
Practice Nurse Incentive Program (PNIP)	Australian Government Department of Health <sup>20</sup>	Government website/document	Provides incentives to practices supporting, expand and enhance PNs in general practice through funding.	<ul style="list-style-type: none"> <li>Initiative in 2012</li> <li>Supports eligible practices, Aboriginal Medical Services and Aboriginal Community Controlled Health Services</li> <li>Offsets the cost of employing a PN, Aboriginal and Torres Strait Health Worker and Health Practitioner</li> </ul>	Government funding	Enhancing the knowledge and awareness of the WIP to dietitians and how they can access the program
COVID-19 National Health Plan—Primary Care Package—MBS telehealth Services and Increased Practice Incentive Payments	Australian Government Department of Health <sup>108</sup>	Government document	Outlines the new temporary Medicare Benefits Schedule (MBS) which includes PN item numbers that have moved to include telehealth during COVID-19.	<ul style="list-style-type: none"> <li>Effective until 30 September 2020</li> <li>Enables health professionals, including PNs to provide healthcare services to individuals through telehealth to reduce risk of infection</li> </ul>	Government funding (individual, community and local needs)	Ensuring dietetics practice aligns with the needs of communities they service; dietitians awareness of telehealth items
The role of health professionals and providers in the National Bowel Cancer Screening Program	Australian Government Department of Health <sup>109</sup>	Government website	Providers health professionals, including practice nurses, guidance on their roles in screening for bowel cancer.	<ul style="list-style-type: none"> <li>Outlines key roles the practice nurse will play in the screening</li> <li>Mainly around encouraging and supporting patient participation in the program</li> <li>Making appropriate referrals to GPs</li> </ul>	Individual, community and local needs (government funding)	Need to identify national health programs that dietitians can support and be integrated into, to support role expansion
Practice Nurse Incentive Program (PNIP) Guidelines	Australian Government Department of Health	Government document	Outlines the purpose of PNIP and how a practice	<ul style="list-style-type: none"> <li>PNIP is delivered on behalf of the Department of Health and DVA</li> </ul>	Government funding	Using the new WIP guidelines to enhance dietitian access to these

(Continues)

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Education Guide— Practice Nurse items	Human Services. Medicare <sup>110</sup>	can apply. Includes all financial incentives. The who, what, when, where, why and how of the PNIP.	<ul style="list-style-type: none"> <li>Supports expansion and enhancement of nurses employed by GPs</li> <li>Only in areas of 'greatest' need—rural and remote</li> <li>Activities include preventative health and education programs, quality chronic disease management and care coordination and supported self-management</li> <li>Must meet eligibility criteria including accreditation or registered for accreditation as per RACGP standards, must be eligible for PIP as well, employ GPs (full or part time), employ a PN or Aboriginal and Torres Strait Islander health worker and others.</li> <li>4 payments under PNIP: (1) incentive payments, (2) an accreditation assistance payment, (3) the DVA loading payments, (4) rural loading payments.</li> </ul>	<ul style="list-style-type: none"> <li>Applicable to work conducted by an RN or EN</li> <li>Item 10983—Telehealth patient-end clinical support</li> <li>Item 10984—Telehealth patient-end clinical support at residential aged care facility</li> <li>Item 10987—Health assessment follow-up</li> <li>Item 10997—Chronic disease monitoring and support</li> <li>Item 16400—Antenatal service</li> </ul>	Government funding	Identifying how dietitians can access and appropriately utilise MBS item numbers to fund services will expand the workforce
Education guide— Aboriginal and Torres Strait Islander health	Australian Government	Government Website	Outlines PN item numbers and how services provided by a PN on behalf of a medical practitioner are to be claimed	<ul style="list-style-type: none"> <li>Although PNs cannot directly claim the MBS item numbers, Aboriginal and Torres</li> </ul>	Government funding	Identifying how dietitians could better play a role in 'Closing the gap' and

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
assessments and follow up services	Services Australia <sup>112</sup>		Strait Islander health assessments to primary healthcare providers, including practice nurses	<ul style="list-style-type: none"> <li>they can assist in conducting the health assessments</li> <li>Health assessments including conducting examinations and assessments to determine health status and provide appropriate interventions, and follow up</li> </ul>		using strength-based approaches to First Nations health may lead to workforce growth
Workforce Incentive Program (WIP)—Practice Stream	Australian Government Services Australia <sup>113</sup>	Government website	Provides incentive to practices to support, expand and enhance the sustainability and quality of the health workforce, particularly for rural and remote medical practices by providing initiatives including funding	<ul style="list-style-type: none"> <li>Update of the PNIP</li> <li>Commenced 1 February 2020</li> <li>Provides an up-to-date rural definition to ensure initiatives and services are focusing on the implementation and sustainability of this program in rural and remote areas</li> </ul>	Government funding	Encouraging dietitians to utilise incentives to enhance rural and remote practice may expand the workforce
General Practice Nurse National Survey Report	Australian Medicare Local Alliance (AML Alliance) <sup>114</sup>	Survey report	In conjunction with Australian Primary Health Care Research Institute (APHCRI) and Australian National University (ANU). National PN Survey Report first conducted in 2003, then repeated in 2005, 2007 and 2009. Survey focused on PNs (n=2161) and practice managers who employ PNs (n=809). 20% of general practices (n = 1500) were randomly selected across all states and territories. 701 nurses responded and 275 practice managers responded.	<ul style="list-style-type: none"> <li>Increasing numbers of PNs in general practice over the years (2007 = 7728, 2009 = 8914, 2012 = 10 693)</li> <li>Most are part-time (working &lt;34 h/wk)</li> <li>63.5% of Australian general practices employ a PN. On average, in practices that employ PNs there are 2.7 PNs</li> <li>6.5% of general practices employ &gt; 5 PNs.</li> <li>GP:PNs = 2012 (1.78:1), 2009 (2.01:1) and 2007 (2.31:1)</li> <li>94.4% of practices were registered for the PIP</li> <li>89.1% of practices were registered for the PNIP</li> <li>Four key task areas were investigated: Preventative, Coordination, Clinical and Administration</li> </ul>	Government funding	Regular surveying of the dietetic workforce can help understand the development, and seek opportunities to enhance future practice, in primary care settings

(Continues)

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
Transition to Practice Program	Australian Primary Health Care Nurses Association (APNA) <sup>115</sup>	Non-government organisation website	Evidence-based framework to support the transition of nurses into primary healthcare for the first 12 months of practice.	<ul style="list-style-type: none"> <li>Education and training to support transition into primary health care</li> <li>Mentoring by an experienced practice nurse</li> <li>Evaluations of the program have shown nurses reporting an increase in confidence in their professional practice</li> </ul>	Career and education opportunities	Identify and address how dietitians could be supported in their transition to practice in primary care
ANF Competency Standards for nurses in general practice	Australian Nursing Federation <sup>116</sup>	Practice standards	Practice standards for RNs and ENs working in general practice. Standards are to be used in workplaces, education settings and other professional environments. Has since been revised into the National Practice Standards for Nurses in General Practice (below).	<ul style="list-style-type: none"> <li>Separation of competencies for RNs and ENs</li> <li>RNs have 15 competency standards, including: Professional and ethical practice, Professional practice, Collaborative practice</li> <li>ENs have 10 competency standards, including the same but fewer standards as RNs but at an EN level of scope of practice.</li> </ul>	PN practice standards	Developing practice and competency standards that are accessible and applicable to current and future practice for dietitians in primary care
National Practice Standards for Nurses in General Practice	Australian Nursing and Midwifery Federation <sup>10</sup>	Practice standards	Outlines the practice standards for RN and ENs working in general practice. Standards are addressed to PNs, general practice teams, and other key stakeholders.	<ul style="list-style-type: none"> <li>Four key domains: (1) Professional Practice, (2) Nursing Care, (3) General Practice Environment, (4) Collaborative Practice</li> <li>Separated ENs, RNs and RN Advanced Practice competencies</li> <li>Is a revision of the Australian Nursing Federation <i>Competency Standards for nurses in general practice</i></li> </ul>	PN practice standards	Need for a clear outline of dietitian roles in general practice so that existing competency standards can be applied in the primary care setting
Summary Data Report of the 2010–2011 Annual Survey of Divisions of General Practice	Carne et al. <sup>12</sup>	Report	Summary of the Divisions of General Practice activities in the 2010–11 Annual Survey of Divisions. Chapter 11, 'Practice Nurses'	<ul style="list-style-type: none"> <li>PN numbers are increasing compared with 2003–2004 (<math>n = 3255</math>), 2010–11 more than tripled (<math>n = 10\ 759</math>)</li> <li>Increase in professional development and education for PNs was seen from 2003–2004 to 2010–2011, mentoring and</li> </ul>	Career and education opportunities (government funding)	Mentoring and support of dietitians working in primary care is needed to develop the workforce

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
General Practice Nursing in Australia: Contemporary Professional and Practice Insights	Halcomb <sup>17</sup>	Book Chapter	Practice Nurses in Australia	<p>clinical support to support practice nurses declined</p> <ul style="list-style-type: none"> <li>Second to professional development/education/upskilling for PNs, EPC support/CDM items and Chronic Disease management are the activities where PNs are most engaged in general practice</li> </ul> <p>Provides an insight into the general practice nurse role and how it is influenced by the general practice environment including the GP</p> <ul style="list-style-type: none"> <li>Outlines how to prepare to work in the general practice setting as a nurse and how to seek out employment</li> </ul>	Government funding (career and education opportunities; GP perspectives of PNs)	Communicating the importance of the dietitian role in chronic disease management to other members of the team; focus on preparation of dietitians
Practice Nursing in Australia	Jolly <sup>15</sup>	Report social policy	<ul style="list-style-type: none"> <li>-Practice nursing overseas</li> <li>-Practice nurses in Australia</li> <li>-Developing practice nursing</li> <li>-Future considerations</li> </ul>	<ul style="list-style-type: none"> <li>Need for PNs = shortages of GPs, rising patient expectations, the ageing population and increase in chronic disease</li> <li>PNs enhance quality of service, are cost-effective, employing a PN is less than medical practitioner and classified as a specialty</li> <li>Government initiatives and primary care funding heavily influence the role of PNs.</li> <li>GPs see PNs as viable tools in their practice and should be utilised in the development and description of the PN's role and education/training = less likely to be controversy or conflicts between professions</li> <li>2001–2002 NIGP implemented over 4 years. Provided financial incentives for GPs to employ PNs, rurally</li> </ul>	Government funding (career and education opportunities; individual, community and local needs)	Enhance the role of dietitians in general practice through education and training. Encouraging GPs and PNs to work with dietitians Shift some focus from acute hospital dietetics practice to primary care for chronic disease management and prevention

(Continues)



TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
				<ul style="list-style-type: none"> <li>• 2005 NiGP was evaluated. Pre-NiGP 55% of practices had a PN, post-NiGP 71%</li> <li>• 2005/06 the Government provided further funding to continue NiGP for another 4 years. PIP also received additional funding</li> <li>• 2004—<i>Strengthening Medicare</i>—introduction of the MBS for PNs for immunisations and wound dressings on behalf of GPs</li> <li>• Jan 2005—MBS items for pap smear done by PNs was implemented in rural practices. In November 2006 this extended to urban areas</li> <li>• July 2005—CDM items were introduced for PNs with GPMP</li> <li>• 2005—RCNA developed national competency standards (funded by Department of Health), important framework to assist nurses (not just PNs) in practice and professional development</li> <li>• 2001—APNA was established—represents, supports and provides networking at local, state and national levels for PNs. PNs to be recognised as professional members of collaborative teams and to be seen as playing a key role in managing patient health</li> </ul>		

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
<p>Educating the Nurse of the Future—Report of the Independent Review into Nursing Education</p>	<p>Schwartz<sup>118</sup></p>	<p>Report disseminated by the Department of Health—including an updated review of nursing education since 2002.</p>	<p>Review of nursing education in Australia—including preparation for primary care</p>	<ul style="list-style-type: none"> <li>Ongoing CPD points is voluntary for PNs through APNA</li> <li>2006—Australian Government increased number of undergraduate nursing courses to deal with staff shortage issues in many areas of nursing and not specifically PN</li> <li>As of 2007 = little to no formal education to prepare and support PNs</li> </ul>	<p>Career and education opportunities</p>	<p>Entry level and post-entry level dietitian education should focus on enhancing roles in primary care</p>
<p>General Practice Nursing in Australia</p>	<p>Watts et al.<sup>119</sup></p>	<p>Report by the RACGP and RCNA</p>	<p>General practice nursing in Australia presented to medical, nursing and allied health professions.</p>	<ul style="list-style-type: none"> <li>General practice is an opportunity for GPs and PNs to collaborate to enhance the quality of care</li> </ul>	<p>Career and education opportunities</p>	<p>Create postgraduate education and training and make it more accessible to dietitians in practice</p>

(Continues)

TABLE 2 (Continued)

Title	Author, year	Type of paper/ study	Population/intervention/ scope	Key findings	Key driver (contributor)	Application to dietetics profession
			<p>Collaboration between the RACGP and RCNA to explore the role of nurses working in Australian general practices and identify the educational needs to support the role.</p>	<ul style="list-style-type: none"> <li>Provides a gap analysis to determine whether current education for PNs provides appropriate support for current and future practice.</li> <li>PNs have a very diverse role and are unique depending on the practice they work in</li> <li>PNs can have specialities and interests and these are influenced by their personal preferences and the practice needs</li> <li>Education for PNs tends to focus on National Health Priority areas</li> <li>Education accessibility varies</li> </ul>		

Abbreviations: ACP, Advanced Care Planning; ANF, Australian Nursing Federation; ANU, Australian National University; APHCRI, Australian Primary Health Care Research Institute; APNA, Australian Practice Nurses Association; ARNM, Australian Rural Nurses and Midwives; CALD, Culturally and Linguistically Diverse; CDM, Chronic Disease Management; CDN, Chronic Disease Nurse; DVA, Department of Veterans Affairs; EN, Enrolled Nurse; EPC, Enhanced Primary Care; GP, General Practitioner; GPMP, General Practitioner Management Plan; GPRN, General Practice Registered Nurse; HTN, Hypertension; IHD, Ischaemic Heart Disease; MBS, Medicare Benefits Schedule; MHCP, Mental Health Care Plan; MHNIP, Mental Health Nursing Incentive Program; MHPN, Mental Health Practice Nurse; NAHRLS, Nursing and Allied Health Rural Locum Scheme; NAHSSS, Nursing and Allied Health Scholarship and Support Scheme; NiGP, Nursing in General Practice; PESS, Patient Enablement and Satisfaction Survey; PIP, Practice Incentive Program; PN, Practice Nurse; PNIP, Practice Nurse Incentive Program; QoL, Quality of Life; RACGP, Royal Australian College of General Practitioners; RCNA, Royal College of Nursing, Australia; RHCE, Rural Health Continuing Education; RN, Registered Nurse; T2DM, Type 2 Diabetes Mellitus; TCA, Team Care Arrangement; UDRH, University Departments of Rural Health; WIP, Workplace Incentive Program.

studies and six grey literature sources. The final papers included in the review totalled 102, comprising 82 peer-reviewed articles and 20 grey literature results including government documents and websites ( $n = 10$ ), reports ( $n = 6$ ), practice standards ( $n = 2$ ), practice handbook ( $n = 1$ ) and a book chapter ( $n = 1$ ). Peer-reviewed literature consisted of a broad range of scientific papers including review articles ( $n = 10$ ), quantitative ( $n = 29$ ), qualitative ( $n = 28$ ) and mixed method ( $n = 9$ ) studies and other articles ( $n = 6$ ) including professional opinion articles and commentary reports. Table 2 provides details of the 102 papers included in this review that describe practice nurse development in Australian general practice, and their application to the dietetics profession.

Of the included studies, the earliest paper to explore practice nurse involvement in general practice was published in 1999, and all papers were in English. As with the development of the practice nurse role, the research outputs and publications have grown substantially over 22 years. Figure 2 demonstrates the number of publications in the peer-reviewed scientific literature describing practice nurse role development per year.

A timeline was constructed (Figure 3) to illustrate key contributions to practice nurse workforce development including government funding and initiatives, practice nurse bodies and associations' reports and competency standards, surveys of growth of the role, and future implications.

From the literature identified, the influence of the growth and development of the practice nurse role and workforce encompassed: Category 1: Government Funding Support, encompassing government funding initiatives that furthered the development of the role; Category 2: The Role of Professional Associations, encompassing Practice Nurse Practice Standards, Cost-Benefit of Practice Nurses and Career and Education Opportunities; and Category 3: Recognition of Local Community Needs, encompassing GP and Patient Perspectives of Practice Nurses and, Individual, Community and Local Needs. These are summarised in Table 2 and described narratively in the text following.

**Government funding:** Of the 102 papers included, 29 were related to government funding as a key driver to practice nurse role development, such as specific MBS item numbers claimable by medical practices for tasks fulfilled by a practice nurse,<sup>15,19,52,66,68,91,96,100,108,111</sup> funding for the creation of practice standards,<sup>105</sup> education and professional development funding,<sup>48</sup> and programs designed to empower the primary care workforce as a whole, where practice nurses play a vital role including the Workforce Incentive Program,<sup>113</sup> formerly Practice Nurse Incentive Program,<sup>11,20,75,110,113</sup> Mental Health Nurse Incentive Program,<sup>34,58,59,89</sup> Chronic Disease Management,<sup>18,50,88,100,117</sup> GP 'Super Clinics'<sup>81</sup> and the

'Close the Gap' initiatives.<sup>112</sup> A further 12 papers related government funding as a contributor to, but not the main driver of, practice nurse role development. These contributors included, funding initiatives to support the overall nursing and midwifery education and workforce,<sup>12,43,90,106,107</sup> GP-item numbers completed by a practice nurse,<sup>25,42,44,79,101,102</sup> and national health programs, such as the National Bowel Cancer Screening Program.<sup>109</sup>

**Practice Nurse Practice Standards:** Practice standards aim to provide practice nurses and their colleagues an outline of key roles and their scope of practice to enhance care. Two practice nurse practice standards were identified, one from the Australian Nursing Federation in 2005,<sup>116</sup> and the other from the Australian Nursing and Midwifery Federation in 2014 which was an update from the Australian Nursing Federation's 2005 practice standards.<sup>10</sup> The development of the Australian Nursing and Midwifery Federation practice standards were described in the peer-reviewed scientific literature by Halcomb and colleagues in 2017.<sup>17</sup> Another piece of grey literature 'Nursing in General Practice: a guide for the general practice team' by the Australian College of Nursing in 2015 outlined the importance of the practice standards.<sup>105</sup>

**Cost-Benefit of Practice Nurses:** Six papers described the cost-benefit of practice nurses employed and working in general practice as a key driver of practice nurse role development, including strategic utilisation of MBS item numbers,<sup>30</sup> and the management of chronic disease,<sup>46,47</sup> wounds<sup>101</sup> and risk factors such as alcohol and drug misuse,<sup>98</sup> and smoking.<sup>104</sup> An additional three related cost-benefit of practice nurses as a contributor to practice nurse role development including collaborative care programs with GPs and practice nurses.<sup>48,86,87</sup>

**Career and education opportunities:** 28 papers described practice nurse career and education opportunities as a key driver of practice nurse role development and scope of practice, in particular whether the nurse is trained as an enrolled or registered nurse,<sup>16,105,106</sup> transition to practice programs,<sup>27,45,115</sup> training and accreditation standards,<sup>90,92</sup> a need to focus on incorporating general practice nursing, including general practice placements, into undergraduate and postgraduate training,<sup>32,42,57,64,74,78,80,93,97,118,119</sup> mentoring,<sup>12,43,53,61</sup> professional development during working hours,<sup>49,51,69,85</sup> and initiatives to target job satisfaction and retention.<sup>56</sup> Another 11 papers described these opportunities as a contributor to practice nurse development, where education and training support for the overall nursing and midwifery workforce is needed,<sup>107</sup> further education of certain conditions and or populations which may be required for practice nurses working in different practice locations,<sup>11,41,55,65,83,117</sup> and career pathway frameworks.<sup>15,66,68,91</sup>

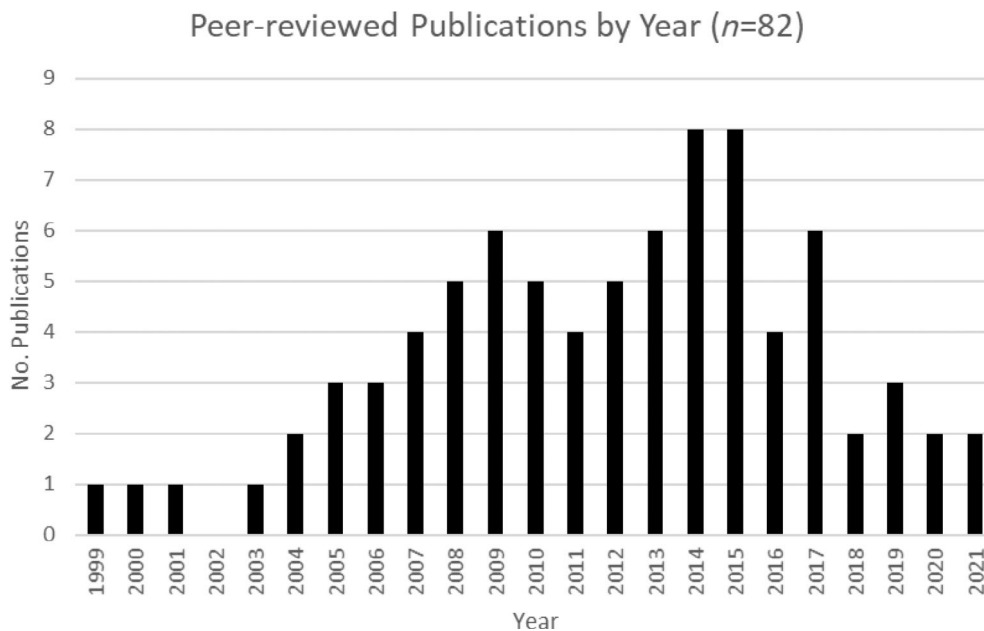


FIGURE 2 Number of publications per year since 1999 to mid-2021 that describe key determinants of Australian practice nurse roles and workforce development in peer-reviewed journals.

GP perspectives of practice nurses: Nine papers described the GP perspectives of practice nurses as a key driver of the practice nurse role development and scope of practice, in particular as GPs and practice nurses working collaboratively to deliver patient care.<sup>73,76,95,102</sup> These perspectives depended on the GP's professional and personal background, including cultural background,<sup>54</sup> and the GP's level of understanding of the practice nurse role and scope of practice.<sup>77,79,84,94,100</sup> Another nine papers described the GP perspective as a contributor, such as in nurse-led care models,<sup>40,55</sup> level of GP's support for new practice nurse initiatives,<sup>11,43,50,78,100</sup> and identified funding as a heavy influence on collaborative relationships between GPs and practice nurses.<sup>75,117</sup>

Patient perspectives of practice nurses: Twelve papers identified the importance of the patient perspective as a key driver of the practice nurse role development and scope of practice. Patient perspectives encompassed, how practice nurses worked with their GP to deliver care,<sup>28</sup> that patients could receive additional information and advice for health management,<sup>29,35,36,72,83</sup> how the role could build on therapeutic relationships through continuity of care at the general practice,<sup>37,38,103</sup> that patients can assist in identifying gaps in care,<sup>98</sup> and that this depended on how well the patient understood the scope of practice nursing.<sup>62,63</sup> Another four papers described the patient perspective as a contributor, where individuals preferred being cared for by their GP, and that practice nurses were seen as assisting<sup>11,78</sup> or filling gaps in GP care.<sup>40,70</sup>

Individual, community and local needs: Seventeen papers described individual, community and local health needs as a key driver to the practice nurse role development and scope of practice, where the practice nurse role

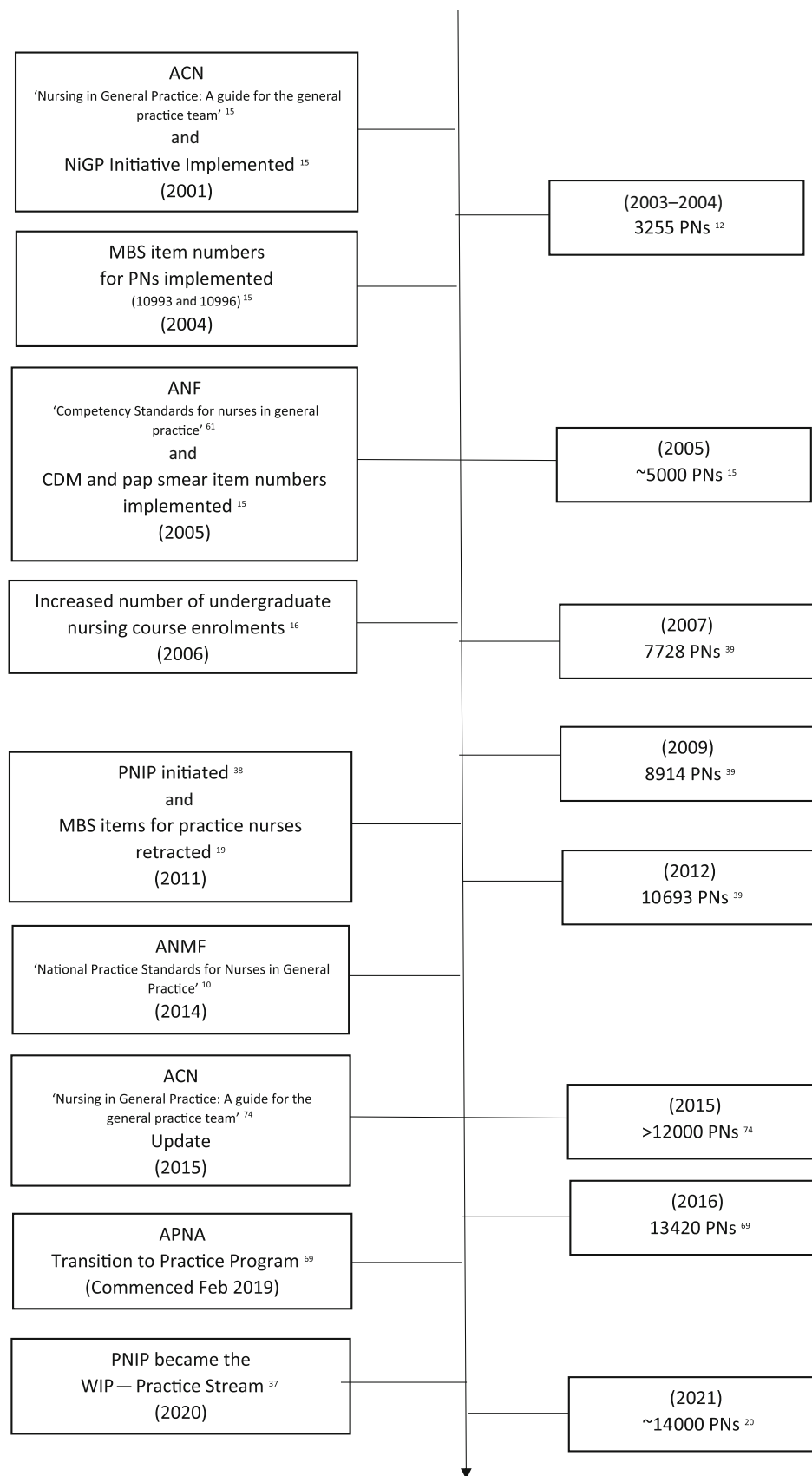
should reflect the healthcare needs of the local population,<sup>41,105</sup> including chronic disease management and prevention,<sup>31,33,39,40,44,55,60,65,71,81,86,87,109</sup> women's health,<sup>84</sup> and geographical location.<sup>70,107</sup> Another 13 described these needs as a contributor, such as patient disease status<sup>15,49,58</sup> and age,<sup>27,28</sup> other health risk factors<sup>34,56,63,68,69,99</sup> and the COVID-19 pandemic.<sup>108</sup>

## 4 | DISCUSSION

This scoping review set out to synthesise the literature describing the development of the practice nurse role, and to identify potential learnings for the private and general practice dietetic workforce. The literature identified was diverse and covered seven key drivers which can be classified into three categories that are highly relevant to dietetics, including government funding support, the role of professional organisations, and recognition of local community needs. These will now be discussed in relation to their potential application to dietitians.

The first of these categories related to government funding, costs and potential benefits to increasing nursing and allied health roles in primary care. The review findings highlight that the practice nurse role has been incrementally developed on the back of iterative changes to government funding incentives through Medicare. Beginning with MBS item numbers for pap smears and wound dressings,<sup>15</sup> these were later consolidated to become any delegated tasks under the supervision of the general practitioner/s, with further autonomy allowed in later incentive programs such as the Medicare Practice Nurse Incentive Program.<sup>20</sup>

**FIGURE 3** Timeline of the Australian practice nurse workforce growth over ~20 years in general practice (right of timeline) and key government funding and initiatives, practice guides and standards (left of timeline). ACN, Australian College of Nursing; ANF, Australian Nursing Federation; ANMF, Australian Nursing and Midwifery Federation; APNA, Australian Primary Health Care Nurses Association; CDM, Chronic Disease Management; MBS, Medicare Benefit Schedule; NiGP, Nursing in General Practice; PNs, Practice Nurses; PNIP, Practice Nurse Incentive Program; WIP, Workforce Incentive Program.



Current government funding to support the professional practice of dietitians in primary care comes from two Medicare funded incentives: Chronic Disease

Management Plans and the Workforce Incentive Program. Chronic Disease Management plans are designed to extend access to allied health professionals for

individuals with chronic disease through a limited number of Medicare subsidised appointments.<sup>18</sup> From Enhanced Primary Care rebates in 2004, to Chronic Disease Management plans implemented in 2005, they provided the impetus for structural changes to allied health services within the private sector.<sup>14,88</sup> Interestingly, in comparison to physiotherapists and podiatrists, the Chronic Disease Management item numbers utilised by dietitians decreased after the first 2 years of implementation where they had the highest Enhanced Primary Care consultation-to-provider ratio.<sup>120</sup> However, dietitians remain the third largest Enhanced Primary Care consultation provider.<sup>121</sup> The perceived limitations of Chronic Disease Management plans for expansion of dietetics services are the number of visits available, the payment system being per consultation regardless of the length of the consultation, and the inadequate value of the rebate.<sup>122</sup> These together drive shorter consultation times, limit the potential for meaningful counselling opportunities, hinder the longer-term follow up required to sustain dietary changes, and create a misalignment with best-practice chronic care models.<sup>122</sup> The tension between effectiveness and efficiency of dietetics private practice services has been highlighted previously.<sup>123</sup>

There are existing Medicare opportunities for dietitians in primary care which are not fully leveraged. These include the MBS item related to the provision of group education programs, and the Workforce Incentive Program. Group education for type 2 diabetes was found to be more effective than individual education or standard care in a recent meta-analysis.<sup>124</sup> The MBS item for group education programs is accessible to individuals with type 2 diabetes for up to eight group sessions provided by diabetes educators, exercise physiologists, and/or dietitians. Australian dietitians' use of these groups appears to be greater than diabetes educators but less than exercise physiologists.<sup>121</sup> Further, MBS group education sessions for type 2 diabetes equates to <2% of the total Medicare service provision by dietitians.<sup>121</sup> Lack of appropriate group education facilities, and perceptions of poor financial viability were reasons proposed for why dietitians did not claim type 2 diabetes group education MBS items in a 2017 survey of Australian dietitians.<sup>125</sup> Advocacy for increased Medicare rebates, collaboration with other eligible providers, and creative solutions for private dietitians to access appropriate group education facilities at reasonable cost may increase the use of these MBS items.

A further opportunity for dietitians in primary care is the Workforce Incentive Program which incorporates allied health professionals and Aboriginal and Torres Strait Islander Health workers.<sup>113</sup> The Practice Stream provides funding to the practice to directly employ health professionals, including dietitians to provide services to

patients who cannot afford private services. The funding is available to eligible general practices in any location, with loadings for rural and remote Australia.<sup>113</sup> Dietitians could be directly employed by rural and regional practices and could in turn leverage the arrangement to increase private practice referrals. However, to date this program has not been evaluated for its impact on dietetics workforce and service provision, although related work suggests the dietetics workforce is unequally distributed, favouring metropolitan areas, when compared with the location of people with type 2 diabetes.<sup>126</sup> This suggests that advocacy may be best targeted at rural practices in the first instance, so that an evaluation of dietetics services under the Workforce Incentive Program can inform wider uptake.

The second category of literature related to the role of professional organisations. Dietitians in Australia are a self-regulated profession, with the professional association responsible for accreditation of university programs and credentialing of dietitians. In 2021, Dietitians Australia updated the competency standards for dietitians in Australia,<sup>127</sup> which informed decisions on the recently revised accreditation and credentialing standards.<sup>128</sup> Private practice dietetics has not been a focus of the curriculum in Australian accredited nutrition and dietetic tertiary programs, which are still dominated by traditional domains of practice rather than new and emerging settings.<sup>1,7</sup> Thus, graduate dietitians must seek alternative means of learning about business administration and management, to establish and maintain practice in the private sector. Dietitians Australia provides several means of creating and building on such skills following graduation. For example, the Dietitians Australia 'Working in Private Practice' group, accessible to only Accredited Practising Dietitian members, provides practitioners with peer support, resources and links to key information and sites.<sup>129</sup> At a cost, dietitians can access the Dietitians Australia Small Business Manual that provides information on how to start and manage a small business covering private practice and consultancy for a dietitian. It was created by private practice dietitians for other dietitians wanting to and currently working in private practice.<sup>130</sup>

The current tertiary-level programs that are educating the future dietetic workforce have a strict set of competencies to meet and remain accredited by Dietitians Australia.<sup>127,128,131</sup> These competencies include minimal private practice applications although require the development of skills which could be applied to private practice, for example medical nutrition therapy, counselling and other clinical-based skills. Administration, marketing and business skills required to successfully establish and maintain a private practice are less prominent in these

competency standards.<sup>1</sup> Thus, it may be appropriate for Dietitians Australia to include post-tertiary professional development opportunities focused on skills required for successful private practice, rather than adding more content to the already full undergraduate and postgraduate nutrition and dietetic courses.

Options for post-tertiary training in private practice dietetics that are an alternative to Dietitians Australia are dietitian-run platforms: 'Dietitian Connection'<sup>132</sup> and 'Education in Nutrition'.<sup>133</sup> The two platforms cover all areas of dietetics including a private practice component for professional development. Dietitian Connection holds webinars, podcasts and courses aimed at improving private practice business and clinical practices, all dietitian-led.<sup>132</sup> However, much like practice nurse post-tertiary training and professional development,<sup>51</sup> these additional platforms for dietitians may be at a cost, both financial and time, to the individual presenting a potential barrier, and are relatively ad hoc in offerings.<sup>6,134</sup>

Dietitians Australia has produced a Code of Conduct for Dietitians and Nutritionists<sup>131</sup> which includes both professional and ethical considerations for practice, and these should be applied to private and general practice settings. However, private and general practice dietitians lack a clear set of practice standards specific to the setting, such as those that exist for GPs and practice nurses.<sup>105,135</sup> Beyond this short, three-page code of conduct, the scope of private practice dietitians is less understood comparative to traditional hospital dietitian roles.<sup>1,4</sup> A stronger, more comprehensive set of practice standards would improve the integration of dietitians as part of the primary healthcare team. Practice standards could be addressed to GPs, practice nurses and other members of the primary healthcare team. It is recommended that key stakeholders including the Dietitians Australia, Royal Australian College of General Practitioners, Australian College of Nursing and private and general practice dietitians collaborate to develop such practice standards. A clear set of practice standards would assist dietitians, particularly at entry-level, in building their practice and themselves as health professionals in the primary care setting.

The third and final category of literature in this review was recognition of local needs. Access to allied health services in Australia, including dietitians, is variable depending on geographical location, and particularly scarce in rural and remote Australia. This is reflected in the distribution of the Australia dietetics workforce<sup>126</sup> and the uptake of Medicare-funded services.<sup>121</sup> There is a need to address this limited access to dietetics services in underserved areas and populations.<sup>136</sup> Increasing incentives for dietitians to work in these areas, and use of telehealth, have been proposed as ways to address this

inequality.<sup>126</sup> Increasing allied health services in areas of need, including rural and remote services, is a key aim of the Workforce Incentive Program.<sup>113</sup>

As GPs and practice nurses are the two main professionals working in primary healthcare and those providing assessments for referrals and Chronic Disease Management plans, it is important to understand their views of dietitians in the workforce. For a shift in healthcare culture and the acceptance of practice nurses as autonomous and vital members of the primary health team, the key ingredient was time.<sup>16</sup> A trend was identified from earlier papers where GPs, patients, and the profession themselves saw practice nurses as a 'handmaiden' to the GP.<sup>94</sup> To this day certain patient populations, especially older generations and some GPs continue to see the practice nurse in this light. However, views have also shifted with the practice nurse becoming an autonomous and crucial primary health team member, especially in the areas of mental health,<sup>34,58,59</sup> Nurse Practitioners<sup>102</sup> (noting that this review did not include Nurse Practitioners) and in the rural setting where GPs are less available.<sup>20,63,107</sup>

The dietetics workforce should expect a similarly lengthy journey for complete integration in primary health care, that will require the varying levels that practice nursing development had. One of the largest barriers to dietetics referrals from GPs is the GP's knowledge of local dietetics services.<sup>137</sup> Once GPs know of primary care dietetics services, they are open to providing referrals to dietitians as they see their specialist dietary knowledge and counselling as vital in managing chronic conditions, in particular diabetes<sup>138</sup> and cardiovascular disease.<sup>137</sup> Understanding GPs' and practice nurses' perspectives of dietitians is key, as they are the gatekeeper in referrals for Chronic Disease Management plans and present a prime opportunity to raise nutrition awareness to patients as the first point of contact.<sup>139</sup> Therefore, Dietitians Australia, in collaboration with dietitians in primary healthcare settings, should apply advocacy efforts so that GPs and practice nurses are aware of the full range of dietetics services and how best to make referrals for patients. Likewise, the profession needs to embrace primary health as a key setting for the dietetics workforce and recognise the importance of the setting as equal to that of the hospital.

A key strength of this scoping review is there was no publication date limitations for the peer-reviewed literature search which ensures key literature to capture the development of the Australian practice nurse role over time has been identified. A limitation of the study is the use of one database for searching, however the use of grey-literature search engines including key government databases and Google Scholar led to the identification of important non-peer reviewed articles. This was



particularly useful to obtain insight into the substantial government influences on the development of practice nurses. A further limitation is the lack of literature on private insurance rebates, which represent an additional income stream for dietitians which practice nurses cannot usually access. This is a further opportunity for dietitians which this scoping review has not addressed.

In conclusion, the Australian practice nurse and dietetics workforce have grown exponentially over the past two decades. However, the growth in opportunities in general and private practice has been significantly greater for nurses than dietitians. The profession can learn from the growth in practice nurses, as an opportunity to expand the dietetics workforce in primary care settings. The literature on practice nurse development suggests the profession should focus on: (1) Building on and appropriately utilising government funding, (2) Furthering post-tertiary education and career opportunities, including the development of practice standards specific to the primary care setting for dietitians and (3) Initiatives to broaden the geographical locations of the dietetic workforce to better service rural and remote areas. It is recommended that further research into the integration of dietitians in primary care be conducted and is urgently needed to better understand and build on the opportunities for the profession.

### AUTHOR CONTRIBUTIONS

Both authors developed the research aim. ARD completed the searches and title and abstract screening. Both authors screened full text papers. ARD conducted data extraction and analysis, checked by DPR. ARD wrote the first manuscript draft. Both authors agree with the manuscript and declare that the content has not been published elsewhere.

### CONFLICT OF INTEREST

Alexandra R. Davidson reports no conflicts of interest. Dianne P. Reidlinger is on the editorial board for Nutrition & Dietetics. This manuscript has been managed throughout the review process by the Journal's Editor-in-Chief. The Journal operates a blinded peer review process and the peer reviewers for this manuscript were unaware of the authors of the manuscript. This process prevents authors who also hold an editorial role to influence the editorial decisions made.

### DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analysed in this study.

### ORCID

Alexandra R. Davidson  <https://orcid.org/0000-0002-0445-3299>

Dianne P. Reidlinger  <https://orcid.org/0000-0002-9993-8239>

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