USE OF DIETITIANS IN PRIMARY CARE

Our Experience in General Practice
Village Health Lincoln Road
Christchurch

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Village Health Lincoln Road, 4400 patients
• What the evidence suggests
• Questions
• What we did
• How we fund it
• Questions
Improved Access to and Impact of Registered Dietitian Nutritionist Services Associated with an Integrated Care Model in a High-Risk, Minority Population

• Retrospective cohort study in high risk patients in primary care in Boston, USA

• Looked at the impact of dietitian input in an integrated care environment compared with a traditional care model (ie a dietitian as a separate service)

• Within the integrated care model compared those that saw the dietitian vs those that didn’t.

• In the integrated care model the dietitian saw LESS patients than they would in a traditional model

• Patients that saw the dietitian in the IC model had a significant decrease in HbA1C (but not significant weight reduction in adults or children but the study was only over 3 months)

• Note- abstract only even with library access https://doi.org/10.1016/j.jand.2018.05.004
The contribution of dietitians to the primary health care workforce

- Literature search 2000-2014 by NZ dietitians
- Looked at studies with dietitian input in primary care – obesity, diabetes, CV disease and malnutrition
- Dietetic intervention demonstrates statistically and clinically significant impacts on health outcomes in the areas of obesity, cardiovascular disease, diabetes, and malnutrition in older adults, when compared to usual care.
- Dietitians working in primary health care can also have significant economic benefits, potentially saving the health care system NZ$5.50-$99 for every NZ$1 spent on dietetic intervention.
- Health outcomes are improved in chronic conditions and improve hospital admissions.
- Supports a similar model being applied in NZ

Clinical and cost benefits of medical nutrition therapy by registered dietitian nutritionists for management of dyslipidemia: A systematic review and meta-analysis

• Significant improvements in lipid profile, BMI, glycaemic status and BP
• Cost effectiveness and economic savings of MNT for dyslipidemia showed improved quality-adjusted life years and cost savings from reduced medication use
• 3 studies included showed significant improvement in quality of life scores, patient satisfaction with care, decline in missed work days and improved perception of health, improved quality of nutrition and physical activity
• Number of RDN visits correlated with the improvements in total cholesterol, FBG, HbA1C, BMI and W (2 studies)
• Significant reduction in the use of medications
• Significant reduction in medications: $638-1456 per year
• Significant improvement in quality adjusted life years (0.75-0.78 years)
• Suggest 60 minute initial consult and then 2X 30 minute follow-up consults
Lifestyle Intervention for Prevention of Type 2 Diabetes in Primary Health Care

- Finnish study
- Attempt to extrapolate from other high intervention trials into the primary care setting.
- Nationwide series of projects: High-risk strategy, early treatment strategy, and population strategy - this study was the result of the high-risk cohort at one year.
- Nutrition, and lifestyle intervention in high risk individuals selected from nationwide campaign
- Used 400 primary health care centres
- Dietitians and trained nurses involved
- Intervention over 1 year
- 2.9 intervention visits on average, group and individual sessions
- >10,000 individuals
Results after 1 year:

- 17.5% lost >5kg weight
- Significant reduction in weight (1.3kg in men, 1.1kg in women although 17.5% lost more than 5% weight)
- BP reduction more marked in women
- Total cholesterol, LDL, TG -decreased 5-8% in men and 2-5% in women. Inc in HDL in both.
- Significant reduction in incidence of diabetes (2% in men cf 16% in untreated, 1.2% in women cf 11.3% untreated)
- translates to 69% risk reduction in the group who lost ≥5% weight
Take Home Message:

• Clear improvement in all measures: lipids, HbA1C, weight and BP and diabetes risk reduction and medication use - $638-1456 per year in medications alone (not counting extra healthcare costs)

• Many of these benefits are seen in a short time frame (eg 3 months in one study and one year in the Finnish study)

• Cost savings to the health system
  • these may not be immediately directly captured by the practice employing the dietitian but may be a long game for the practice (reduced utility).
  • The DHB will certainly be getting long term cost benefits so maybe they should be funding dietitians in the community.

• Target high risk individuals to get the most benefits
• Group and individual sessions are effective
• Wide variation in engagement
It is effective to have dietitians as part of the primary health care team.

Target high-risk patients, 2.9 hours per year or 60 minutes + 2X30 minutes gives the most benefit.

Patients benefit with improvement in lipids, HbA1C, weight, BP and diabetes risk reduction.

Many of these benefits are seen by one year and can result in many benefits to the whole health system including reduction of medication use.
# Cost of diabetic medications

<table>
<thead>
<tr>
<th>Medications:</th>
<th>recommended dose</th>
<th>price</th>
<th>min/yr</th>
<th>max/year</th>
</tr>
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<tbody>
<tr>
<td>Acarbose</td>
<td>300-600mg per day</td>
<td></td>
<td>85.17</td>
<td>170.33</td>
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<tr>
<td>Metformin</td>
<td>$8.63 for 1000 tabs, 2-6 tablets per day</td>
<td>8.63</td>
<td>6.30</td>
<td>18.90</td>
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<tr>
<td>Glibenclamide</td>
<td>$6 for 100, 5-15mg per day</td>
<td>6</td>
<td>21.90</td>
<td>65.70</td>
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<tr>
<td>Glipizide</td>
<td>$3.27 for 100, 1 to 8 tablets per day</td>
<td>3.27</td>
<td>11.94</td>
<td>95.48</td>
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<tr>
<td>Glicazide</td>
<td>$10.29 for 500 tablets, 1-4 per day</td>
<td>10.29</td>
<td>7.51</td>
<td>30.05</td>
</tr>
</tbody>
</table>
## Cost of Diabetic Medications

<table>
<thead>
<tr>
<th>Medications:</th>
<th>recommended dose</th>
<th>price</th>
<th>min/yr</th>
<th>max/year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>dipeptidylpeptidase-4 (DPP-4) inhibitors</strong></td>
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<td></td>
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<tr>
<td>· vildagliptin,</td>
<td>$40 for 60 tablets, 1-2 tablets per day</td>
<td>40</td>
<td>486.67</td>
<td>973.33</td>
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<td></td>
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<tr>
<td>Vildagliptin 50mg + metformin 1000mg (Galvumet)</td>
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<td>324.44</td>
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<tr>
<td>Vildagliptin 50mg + metformin 850mg (Galvumet)</td>
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<td></td>
<td>324.44</td>
<td></td>
</tr>
<tr>
<td>· sitagliptin,</td>
<td>115.92 for 28 X100mg tablets,</td>
<td>115.92</td>
<td>1511.10</td>
<td></td>
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<tr>
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<tr>
<td>· saxagliptin</td>
<td>$103.50 for 28 tablets, 1 tablet per day</td>
<td>103.5</td>
<td>1349.20</td>
<td></td>
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<tr>
<td></td>
<td></td>
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<tr>
<td><strong>Sodium-glucose co-transporter 2 inhibitors</strong></td>
<td></td>
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<tr>
<td>· Dapagliflozin</td>
<td>$106.95 for 28 tablets, 10mg daily</td>
<td>106.95</td>
<td>1394.17</td>
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<tr>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td><strong>Glucagon-like peptide 1 receptor agonists</strong></td>
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<tr>
<td>· exenatide</td>
<td>$177.60 for 60 tabs, 1-2 per day</td>
<td>177.6</td>
<td>3204.00</td>
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</tr>
<tr>
<td>· pioglitazone</td>
<td>$7.10 for 45mg X90 tablets - half to 1 tablet per day</td>
<td>7.1</td>
<td>28.79</td>
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</tr>
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</table>
## Cost of diabetic medications

<table>
<thead>
<tr>
<th>Insulins</th>
<th>Price for 1500 units, eg 20 units</th>
<th>900 units</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glargine (lantus)</td>
<td>$90.50</td>
<td>90.5</td>
<td>$440.43</td>
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<tr>
<td>Apidra</td>
<td>$46.07</td>
<td>46.07</td>
<td>$224.21</td>
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<tr>
<td>Penmix 30/70</td>
<td>$42.66</td>
<td>42.66</td>
<td>$207.61</td>
</tr>
<tr>
<td>Detemir (levemir)</td>
<td>$141.73</td>
<td>228</td>
<td>$1109.60</td>
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</table>
Don’t forget...

**Equipment**
- Syringes
- Needles
- Injector devices
- Blood Sugar metres
- Ketone sticks/meters
- BSL sticks and meters

**Clinical**
- Diabetes education
- Retinal Screening
- Foot Screening
- Renal Screening
- Blood tests
- Nurse Consults
- Doctor consults
- Admissions
- Pregnancy complications
Questions?
What we did....

- Dietitians almost solely employed by DHBs in secondary care
- Overtraining of dietitians due to courses in Massey, Auckland and Otago
- Few dietitian graduates get full time dietitian roles,

--CRIMINAL WASTE OF TALENT!!!!!
Health Promoter role:
Health care assistant role + Dietitian

Promise - 12 months experience and registration at the end

Sharron Burford provides supervision
1. Support services
2. Physical Workspaces
3. Health promotion
4. Dietitian
5. Administration
1. Support Services

- Assist nurses and GPs – see medical assistant below
- venesection
- ECGs
- chaperone
- first aid
- WOUNDS – simple wound cleaning, take dressings down, apply simple dressings,
- Set up and assist in procedures
- INR – all logistics
- Osteoporosis screening

- cholesterol results (input into PREDICT and manage according to practice protocol)
- CVRA and osteoporosis screening
- feeding patients on acute demand
- Inhaler/spacer technique
- Phone calls – anything suitable for dietitian, can ring patients with some results.
- Walking group
Support Services - Medical assistant

- Pre-see patients for two doctors over a session (or when a doctor is running late or we are short)
- Bring patient into the consult room and ask for the “list”
- do obs =BP/ht/weight/temp/P/RR etc
- Abdo pain? Pregnant? Urine sample and dipstick +record
- check dashboard (and book appt eg for Cx smear)
- check last results (eg cholesterol –and invite for appointment)
- Brief dietary intervention
- Pull reg medications and requested across from med chart
- Repeat instructions to the patient (after seeing the doctor)
Benefits of Medical Assistant

• Appointments are quicker
• Session runs more to time
• Small talk and TLC is outsourced!
• Have time for phone calls, admin and cuppa during the session!
• Approx 2 more patients can be seen/dr/session (could be more)
• Usually an afternoon of about 24-30 patients will pick up 3 or 4 full paying dietitian appointments.
• Improves uptake of “Dietitian-in-lieu” appointments
• 2-3 appointments can almost wholly be completed by the dietitian with doctor just “popping in”.

Dietitian-in-lieu appointments

- Practice goal is for ALL patients with a diet related condition to see the dietitian once a year – obesity, hypertension, hypercholesterolaemia, diabetes, pre-diabetes, stable elderly, osteoporosis….almost anything!

- Patient sees the dietitian instead of the doctor for one of the REGULAR appointments

- Doctor still does the patient script

- Patient gets BP check, script and 30 minute appointment with the dietitian for the SAME price as seeing the doctor (or funded through the disability allowance if CSC as this is a legitimate service but not a standard consult).
2. Physical Workspaces

- Ensure equipment is clean and tidy and efficient
- Restocking
- set up for minor surgery
- sterilising equipment
- check expiry dates, emergency trolley, associated drugs, oxygen cylinder and IVF
- Restocking doctor’s boxes (gynae, dr rooms, minor surgery, steroid injection boxes)

- Waiting room and children’s play areas kept tidy.
- Stationery and kitchen supplies
- LABEL EVERYTHING!
3. Health promotion:

- Educational resources for waiting room,
- Patient education for diet related issues, e.g., cholesterol, diabetes, CVRA, weight management, elderly, malnourished (short and long consults).
- Website and social media
- Lifestyle advice:
  - Stop smoking (can prescribe patches and gum),
  - Sleep -2X BPAC sleep articles, screen for OSA
  - Alcohol screening
4. Dietitian:

- Ongoing diet and lifestyle advice
- Typical dietitian or “in lieu” appointments
- Diabetes: eg assist with starting patients on insulin (ie everything but the injecting).
- Number of appointments per month is growing as doctors learn how to organise “in-lieu” appointments and understand the financial benefit
5. Administration:

• Recalls
• New patient pathway
• Update the practice website
• Assist nurses administration

• ETC
How do we pay for it?

• A new graduate dietitian is paid the same as a new grad nurse $45-$50k
• DCIP funding for diabetes
• Dietitian-In-lieu appointments
• Acute demand – for new diabetics or diet related issues
• Patient fees – self funded or through disability allowance
• FODMAP contract with the DHB
• Casual patients
• Practice funds the remaining $X
• Theoretically by reducing utility the practice does better financially by holding more capitation
• Very short training period makes up for extra $ cf traditional HCA (4-6 weeks vs 1 year)
Leanne –2017, Lydia -2018 (Mat’y leave) + Dietitian students
Clinical Examples
Mr RM, 59 yo

Lantus 40 U daily, Novorapid 23 U BD, 100 needles, 200 test strips (OCD)

$880 + $207 + $70 + $126.72 = $1,283.72

HbA1C 49 (worst 64 in 2012)

Diet investigated – drinking 2 sachets Raro/day, <2 hours 1:1 dietary input

Reduced everything, now only metformin 500mg bd, HbA1C 40-45 (wanted to stay on it) - $10-18 per year
Matthew M, 33 yo,

- Generalised anxiety, depression, high user of GP appointments
- 2015 HbA1C 62,
- 2019 HbA1C 36
- Metformin since 2015, recently stopped
- Extensive dietitian input (7 appointments, nurse appointments)
- GP appointments reduced significantly by using dietitians
Pauline M 30 yo (partner of MM)

- 2017 HbA1C 67,
- April 2019 HbA1C 46
- Metformin only
- Team effort to reduce from weekly appointments
JD 65 yo female

- 2016 HbA1C 67, 90 in 2018,
- 3 dietitian appointments
- 2019 HbA1C 51-57
BD 43 yo male

- Schizophrenia, constipation,
- HbA1C July 2018 69, Now 42
- 8 Dietitian appointments over 2 years
- Metformin
- Weight now 108 Kg, was 120 in August 2017 (10% reduction)
BL 52 Yo Fijian Indian

- HbA1C 70 in 2016, similar to October 2018, then reduced to 55
- 7 Dietitian appointments in 6 months (over period of reduction)
- Vildagliptin, metformin
- Marked reduction in lipids
- 5Kg reduction in weight in 6 months
Future Role Development

- Vary dietitian appointments, short and long
- Increase scope to include injection instructions, lifestyle: smoking, sleep, exercise, motivation, self management etc
- Blood pressure – plus interpretation
- Prescribing – eg statins, diabetes medications ??hypertension??
- Career development - Could lead to practice management or Physician Assistant roles
Factors to consider

Reduced funding – if based on diagnoses rather than population projections

GP financial gain is probably modest cf DHB and MOH

Not yet quantified the reduced utility or long term non-medication savings.

High degree of innovation should be rewarded – is the juice worth the squeeze?

DHB and MOH save way more $ than the GP practice

Business case needed – driven by primary care
Discussion
References


• Howatson, A; Wall, CR; Turner-Benny, P. 215. The contribution of dietitians to the primary health care workforce. Journal of Primary Health Care 1;7(4):324-32

• Sikand, G; Cole, RE, Handu, D; deWaal, D; Christaldi, J; Johnson, EQ; Arpino, LM; Ekvail, SM. 2018. J. Clin. Lipidol Jul 3. pii: S1933-2874(18)30274-5