APPENDIX 5: Main Study Findings and Authors' Conclusions

<table>
<tr><th>First Author, Publication Year, Country</th><th>Main Findings and Authors' Conclusion</th></tr>
<tr><td colspan="2">Systematic reviews and meta-analyses</td></tr>
<tr><td>Housden,[5,17] 2013, Canada</td><td>Main Findings:

<table>
<tr><th colspan="4">Pooled estimates from RCTs comparing group care versus usual care in patients with diabetes</th></tr>
<tr><td>Outcome</td><td>No. of RCTs</td><td>WMD (95% CI)</td><td>Heterogeneity (I^2)</td></tr>
<tr><td>HbA1c</td><td>10</td><td>-0.46 (-0.80, -0.13)</td><td>82%</td></tr>
<tr><td>Systolic BP</td><td>5</td><td>-2.81 (-6.84, 1.21)</td><td>61%</td></tr>
<tr><td>Diastolic BP</td><td>4</td><td>-1.02 (-2.71, 0.67)</td><td>55%</td></tr>
<tr><td>Total cholesterol</td><td>3</td><td>0.04 (-0.21, 0.30)</td><td>0%</td></tr>
<tr><td>HDL</td><td>3</td><td>0.01 (-0.07, 0.10)</td><td>7%</td></tr>
<tr><td>Triglycerides</td><td>3</td><td>-0.01 (-0.41, 0.38)</td><td>73%</td></tr>
<tr><td>Weight</td><td>3</td><td>-0.05 (-3.87, 2.88)</td><td>0%</td></tr>
<tr><td>BMI</td><td>4</td><td>0.05 (-0.90, 1.00)</td><td>9%</td></tr>
<tr><td>QoL (using Diabetes QoL questionnaire)</td><td>2</td><td>-29.30 (-60.04, 2.05)</td><td>NR</td></tr>
</table>

<table>
<tr><th>Results from the observational studies comparing group care versus usual care in patients with diabetes</th></tr>
<tr><td>Compared to usual care in group care, HbA1c levels were shown to be statistically significantly improved in 5 studies and not statistically significantly different in 6 studies. One study showed a higher percentage of patients achieving target HbA1c levels in group care compared to usual care but whether the difference was statistically significant was not reported.</td></tr>
</table>

Authors' Conclusion:
"Group medical visits for patients with diabetes were found to be effective in terms of reducing HbA1c. The results of our meta-analysis, combined with the other benefits reported by patients and providers, suggest that wider implementation of group medical visits for patients with diabetes will have a positive effect on patient outcomes." P.E642</td></tr>
<tr><td>Edelman,[3] 2012, USA</td><td>Main Findings:
<table>
<tr><th colspan="4">Pooled estimates from RCTs comparing SMA versus UC in adults with diabetes</th></tr>
<tr><td>Outcome</td><td>No. of RCTs</td><td>MD (95% CI)</td><td>Heterogeneity (I^2)</td></tr>
<tr><td>HbA1c</td><td>13</td><td>-0.55 (-0.99 , -0.11)</td><td>93%</td></tr>
<tr><td>Systolic BP</td><td>5</td><td>-5.22 (-7.40, -3.05)</td><td>0%</td></tr>
<tr><td>Total cholesterol</td><td>5</td><td>-4.92 (-17.82, 7.97)</td><td>86%</td></tr>
<tr><td>LDL</td><td>5</td><td>-6.64 (-16.11, 2.82</td><td>79%</td></tr>
<tr><td>HRQoL (disease specific measure)</td><td>3</td><td>-1.34 (-1.93, -0.74)*</td><td>86%</td></tr>
<tr><td>HRQoL (general measure)</td><td>2</td><td>-0.84 (-1.64, -0.03)*</td><td>0%</td></tr>
<tr><td colspan="4">*SMD (95% CI)</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>First Author, Publication Year, Country</th><th>Main Findings and Authors' Conclusion</th></tr>
<tr><td></td><td>
Results from the observational studies comparing SMA versus UC in adult patients with diabetes
One study showed that compared to control, there was a statistically significant benefit with SMA (P=0.002)

Results from RCTs comparing SMA versus UC in older adult with high healthcare utilization
Both RCTs showed that there was no difference in outcomes with the SMA versus UC for overall health status (using the Likert scale) and functional status based on activities of daily living or instrumental activities of daily living. One study assessing HRQoL using a 10-point scale (with 10 indicating highest QoL) showed higher HRQoL with SMA compared to UC (7.2 with SMA versus 6.3 with UC, P=0.002).

Both RCTs found significantly higher quality ratings for patient experience with SMA compared to UC (P= 0.019 and P= 0.048).

Authors' Conclusion:
"Our review shows that SMAs—typically using closed groups with individual breakouts and opportunity for medication management—improve intermediate clinical outcomes for type 2 diabetes. A smaller literature shows positive effects on patient experience in older adults and the possibility of lower health care utilization. SMAs may be most effective for illnesses such as diabetes that have a phase in which the risk of complication is relatively high while the disease is simultaneously asymptomatic, and in which medication titration and self-management are important. Until further studies are done that allow for comparisons across conditions, the targeting of SMA interventions for chronic conditions other than diabetes will remain speculative." P. 7

(SMA – shared medical appointment)
</td></tr>
<tr><td>Steinsbekk,[10] 2012, Norway</td><td>
Main Findings:
Pooled estimates from RCTs comparing DSME versus routine treatment in adults with diabetes
<table>
<tr><th>Outcome</th><th>No. of RCTs</th><th>MD (95% CI)</th><th>Heterogeneity (I^2)</th></tr>
<tr><td>HbA1c (6 m)</td><td>13</td><td>-0.44 (-0.69, -0.19)</td><td>55.8%</td></tr>
<tr><td>HbA1c (12 m)</td><td>11</td><td>-0.46 (-0.74, -0.18)</td><td>64.6%</td></tr>
<tr><td>HbA1c (12 years)</td><td>3</td><td>-0.87 (-1.25, -0.49)</td><td>0%</td></tr>
<tr><td>Fasting blood glucose (6 m)</td><td>3</td><td>-0.73 (-2.22, 0.76)</td><td>68.1%</td></tr>
<tr><td>Fasting blood glucose (12 m)</td><td>5</td><td>-1.26 (-1.69, -0.83)</td><td>0%</td></tr>
<tr><td>Weight (6 m)</td><td>3</td><td>-2.08 (-5.55, 1.39)</td><td>48.2%</td></tr>
<tr><td>Weight (6 m)</td><td>4</td><td>-1.66 (-3.07, -0.25)</td><td>0%</td></tr>
<tr><td>BMI (6 m)</td><td>7</td><td>-0.21 (-0.86, 0.43)</td><td>0%</td></tr>
<tr><td>BMI (12 m)</td><td>7</td><td>-0.22 (-1.13, 0.69)</td><td>62.2%</td></tr>
<tr><td>Systolic BP (6 m)</td><td>5</td><td>-0.34 (-5.19, 4.51)</td><td>67.9%</td></tr>
<tr><td>Systolic BP (12)m)</td><td>2</td><td>-2.61 (-6.74, 1.52)</td><td>0%</td></tr>
</table>
</td></tr>
</table>

First Author, Publication Year, Country	Main Findings and Authors' Conclusion

Total cholesterol (6 m)	7	-0.04 (-0.17, 0.10)	0%
Total cholesterol (12 m)	4	0.07 (-0.09, 0.24)	0%
Triglycerides (6 m)	7	-0.16 (-0.35, 0.03)	0%
Triglycerides (12 m)	4	0.03 (-0.42, 0.48)	79.7%
LDL (12 m)	6	-0.05 (-0.20, 0.10)	0%
HDL (6 m)	6	0.02 (-0.05, 0.08)	0%
QoL ((6 m)	3	0.31 (-0.15, 0.78)*	77.1%
Treatment satisfaction (6 m)	2	0.65 (0.44, 0.85)*	0%
Treatment satisfaction (12 m)	3	0.39 (0.21, 0.57)*	0%

*SMD (95% CI)

Authors' Conclusion:
"Group-based DSME in people with type 2 diabetes results in improvements in clinical, lifestyle and psychosocial outcomes." P. 1

(DMSE = diabetes self-management education)

Randomized controlled trials

Weinger,[11] 2011, USA

Main Findings:

Results from RCT with adults with diabetes			
Outcome	**Effect size (mean ± SD)**		
	Structured behavioral group	**Attention control group**	**Individual group**
HbA1c (%) - baseline	9.1 ± 1.1	9.1 ± 1.2	8.9 ± 1.1
HbA1c (%) – 3m	8.3 ± 1.1	8.7 ± 0.9	8.5 ± 1.2
HbA1c (%) – 6m	8.4 ± 1.1	8.7 ± 1.1	8.6 ± 1.0
HbA1c (%) - 12m	8.5 ± 1.3	8.6 ± 1.3	8.7 ± 1.3
HDL- baseline	50.9 ± 15.2	48.9 ± 16.2	53 ± 18.7
HDL - 6m	52.8 ± 19.3	49.7 ± 18.2	52.4 ± 18.1
HDL – 12m	52.1 ± 21.4	47.6 ± 17.1	51.5 ± 18.6
LDL- baseline	105.8 ± 33.5	108.5 ± 35	103.4 ± 25.2
LDL - 6m	108.3 ± 32	100.4 ± 26.5	108.6 ± 28.8
LDL – 12m	103.1 ± 29	98.7 ± 31.9	103.4 ± 34.7
BMI - baseline	29.1 ± 6.6	31 ± 7.3	29.9 ± 6.6
BMI – 3m	28.6 ± 6.3	31 ± 7.5	29.5 ± 6.4
BMI – 6m	28.4 ± 5.5	31.5 ± 7.3	29.5 ± 6.3
BMI – 12m	28.9 ± 6.7	31.3 ± 7.4	30.1 ± 6.5
QoL - baseline	67.0 ± 10.2	66.4 ± 10.4	67.8 ± 11.4
QoL – 3m	69.8 ± 10.7	70.5 ± 11.3	70.5 ± 10.7
QoL – 6m	68.8 ± 10.8	69.4 ± 12.1	71.6 ± 11.6
QoL -12m	69.4 ± 11.3	72.2 ± 10.5	71.6 ± 11.2

<table>
<tr><th>First Author, Publication Year, Country</th><th>Main Findings and Authors' Conclusion</th></tr>
<tr><td></td><td>Authors' Conclusion:
"A structured, cognitive behavioral program is more effective than two control interventions in improving glycemia in adults with long-duration diabetes. Educators can successfully utilize modified psychological and behavioral strategies." P.1</td></tr>
<tr><td>Ferrara,[12] 2012, Italy</td><td>Main Findings:
<table>
<tr><th colspan="4">Results from RCT with patients with hypertension</th></tr>
<tr><th>Outcome</th><th>Group - EC</th><th>UC</th><th>P value</th></tr>
<tr><td>Fasting blood glucose, mg/dL - baseline</td><td>98.6 ± 26</td><td>102.7 ± 27</td><td>NS</td></tr>
<tr><td>Fasting blood glucose, mg/dL – 6 m</td><td>103.2 ± 36</td><td>99.9 ± 20</td><td>NS</td></tr>
<tr><td>Fasting blood glucose, mg/dL – 12 m</td><td>99.2 ± 22</td><td>104.9 ± 33</td><td>NS</td></tr>
<tr><td>SBP, mm Hg - baseline</td><td>136.0 ± 17</td><td>132.3 ± 15</td><td>NS</td></tr>
<tr><td>SBP, mm Hg – 6 m</td><td>127.3 ± 12</td><td>133.1 ± 16</td><td>0.05</td></tr>
<tr><td>SBP, mm Hg – 12 m</td><td>124.5 ± 10</td><td>133.5 ± 15</td><td>0.001</td></tr>
<tr><td>DBP, mm Hg - baseline</td><td>85.4 ± 12</td><td>83.3 ± 9</td><td>NS</td></tr>
<tr><td>DBP, mm Hg – 6 m</td><td>80.3 ± 8</td><td>81.9 ± 10</td><td>NS</td></tr>
<tr><td>DBP, mm Hg – 12 m</td><td>77.9 ± 9</td><td>81.3 ± 9</td><td>0.01</td></tr>
<tr><td>Cholesterol mg/dL - baseline</td><td>199.7 ± 36</td><td>195.6 ± 37</td><td>NS</td></tr>
<tr><td>Cholesterol mg/dL – 6 m</td><td>200.4 ± 39</td><td>194.5 ± 33</td><td>NS</td></tr>
<tr><td>Cholesterol mg/dL – 12 m</td><td>183.8 ± 32</td><td>192.1 ± 33</td><td>NS</td></tr>
<tr><td>LDL-C, mg/dL - baseline</td><td>126.8 ± 32</td><td>119.5 ± 36</td><td>NR</td></tr>
<tr><td>LDL-C, mg/dL – 6 m</td><td>126.0 ± 38</td><td>113.3 ± 37</td><td>0.05</td></tr>
<tr><td>LDL-C, mg/dL – 12 m</td><td>110.8 ± 33</td><td>113.3 ± 35</td><td>NS</td></tr>
<tr><td>HDL-C, mg/dL - baseline</td><td>49.1 ± 12</td><td>49.8 ± 13</td><td>NS</td></tr>
<tr><td>HDL-C, mg/dL – 6 m</td><td>49.3 ± 13</td><td>51.6 ± 12</td><td>NS</td></tr>
<tr><td>HDL-C, mg/dL – 12 m</td><td>49.7 ± 12</td><td>52.0 ± 14</td><td>NS</td></tr>
<tr><td>Triglycerides, mg/dL - baseline</td><td>127.1 ± 97</td><td>142.0 ± 82</td><td>NS</td></tr>
<tr><td>Triglycerides, mg/dL -</td><td>142.0 ± 95</td><td>133.5 ± 60</td><td>NS</td></tr>
<tr><td>Triglycerides, mg/dL -</td><td>115.2 ± 48</td><td>134.9 ± 54</td><td>0.01</td></tr>
<tr><td>Weight, kg - baseline</td><td>79.5 ± 15</td><td>80.0 ± 12</td><td>NS</td></tr>
<tr><td>Weight, kg – 6 m</td><td>77.1 ± 14</td><td>80.7 ± 12</td><td>0.05</td></tr>
<tr><td>Weight, kg – 12 m</td><td>76.5 ± 14</td><td>80.9 ± 13</td><td>0.02</td></tr>
<tr><td>BMI - baseline</td><td>28.7 ± 5</td><td>29.6 ± 4</td><td>NS</td></tr>
<tr><td>BMI – 6 m</td><td>27.9 ± 4</td><td>29.9 ± 4</td><td>0.001</td></tr>
<tr><td>BMI -12 m</td><td>27.6 ± 4</td><td>30.0 ± 4</td><td>0.001</td></tr>
</table>
Authors' Conclusion:
"The present investigation shows that involving patients in a face-to-face program with doctors and dieticians is a low-cost/benefit procedure able to improve the outcome of the disease and reduce the risk of cardiovascular events, possibly preventing increasing costs and drug therapy"</td></tr>
</table>

<table>
<tr><th>First Author, Publication Year, Country</th><th>Main Findings and Authors' Conclusion</th></tr>
<tr><td colspan="2">Non randomized studies</td></tr>
<tr><td>Cuesta,[13] 2013, Spain</td><td>Main Findings:
<table>
<tr><th colspan="4">Results from a non-randomized study on adults with DM (type 2) showing changes after the intervention period</th></tr>
<tr><th>Outcome</th><th>Psychoeducative group (PGT)</th><th>Control group (C)</th><th>P value</th></tr>
<tr><td>HbA1c (%)</td><td>-0.51 ± 1.07</td><td>-0.06 ± 0.53</td><td>0.044</td></tr>
<tr><td>SBP, mm Hg</td><td>-8.07 ± 17.70</td><td>-2.67 ± 11.12</td><td>0.128</td></tr>
<tr><td>DBP, mm Hg</td><td>-1.93 ± 3.57</td><td>-0.05 ± 1.73</td><td>0.409</td></tr>
<tr><td>Total cholesterol, mg/dL</td><td>-11.69 ± 21.17</td><td>-7.56 ± 76.15</td><td>0.789</td></tr>
<tr><td>LDL-C, mg/dL</td><td>-9.33 ± 17.16</td><td>-8.33 ± 30.89</td><td>0.878</td></tr>
<tr><td>HDL-C, mg/dL</td><td>-1.04 ± 7.71</td><td>-4.74 ± 6.04</td><td>0.037</td></tr>
<tr><td>Triglycerides, mg/dL</td><td>-28.89 ± 49.70</td><td>0.89 ± 56.06</td><td>0.021</td></tr>
<tr><td>Weight, kg</td><td>-1.93 ± 3.57</td><td>0.52 ± 1.73</td><td>0.002</td></tr>
<tr><td>BMI, kg/m^2</td><td>-0.71 ± 1.31</td><td>0.08 ± 0.65</td><td>0.001</td></tr>
</table>
Authors' Conclusion:
"PGT patients achieved a significant improvement in HbA1C, BMI and CVRF, and outperformed the conventional diabetes education group in achieving the optimal diabetes control objectives. Structural changes in the assistance programs should be considered to introduce these more efficient therapies for diabetes education in primary care."

(BMI = body mass index, CVRF = cardiovascular risk factor, HbA1c = glycated hemoglobib, PGT = psycho-educational group therapy)</td></tr>
<tr><td>Reitz,[14] 2012, USA</td><td>Main Findings:
<table>
<tr><th colspan="5">Changes between baseline and follow up in % of patients in the group visit program and control (no group visit)</th></tr>
<tr><th rowspan="2">Outcome</th><th rowspan="2">Time point</th><th colspan="2">Percentage of patients with outcome</th><th rowspan="2">P value*</th></tr>
<tr><th>Group visit</th><th>No group visit</th></tr>
<tr><td rowspan="2">HbA1c<7%</td><td>Baseline</td><td>36.5</td><td>42</td><td rowspan="2">0.03</td></tr>
<tr><td>Follow up</td><td>56.4</td><td>45.5</td></tr>
<tr><td rowspan="2">HbA1c<8%</td><td>Baseline</td><td>51.9</td><td>68.2</td><td rowspan="2">0.21</td></tr>
<tr><td>Follow up</td><td>69.2</td><td>69.5</td></tr>
<tr><td rowspan="2">HbA1c>9%</td><td>Baseline</td><td>30.8</td><td>19.5</td><td rowspan="2">0.16</td></tr>
<tr><td>Follow up</td><td>28.2</td><td>18.5</td></tr>
<tr><td rowspan="2">BP<130/80 mm Hg</td><td>Baseline</td><td>34.6</td><td>33.9</td><td rowspan="2">0.91</td></tr>
<tr><td>Follow up</td><td>32.7</td><td>33.5</td></tr>
<tr><td rowspan="2">BP<140/90 mm Hg</td><td>Baseline</td><td>61.5</td><td>64.8</td><td rowspan="2">0.05</td></tr>
<tr><td>Follow up</td><td>75</td><td>60.2</td></tr>
<tr><td rowspan="2">LDL<100mg/dL</td><td>Baseline</td><td>41.2</td><td>47.7</td><td rowspan="2">0.67</td></tr>
<tr><td>Follow up</td><td>55.6</td><td>51.7</td></tr>
<tr><td rowspan="2">LDL<130mg/dL</td><td>Baseline</td><td>74.5</td><td>76.6</td><td rowspan="2">0.17</td></tr>
<tr><td>Follow up</td><td>86.1</td><td>75.9</td></tr>
<tr><td colspan="5">*for change in the proportion of patients between the two intervention groups</td></tr>
</table></td></tr>
</table>

First Author, Publication Year, Country	Main Findings and Authors' Conclusion
	Authors' Conclusion: **"**Early experience with the group visit program was encouraging and suggested it may improve patients' management of their diabetes mellitus in an urban, predominantly African American population." P.715

BMI = body mass index, BP = blood pressure, DBP = diastolic blood pressure, CI = confidence interval, HbA1c = glycated hemoglobin, HDL = high density lipoprotein, HDL-C = HDL cholesterol, LDL = low density lipoprotein, LDL-C = LDL cholesterol, NR = not reported, NS = not significant, QoL = quality of life, SBP = systolic blood pressure, SMD = standardized mean difference, WMD = weighted mean difference