Director-General Health & Social Care and
Chief Executive NHS Scotland
Derek Feeley

The Scottish Government

CEL 4 (2012)

February 2012

Addresses

For action
Chief Executives, NHS Boards

For information
Medical Directors, NHS Boards
Directors of Finance, NHS Boards
Directors of Planning NHS Boards
Lead Clinicians of diabetes Managed Clinical Networks

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Dear Colleague

Insulin Pump Therapy for People with Type 1 Diabetes

On 21 October 2011, the Cabinet Secretary for Health, Wellbeing & Cities Strategy announced the decision to commit NHSScotland to substantially increasing the availability of insulin pump therapy across Scotland to ensure equity of access.

Consequently, a quarter of young Scots with type 1 diabetes must have access to insulin pumps by March 2013, and by March 2015, the number of insulin pumps available to people of all ages with type 1 diabetes in Scotland will almost triple to more than 2,000.

Diabetes is a growing problem for NHSScotland. The consequences of not dealing effectively with diabetes are profound. It is now thought that around 10 per cent of overall hospital expenditure relates to the treatment of diabetes and its complications. Clearly, we need to make sure that people get the treatment that is right for them as early as possible. Delivering this Ministerial commitment will help ensure that people with type 1 diabetes receive safe, effective and person centred care.

The decision to set a clear target for NHS boards recognises that we need to do more to ensure people living with type 1 diabetes get access to this often life changing treatment, while helping to reduce the burden of diabetes on NHS Scotland in the longer term.

The annex to this letter sets out the support that will be available from the Scottish Government to assist NHS boards to meet this commitment. The annex also provides an estimate of the levels of investment that Boards will be expected to make in pump services over the next three years, including investment in pumps, consumables, education and staffing costs. In addition the annex includes:

- the evidence for insulin pump therapy;
- the wider European, US and UK context where pump therapy is quickly becoming a core part 21st Century diabetes services;
- clear rationale for the commitment to increasing pump provision; and,
- target levels of provision for each NHS board;

In addition, it sets out our expectation, that NHS boards will develop local action plans, which set out how each board will increase local provision.

We recognise that achieving the targets set out in the annex will be challenging for many NHS boards. Boards may therefore wish to adopt a clear risk management process and consider whether risks to achieving targets ought to be included in their local delivery plans for 2012/ 2013 to 2014/2015.

I would ask Chief Executives to bring this letter and the attached guidance, to the attention of all appropriate staff to ensure that this Ministerial priority is met.

Chief Executives should appoint a senior member of their Executive Team to lead on this work and provide a note of their contact details to Helen Stevens by 23 March (see panel for contact details).

Yours sincerely

DEREK FEELEY

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Director General

Insulin Pump Therapy

There is unequivocal evidence that intensive insulin treatment reduces microvascular complications in type 1 diabetes. For most people this involves multiple dose injection. For others this will mean insulin pump therapy.

Intensive insulin therapy aims to resemble as much as possible the natural pattern of insulin release from the pancreas in order to keep blood glucose levels at near normal rates. While insulin pumps have been available for over two decades, advances in technology now mean that pump therapy is considered a mainstream therapy.

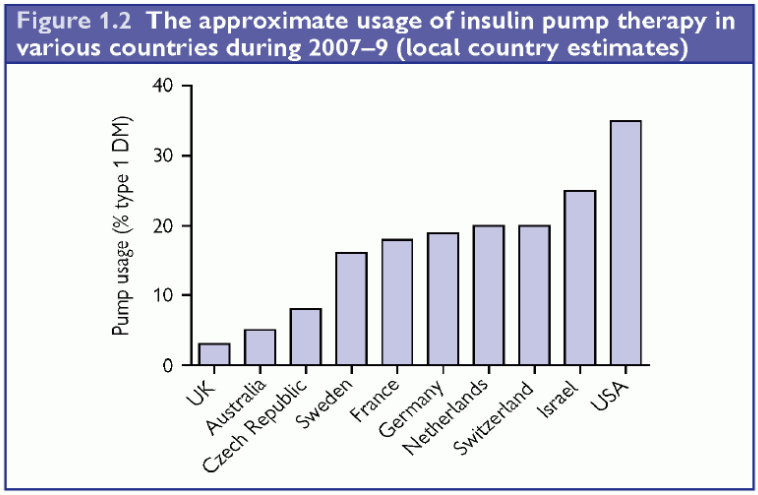
Pumps are particularly suitable for people with type 1 diabetes who are unable to obtain satisfactory glucose control, or who continue to experience severe hypoglycaemia. The key outcomes of pump therapy include:

- **Reductions in hospital admissions:** pumps are associated with improvements in glucose control which assists in the reduction of hypoglycaemic episodes. Hypoglycaemia is a major cause of emergency hospital admissions with substantial resource implications for paramedic and hospital services.
- **Reductions in long term complications**: there is strong evidence that shows poor glucose control is associated with serious complications such eye disease, foot disease and kidney disease.
- **Quality of life:** perhaps most importantly, pump users in Scotland consistently report that pumps are life transforming, significantly improving their quality of life.

Insulin pump provision

Insulin pump therapy is fast becoming a core part of 21st Century diabetes services across the world, reflecting the evidence base, and a growing awareness of the benefits for people living with type 1 diabetes. The provision of pump therapy in Europe and the USA is however, notably higher than in the UK.

Table 1. Insulin pump provision in various countries (2009)



Source: OUP (2009) - Professor John Pickup, Professor of Diabetes and Metabolism, KCL

Furthermore, pump provision in Scotland lags behind the rest of the UK. The current level of provision in Scotland is around 3.1%, compared to about 4% in England and Wales. Germany, the USA and Israel, are now treating 15% - 20% of people with type 1 diabetes with pump therapy and in much of Europe, pump provision is around 10%.

Clinical Guidance

NICE Technology Assessment 151 (TA151) and SIGN Guideline 116 on the management of diabetes, both support the use of insulin pump therapy (CSII) in selected patients. The SIGN Guidelines states that:

- Insulin pump therapy is associated with modest improvements in glycaemic control and should be considered for patients unable to achieve their glycaemic targets. A* (SIGN 116)
- Insulin pump therapy should be considered in patients who experience recurring episodes of severe hypoglycaemia. B* (SIGN 116)

NICE TA151 suggests that between 4% and 14% of people with type 1 diabetes could benefit from insulin pump therapy. The following table sets out the current rate of provision in each NHS Board as of December 2011.

Table 2. Pump Provision in Scotland (2009 – 2010)

NHS BOARD	Type 1 Population 2010	Number of pumps 2010	Percentage 2010	Type 1 Population 2011	Number of pumps 2011	Percentage 2011
Ayrshire & Arran	2,238	18	0.80%	2,217	35	**1.6%**
Borders	601	29	4.80%	621	51	**8.2%**
Dumfries & Galloway	888	20	2.30%	900	23	**2.6%**
Fife	1,911	113	5.90%	1,976	132	**6.7%**
Forth Valley	1,568	40	2.60%	1,618	45	**2.8%**
Grampian	3,045	63	2.10%	3,042	72	**2.4%**
Greater Glasgow & Clyde	6,115	67	1.10%	6,195	95	**1.5%**
Highland	1,706	18	1.10%	1,773	29	**1.6%**
Lanarkshire	3,480	45	1.30%	3,533	56	**1.6%**
Lothian	4,109	173	4.20%	4,184	208	**5.0%**
Orkney	116	3	2.60%	120	5	**4.2%**
Shetland	119	2	1.70%	123	2	**1.6%**
Tayside	1,837	104	5.70%	1,866	130	**7.0%**
Western Isles	177	1	0.60%	178	1	**0.6%**
Scotland	27,910	696	2.50%	28,346	884	**3.1%**

The Diabetes Action Plan (August 2010), sets out our ambition to deliver world class diabetes care. The Action Plan makes it clear that NHS Boards need to invest in insulin pumps therapy and the structured education associated with it. However, the pace of investment has been variable. While overall insulin pump provision is increasing, only 4 NHS boards are currently achieving the recommended minimum levels of provision.

While we welcome the progress made to date in increasing provision across Scotland, we need to do more to further increase access to pump therapy. The Cabinet Secretary for Health, Wellbeing & Cities Strategy's announcement on 21 October, set out our commitment to achieve this.

Monitoring Arrangements

We will introduce enhanced monitoring processes so that we know how each Board is performing.

We expect boards to monitor their progress towards their targets on a monthly basis. The Scottish Diabetes Group (SDG) will closely monitor all Boards' progress and will report to Health Ministers on a quarterly basis.

The Scottish Diabetes Survey will publish age related data on insulin pumps for the first time in 2012. The annual survey will be the mechanism by which data is publically released and will be an essential tool in monitoring progress towards meeting this commitment.

The Scottish Diabetes Group has also been asked to identify further opportunities to support pump services and will arrange a national pump training day later in 2012/13.

Insulin pump targets

We expect to see significant improvements in the availability of pumps across Scotland. NHS Boards are required to ensure that 25% of people under 18 years living with type 1 diabetes receive insulin pump therapy by March 2013. By March 2015, NHS Boards will almost triple the number of pumps available to people of all ages with type 1 diabetes to more than 2000.

As of December 2011, there were around 2878 young people under the age of 18 living with diabetes in Scotland, 241 of whom already have a pump. This means that NHS Boards will need to provide around 487 new pumps by March 2013, in order make sure that 25 per cent of young people have access to an insulin pump.

Some Boards have already demonstrated progress in widening access to insulin pump therapy and are already providing insulin pump therapy to more than 25 per cent of young people with type 1 diabetes in their area. However, all NHS Boards are expected to achieve the 25 per cent target on an individual basis to ensure that good provision in one Board does not compensate for poorer provision in another.

Supporting boards to meet the Ministerial commitment

NHS Boards will benefit from a share of £8,802 billion in revenue funding in 2012/2013. In addition, indicative figures show that revenue funding for territorial health boards is likely to increase further by 3.3 per cent in 2013-14 and by 3.1 per cent in 2014-15.

In order to support NHS Boards in meeting this key Ministerial commitment, Scottish Government will fund the purchase of pumps and consumables in 2012/13 based on the submission of action plans from Boards up to the total value indicated in Table 4 below. This process will be managed by NHSScotland National Procurement following agreement of detailed plans. All other costs in 2012/13 should be met by Boards. NHS Boards are required to meet this key commitment on insulin pumps in full from within their funding allocations from 2013-14. Boards must also ensure that the quality of diabetes and other healthcare services is not compromised when working towards local insulin pump targets.

Table 3 below sets out the number of additional pumps required on a board by board basis in order to meet the Ministerial commitment.

Table 3. Number of additional pumps required by NHS Board

NHS Board	Number of people<18 on an insulin pump and percentage of <18 T1DM Population		Number of extra pumps and percentage increase required to meet 25% provision for <18s		Number of people >18 on an insulin pump and percentage of >18 T1DM Population		Number of extra pumps and percentage increase required to equitably meet provision commitment for >18s	
NHS Ayrshire and Arran	18	7.8%	**40**	17.2%	17	0.9%	**104**	5.2%
NHS Borders	17	23.0%	**2**	2.0%	34	6.2%	**0**	0.0%
NHS Dumfries and Galloway	2	2.5%	**18**	22.5%	21	2.6%	**29**	3.5%
NHS Fife	19	9.5%	**31**	15.5%	113	6.4%	**0**	0.0%
NHS Forth Valley	12	6.9%	**32**	18.1%	33	2.3%	**55**	3.8%
NHS Grampian	22	7.0%	**56**	18.0%	50	1.8%	**116**	4.2%
NHS Greater Glasgow & Clyde	50	8.4%	**99**	16.6%	45	0.8%	**295**	5.3%
NHS Highland	0	0.0%	**51**	25.0%	29	1.8%	**66**	4.2%
NHS Lanarkshire	0	0.0%	**99**	25.0%	56	1.8%	**134**	4.3%
NHS Lothian	39	10.7%	**52**	14.3%	169	4.4%	**63**	1.6%
NHS Orkney	4	25.0%	**0**	0.0%	1	1.0%	**5**	5.1%
NHS Shetland	0	0.0%	**4**	25.0%	2	1.9%	**4**	4.2%
NHS Tayside	58	29.4%	**0**	0%	72	4.3%	**29**	1.8%
NHS Western Isles	0	0.0%	**5**	25.0%	1	0.6%	**9**	5.4%
Scotland	241	8.4%	**487**	16.9%	643	2.5%	**909**	3.6%

*the numbers of required pumps have been rounded to the nearest whole. The percentage increase for >18s is based on a total increase in pumps required across Scotland spilt across all NHS Boards to ensure equity.

Table 4 below sets out the estimated costs associated with delivering the commitment that 25% of people under 18 years living with type 1 diabetes receive insulin pump therapy by March 2013.

Table 4: Costs associated with the 25% target for young people in 2012/2013

NHS Board	Cost of Consumables (£1500 per year)	Cost of pumps (£2300 per pump)	Cost of insulin (£312 per year)	Staff Costs (£705 for <18 initiation)	Total cost for the year 2012/ 2013 based on cost of pump, initiation and consumables and insulin for 1 year
NHS Ayrshire and Arran	**£60,000**	**£92,000**	£12,480	£28,200	£192,680
NHS Borders	**£3,000**	**£4,600**	£624	£1,410	£9,634
NHS Dumfries and Galloway	**£27,000**	**£41,400**	£5,616	£12,690	£86,706
NHS Fife	**£46,500**	**£71,300**	£9,672	£21,855	£149,327
NHS Forth Valley	**£48,000**	**£73,600**	£9,984	£22,560	£154,144
NHS Grampian	**£84,000**	**£128,800**	£17,472	£39,480	£269,752
NHS Greater Glasgow and Clyde	**£148,500**	**£227,700**	£30,888	£69,795	£476,883
NHS Highland	**£76,500**	**£117,300**	£15,912	£35,955	£245,667
NHS Lanarkshire	**£148,500**	**£227,700**	£30,888	£69,795	£476,883
NHS Lothian	**£78,000**	**£119,600**	£16,224	£36,660	£250,484
NHS Orkney	**£0**	**£0**	£0	£0	£0
NHS Shetland	**£6,000**	**£9,200**	£1,248	£2,820	£19,268
NHS Tayside	**£0**	**£0**	£0	£0	£0
NHS Western Isles	**£7,500**	**£11,500**	£1,560	£3,525	£24,085
Scotland	**£733,500**	**£1,124,700**	**£152,568**	**£344,745**	**£2,355,513**

* The estimated costs are based on the number of pumps required in each NHS Board area to provide 25% provision for <18s in 1 year

Funding to meet the costs of pumps and consumables up to the values set out in table 4 above will be met by Scottish Government. The funding for staff costs and insulin that will be required to support the Ministerial commitment should be set aside by each NHS Board from their 2012/2013 allocation. NHS Boards should also provide an indication of the number and type of pumps that it requires to be funded by Scottish Government for use in 2012/2013

Costs associated with 2000 pumps by March 2015

As of December 2011, there are around 884 people of all ages already accessing insulin pump therapy. This means that NHS Boards will need to provide around **an additional** 909 pumps, if they are to meet the commitment of at least 2000 pumps by March 2015. Tables 5 & 6 below sets out the costs associated with delivering this commitment.

Table 5: Cost of delivering the first 50% of pumps required to > 18yrs in 2013/ 2014

NHS Board	Cost of Consumables (£1500 per year)	Cost of pumps (£2300 per pump)	Cost of insulin (£312 per year)	Staff Costs (£500 for >18 initiation)	Total cost for the year 2014 based on cost of pump, initiation and consumables and insulin for 1 year
NHS Ayrshire and Arran	£78,000	£119,600	£16,224	£26,000	£239,824
NHS Borders	£0	£0	£0	£0	£0
NHS Dumfries & Galloway	£21,750	£33,350	£4,524	£7,250	£66,874
NHS Fife	£0	£0	£0	£0	£0
NHS Forth Valley	£41,250	£63,250	£8,580	£13,750	£126,830
NHS Grampian	£87,000	£133,400	£18,096	£29,000	£267,496
NHS Greater Glasgow & Clyde	£221,250	£339,250	£46,020	£73,750	£680,270
NHS Highland	£49,500	£75,900	£10,296	£16,500	£152,196
NHS Lanarkshire	£100,500	£154,100	£20,904	£33,500	£309,004
NHS Lothian	£47,250	£72,450	£9,828	£15,750	£145,278
NHS Orkney	£3,750	£5,750	£780	£1,250	£11,530
NHS Shetland	£3,000	£4,600	£624	£1,000	£9,224
NHS Tayside	£21,750	£33,350	£4,524	£7,250	£66,874
NHS Western Isles	£6,750	£10,350	£1,404	£2,250	£20,754
Scotland	**£681,750**	**£1,045,350**	**£141,804**	**£227,250**	**£2,096,154**

*Costs are calculated from the number of pumps required in each NHS Board area in order to provide the first 50% of the 909 pumps required and have been split equally between the two years. Where there is an odd number of pumps required, the extra pump cost has been split equally between 2014 and 2015.

The above table shows the estimated costs in 2013/ 2014, of providing half of the 909 pumps required to provide 2000 pumps in March 2015 broken down on an NHS Board basis.

Table 6: Costs of delivering the remaining 50% of pumps required to > 18yrs in 2014/ 2015

NHS Board	Cost of Consumables (£1500 per year)	Cost of pumps (£2300 per pump)	Cost of insulin (£312 per year)	Staff Costs (£500 for >18 initiation)	Total cost for the year 2015 based on cost of pump, initiation and consumables and insulin for 1 year.
NHS Ayrshire & Arran	£156,000	£119,600	£32,448	£26,000	£334,048
NHS Borders	£0	£0	£0	£0	£0
NHS Dumfries & Galloway	£43,500	£33,350	£9,048	£7,250	£93,148
NHS Fife	£0	£0	£0	£0	£0
NHS Forth Valley	£82,500	£63,250	£17,160	£13,750	£176,660
NHS Grampian	£174,000	£133,400	£36,192	£29,000	£372,592
NHS Greater Glasgow & Clyde	£442,500	£339,250	£92,040	£73,750	£947,540
NHS Highland	£99,000	£75,900	£20,592	£16,500	£211,992
NHS Lanarkshire	£201,000	£154,100	£41,808	£33,500	£430,408
NHS Lothian	£94,500	£72,450	£19,656	£15,750	£202,356
NHS Orkney	£7,500	£5,750	£1,560	£1,250	£16,060
NHS Shetland	£6,000	£4,600	£1,248	£1,000	£12,848
NHS Tayside	£43,500	£33,350	£9,048	£7,250	£93,148
NHS Western Isles	£13,500	£10,350	£2,808	£2,250	£28,908
Scotland	**£1,363,500**	**£1,045,350**	**£283,608**	**£227,250**	**£2,919,708**

*Costs are calculated from the number of pumps required in each NHS Board area in order to provide the second 50% of the 909 pumps required.

The above table shows the estimated costs in 2014/ 2015 of providing the remainder of the 909 pumps required to provide 2000 pumps by March 2015 on a NHS Board basis. These costs include ongoing consumables and insulin costs for those pumps provided in the previous year 2013/2014.

The funding set out in tables 5 and 6 above shows the estimated funding that should be set aside by each NHS Board from their 2013/2014 and 2014/2015 funding allocations, and should be used for the sole purpose of providing the number of extra pumps required locally. The precise amount of funding that will be required to be set aside will depend on the level of provision achieved in each board in each year.

Table 7 below shows the **total** estimated cost of delivering this Ministerial commitment, including the pump and consumables costs that will be met by Scottish Government in 2012/13.

Table 7: The total estimated cost of providing 25% of <18 yrs and 2000 pumps in total by March 2015

NHS Board	Total cost for 2012/ 2013. *Cost based on cost of pump, initiation and consumables and insulin for 1 year for <18s*	Total cost for 2013/ 2014. *Cost based on cost of pump, initiation and consumables and insulin for 1 year for >18s*	Total cost for 2014/ 2015. *Cost based on cost of pump, initiation and consumables and insulin for 2 years for >18s*	Total cost to meet Ministerial commitment over three years
NHS Ayrshire & Arran	£192,680	£239,824	£334,048	£766,552
NHS Borders	£9,634	£0	£0	£9,634
NHS Dumfries & Galloway	£86,706	£66,874	£93,148	£246,728
NHS Fife	£149,327	£0	£0	£149,327
NHS Forth Valley	£154,144	£126,830	£176,660	£457,634
NHS Grampian	£269,752	£267,496	£372,592	£909,840
NHS Greater Glasgow & Clyde	£476,883	£680,270	£947,540	£2,104,693
NHS Highland	£245,667	£152,196	£211,992	£609,855
NHS Lanarkshire	£476,883	£309,004	£430,408	£1,216,295
NHS Lothian	£250,484	£145,278	£202,356	£598,118
NHS Orkney	£0	£11,530	£16,060	£27,590
NHS Shetland	£19,268	£9,224	£12,848	£41,340
NHS Tayside	£0	£66,874	£93,148	£160,022
NHS Western Isles	£24,085	£20,754	£28,908	£73,747
Scotland	**£2,355,513**	**£2,096,154**	**£2,919,708**	**£7,371,375**

Savings from multiple dose injection

The above table shows the total estimated cost of providing 25% of <18 yrs and 2000 pumps in total by March 2015 on a NHS Board basis. These costs include ongoing consumables and insulin costs for those pumps provided in the year 2013/2014, but do not include potential savings resulting from not delivering multiple dose injections (MDI) to those initiated on to pumps. The following table sets out the total potential savings to Boards through not delivering multiple dose injections each year.

Table 8: potential savings from MDI

Total potential savings for 2012/ 2013. (487 people no longer on MDI)	Total potential savings for 2013/ 2014. (454 people no longer on MDI)	Total potential savings for 2014/ 2015. (909 people no longer on MDI)	Total potential savings over three years
£423,474	£393,597	£787,194	**£1,604,265.00**

Action Plans

We recognise that the establishment of targets for insulin pump provision will be challenging for some boards however, the Ministerial commitment to increase pump provision applies to all NHS boards.

We are aware that there are a number of potential barriers to achieving the commitment, including:

- **Staff capacity** – the number of staff required to induct people on to a pump and provide the associated follow up and support;
- **Service infrastructure** – in some board areas there may be a requirement to a launch a new services; and,
- **Staff expertise** – the availability of education and staff expertise in insulin pump therapy.

Boards that do not currently have a paediatric pump service may have to develop one. In the case of the island boards, they might need to ensure that their young people can access pumps through other boards.

We should recognise that a number of Boards (Fife, Tayside, Lothian and Borders) have already developed high quality pump services, and there is an opportunity to promote and share best practice.

NHS Boards moving from low to high volume insulin pump provision should also see opportunities for driving efficiencies, for example, through the introduction of group education and pump initiation. In addition services can expect to see the quality of pump services improve through the increase in clinical experience and expertise associated with delivering higher volumes.

National Procurement is scoping an exercise on insulin pump therapy for November 2012 which is expected to support Boards in investing further in pump therapy.

NHS Boards are therefore required to develop local action plans which identify the risks to achieving their insulin pump targets, including capacity, infrastructure, staff resources and training risks. Boards will want to ensure that their Action Plan directly addresses each of these challenges and that their diabetes services are appropriately supported to ensure that they can implement the plan in full.

Given the scale of this challenge, in addition to developing local action plans, Boards may wish to adopt a clear risk management process and consider whether risks to achieving targets ought to be included in their local delivery plans for 2012/13 to 2014/15.

Chief Executives should appoint a senior member of their Executive Team to lead on this work and who will have overall responsibility for achieving local targets. **The Executive Team lead should provide a copy of their Action Plan to Helen Stevens from Scottish Government Health Directorates Healthcare Planning Division (helen.stevens@scotland.gsi.gov.uk) by Friday 23 March 2012.**

The Executive Team Leads should also provide an indication of the number and type of pumps that each NHS Boards requires to be purchased by Scottish Government for use in 2012/2013 to Helen Stevens as soon as possible and no later than 15 March 2012.

Healthcare Planning Division
Cancer & Long Term Conditions Unit
February 2012

ANNEX B

Assumptions used in Insulin Pump costs

Cost Details	Adult >18	Child<18
Pump costs*	£2,300	£2,300
Consumables	£1,500	£1,500
Insulin	£312	£312
Staff Costs	£500	£705
Structured Education	£408	na
Total cost of Pump initiation (not including Structured Education)	**£4,612**	**£4,817**
Savings through not delivering MDI:		
Consumables	£400	£400
Insulin	£466	£466
Total Saving	£866	£866
Total cost of Pump initiation including MDI savings (not including Structured Education)	**£3,746**	**£3,951**

Education Costs

Children (<16 years old)			
	Diabetes nurse specialist	**Specialist Diabetic Dietician**	**Consultant**
First visit	2		
Second visit	0.5		
Third visit	0.5		
Pump start to week 4	15		
at 4 weeks	1		
Total	19	0.5	0.5
Hourly rate	£34.16	£28.61	£82.32
Support for new adults receiving CSII			
FROM DAY 1 USING GLASGOW PATHWAY exclude carbo count			
Pathway for pump therapy	**Specialist Diabetic Nurse**	**Specialist Diabetic Dietician**	**Consultant**
day 1	4		
day 2	0.5		
day 3	2		
during 1 week	0		
week 1-2	2		
week 4	2		
week 8-12	2		
pump clinic	0.5	0.5	0.5
Total	**13**	**0.5**	**0.5**
Hourly cost	£34.16	£28.61	£82.32