



# Post MI LVSD 'Teach and Treat'

Scottish Heart Failure Nurse Forum  
GJNH, Sept 2017

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**Consultant Cardiologist**  
**Clinical Lead, National Heart Failure Hub**

- **Left ventricular systolic dysfunction (LVSD) post myocardial infarction (MI) independently predicts mortality<sup>1</sup>**
- **Appropriate use of angiotensin converting enzyme inhibitors (ACEIs), beta-blockers ( $\beta$ Bs), and mineralocorticoid receptor antagonists (MRAs) significantly improves outcomes<sup>2</sup>**

1) . Velazquez E.J., et al. An international perspective on heart failure and left ventricular systolic dysfunction complicating myocardial infarction: The VALIANT registry. *Eur. Heart J.* 2004 25(21):1911-1919

2) Ponikowski P., et al. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *Eur. Heart J.* 2016;37(27):2129-2200m

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  3. **Pharmacist approached by Cardiologist**



- **All patients with acute MI identified and reviewed during admission by cardiac rehab (usual care)**
- **Echo undertaken during admission (usual care)**
- **Patients with asymptomatic mod or severe LVSD referred to pharmacist clinic for optimisation of 2ary prevention**
- **Results collated in database and subjected to regular audit**

- **Pharmacist reviewed patients a mean 4.6 times.**
- **Significantly more patients were treated with**
  - Beta-blocker compared to 'usual care'; 96.1% vs 82.5% ( $p=0.025$ )
  - MRA compared to 'usual care'; 49.0% vs 24.6% ( $p=0.008$ )
- **More patients were treated with ACEI compared to 'usual care', this was not statistically significant;**
  - 94.1% vs 89.5% ( $p=0.383$ ).
- **Mean doses of medication compared to 'usual care' (expressed as a % of ESC guideline target dose) were significantly higher:**
  - ACEI; 71.7% vs 43.8% ( $p<0.001$ )
  - Beta-blocker; 55.9% vs 30.9% ( $p<0.001$ )
  - MRA; 35.3% vs 15.8% ( $p=0.006$ )

- **Dovetail with new Scottish Government Pharmacy Vision- 'Prescription for Excellence' <sup>1</sup>**
  - '.....in the management of long term conditions pharmacy will work in partnership with the medical profession so that post diagnosis caseloads can be allocated to these pharmacists.....'
- **Short term funding secured from NHS Education for Scotland (NES)**
- **Long-term NHS Greater Glasgow & Clyde 'buy in'**
  - City-wide coverage
  - Widen service to include all grades of LVSD (not just moderate to severe as in pilot)

1. Prescription for Excellence: A Vision and Action Plan for the right pharmaceutical care through integrated partnerships and innovation. September 2013. Scottish Government. Crown Copyright. Available from URL: <http://www.gov.scot/resource/0043/00434053.pdf>

Training will be delivered according to the needs of the particular type of pharmacist involved (e.g. community or GP-based)

Training may include the following aspects:

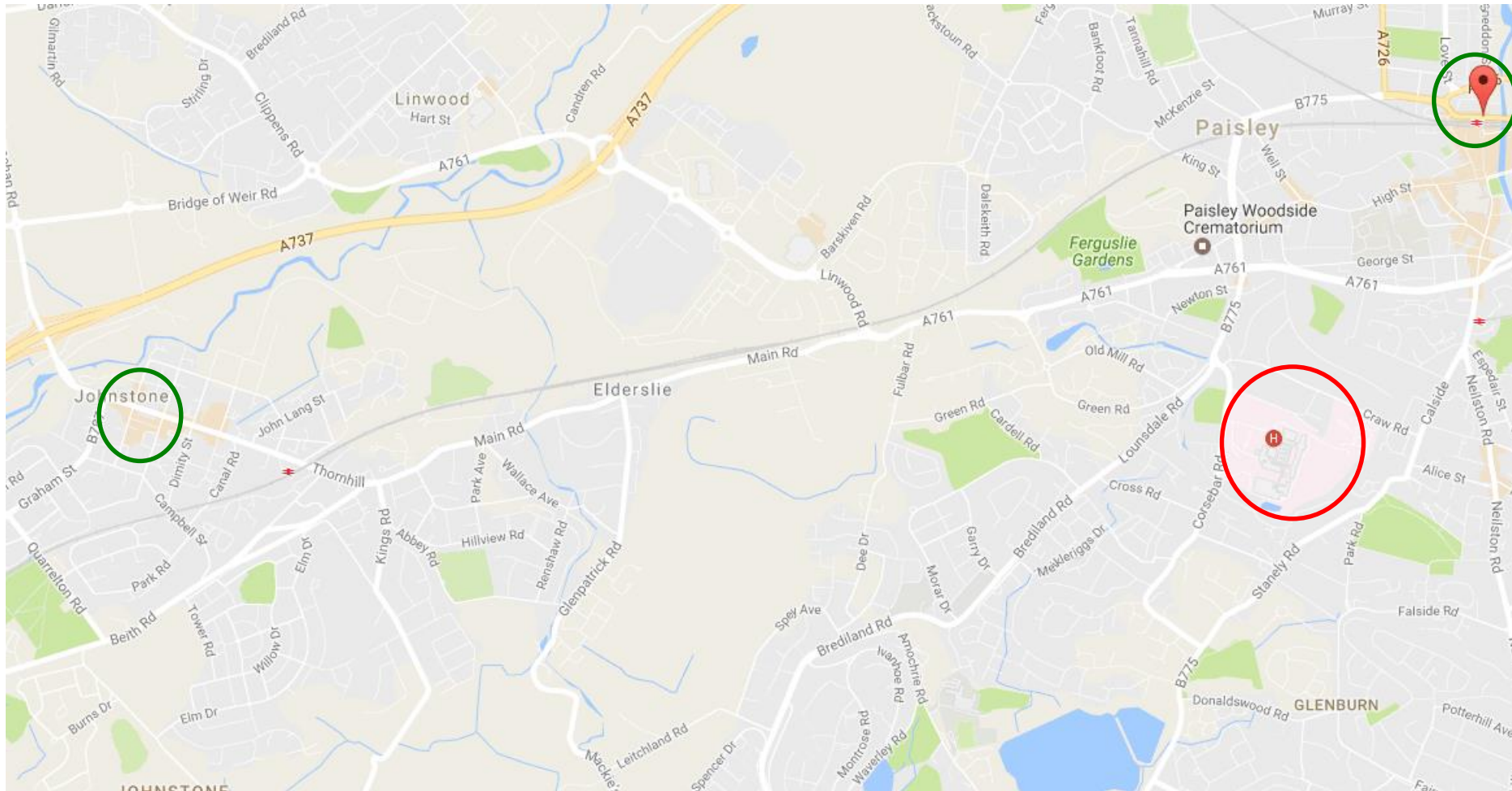
- 3 day clinical skills training course
- Lectures / workshops
- Venepuncture training
- Shadowing
  - CCU ward rounds
  - Consultant cardiologist clinics
  - Specialist cardiology pharmacist clinics
  - Other cardiology teams (e.g. cardiac rehab)

Some form of assessment will also be undertaken, including:

- OSCE + MCQ
- Supervision of practice

- **'Uncomplicated' Patients: General Practice Based Pharmacists (e.g. Health Centres etc)**
  - ACEI (or ARB)
  - Beta-blocker
  - DAPT
  - Lipid lowering medication
  - BP lowering medication
- **'Complex' Patients: Specialist pharmacist clinic, under governance of consultant**
  - MRA
  - Anti-anginals
  - Ivabradine
  - Re-echo up-date ECG for devices consideration (e.g. CRT / ICD)
  - Onward referral to HF nurses for patients with significant (e.g. fluid overloaded, NYHA 3 etc) or persistent symptoms
- **Specialist pharmacists provide governance and support to general practice based pharmacists**

# Example: Royal Alexandra Hospital Area Clinics



**Secondary care specialist clinic (complex patients)**

**Primary care clinics (straightforward patients)**

# Example: Clinic Template on Trakcare

Care Provider	Description	Clinic Location	Day	Date	Time From	Time To	Appointments Booked	Overbookings	Vacant	Attended	Did Not Attend	Message	Add/Edit Message	Reason for Variance
Pharmacist Paul Forsyth	RAPFCA4-PHARMACIST P FORSYTH TUES PM CLINIC	Desk 2 Outpatients Department Royal Alexandra Hospital	Tuesday	09/05/2017	13:30	16:15	8	1	2	2				

**Session Appointment List**

Date:  < Prev   Next >

Search For CHI:

< Prev Day   Next Day >

Reset   Find

Session Description: RAPFCA4-PHARMACIST P FORSYTH TUES PM CLINIC

Session Message:

Resource: Pharmacist Paul Forsyth

Clinic CP Seeing Patients: Tuesday

Day: Tuesday

Session: None 13:30 16:15 RAPFCA4-PHARMACIST P FORSYTH TUES PM CLINIC Multi Slot Override

Hide Closed Slots:

Select	Icon Profile	Time	CHI	Surname	Forename	DOB	Gender	Appointment Type	Slot Services	Status	Arrived	Appt Offers	Transport	Outcome	Previous Cancellations (Hospital Initiated)
<input type="checkbox"/>		13:30					Female	R PHARMACIST	Slots=0	Arrived	<input checked="" type="checkbox"/>			Re-booked	
<input type="checkbox"/>		13:45					Male	R PHARMACIST	Slots=0	Arrived	<input checked="" type="checkbox"/>			Re-booked	
<input type="checkbox"/>		14:00					Male	R PHARMACIST	Slots=0	Arrived	<input checked="" type="checkbox"/>			Re-booked	
<input type="checkbox"/>		14:15					Male	R PHARMACIST	Slots=0	Arrived	<input checked="" type="checkbox"/>			Re-booked	
<input type="checkbox"/>		14:30					Male	R PHARMACIST	Slots=0	Arrived	<input checked="" type="checkbox"/>			1B- Treatment previously started	
<input type="checkbox"/>		15:00					Male	R PHARMACIST	Slots=0	Arrived	<input checked="" type="checkbox"/>			Re-booked	
<input type="checkbox"/>		15:15						R PHARMACIST 1;							
<input type="checkbox"/>		15:30					Male	R PHARMACIST	Slots=0	Arrived	<input checked="" type="checkbox"/>			Re-booked	
<input type="checkbox"/>		15:45					Male	R PHARMACIST	Slots=0	Arrived	<input checked="" type="checkbox"/>			Re-booked	
<input type="checkbox"/>		16:00					Female	R PHARMACIST	Slots=0	Arrived	<input checked="" type="checkbox"/>			1B- Treatment previously started	

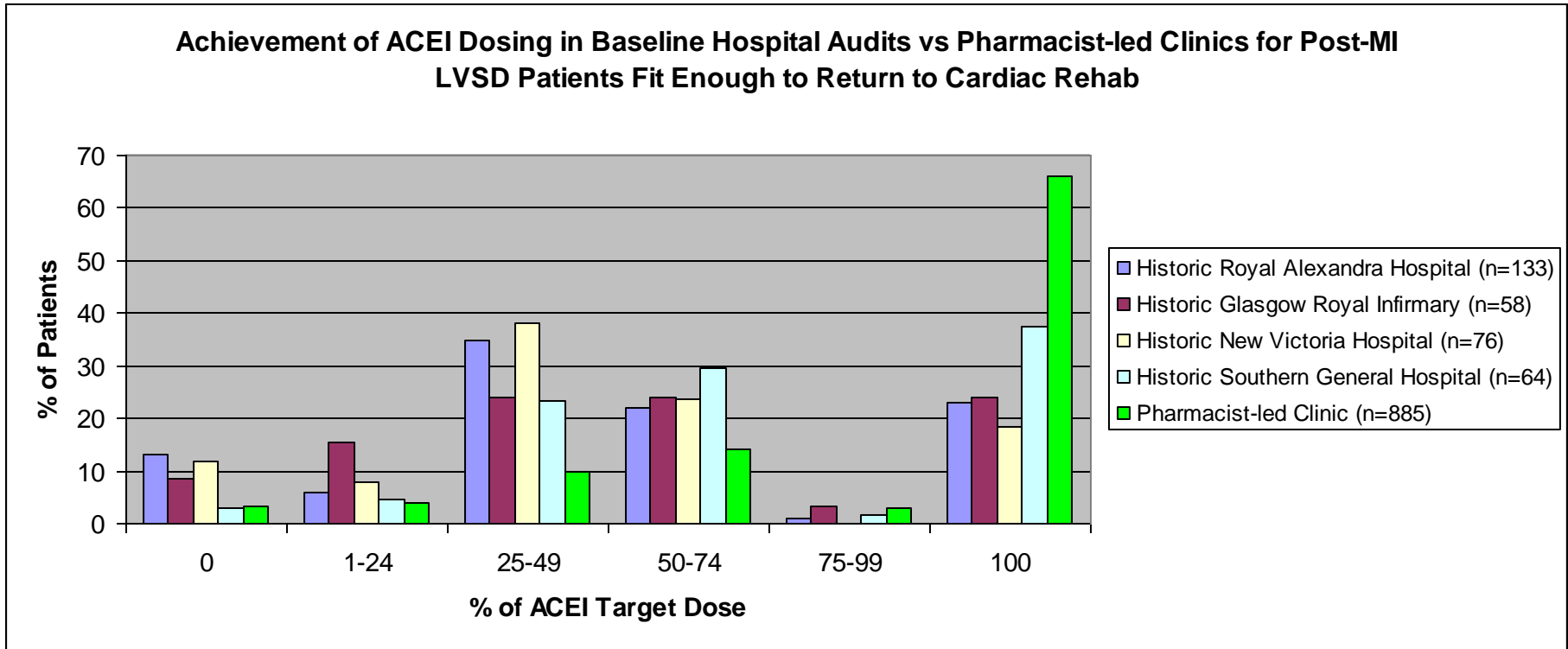
- **15 minute appointment slots**

- History
- Clinical examination, including manual BP/pulse, chest auscultation
- Venepuncture
- Hand written prescription

# Year 4 Results

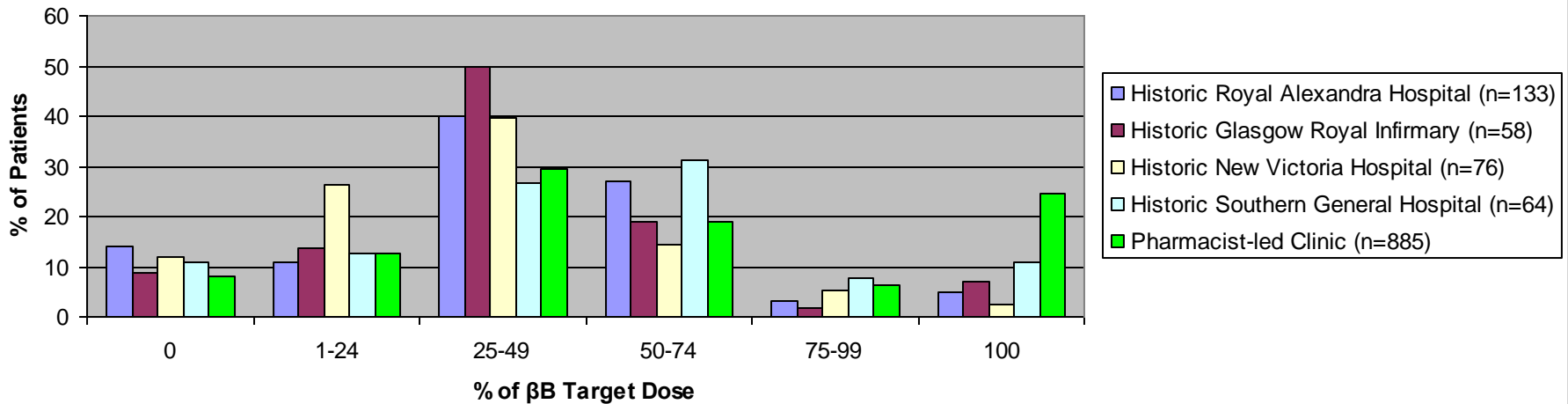
Baseline characteristics	Phamacist clinic
Age	62yrs
Mean creatinine, BP, Heart Rate	86umol/L, 123/72mmHg, 66bpm
Type of MI:- STEMI NSTEMI	57% 43%
LVSD severity: Pres, Mild, Mod, Sev	Pres 2%, Mild 44%, Mod 48%, Severe 6%
NYHA 1, 2, 3, 4	66%, 30%, 4%, 0%
Hypertension AF Diabetes COPD Asthma	34% 5% 17% 9% 10%
MI to referral	Median of 10 days
Referral to review	Median of 14 days
Review to DC	Median of 49 days





- **Critical mass needed to evaluate morbidity/mortality outcomes**

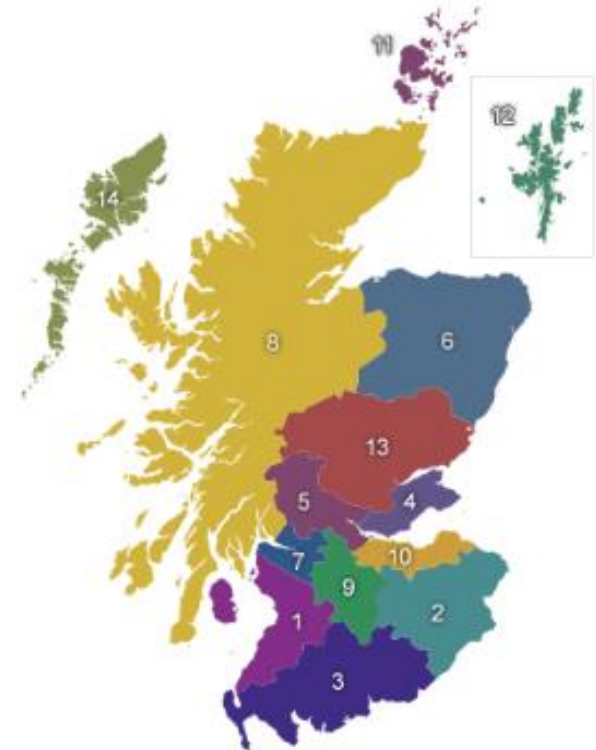
**Achievement of  $\beta$ B Dosing in Baseline Hospital Audits vs Pharmacist-led Clinics for Post-MI LVSD  
Patients Fit Enough to Return to Cardiac Rehab**



- **GGC population size 1.3 Million**
- **7 weekly specialist pharmacist clinics at:**
  - RAH
  - VOL
  - GRI
  - Yorkhill
  - VIC
  - QEUH
  - Inverclyde
- **9 primary care pharmacists trained and accredited to accept referrals from GGC hospitals**

# Next steps: Scotland-wide roll-out

- **Funding (start up costs for one year) secured from NHS NES for national roll-out**
  - Plan supported by Scottish Government National Advisory Committee for Heart Disease
  - Plan to roll-out to two Board areas per year
- **NHS Highland**
  - Clinics starting Sept 2017
- **NHS Tayside**
  - Clinics starting late 2017



- 1 NHS Arran and Ayrshire
- 2 NHS Borders
- 3 NHS Dumfries and Galloway
- 4 NHS Fife
- 5 NHS Forth Valley
- 6 NHS Grampian
- 7 NHS Greater Glasgow and Clyde
- 8 NHS Highland
- 9 NHS Lanarkshire
- 10 NHS Lothian
- 11 NHS Orkney
- 12 NHS Shetland
- 13 NHS Tayside
- 14 NHS Western Isles

# Next steps: Blueprint for pharmacy

## Modern Outpatient Programme

The Modern Outpatient Programme is seeking to transform peoples' experiences by optimising the roles of all clinicians, utilising new technologies and putting the person at the centre of their care. It is being progressed over a three-year time period, building on the direction set within the Primary Care Transformation Programme and the National Clinical Strategy.

Hospital pharmacy teams are already considering opportunities to redesign their services with a clear focus on emerging clinical roles within acute services. These include better targeting of unscheduled acute high risk groups, better use of pharmacist independent prescribers in specialist clinics both in secondary and primary care and wider access to specialist support with the wider expansion of Teach and Treat clinics in primary care. These developments will need to be underpinned by improved information sharing and referral pathways.

## Teach and Treat clinics

The first Pharmacy Teach and Treat service started in NHS GCC in 2014. It aimed at optimising people's treatment following a heart attack, utilising the skills of pharmacist independent prescribers (IP). It is widely recognised that best evidence based care for this patient group requires optimising doses of specific medicines. The medicines are initiated in hospital at low doses and should be increased, with supervision and monitoring, over time. Research findings however demonstrated that frequently the medications were not altered as recommended. A pharmacy team were asked if they could help address this locally. Working closely with the multidisciplinary team, the pharmacists instigated pharmacist-led clinics to follow up with people after discharge from hospital. The clinic sessions consist of a 15 minute face-to-face consultation in the out-patients department. The consultations include taking a clinical history, appropriate blood tests, blood pressure measurement and a physical examination including chest auscultation. Following assessment, the pharmacist IP optimises the medicines, issues a prescription and arranges a follow up.

# Acknowledgements and very sincere thanks to:-

- **Paul Forsyth: Pharmacist programme lead**
- **Anne Watson: Director of Pharmacy, NHS Education for Scotland**
  
- **Secondary Care Pharmacists:**
- **Iain Speirits, Lynsey Moir, Steve McGlynn, Stewart Cusick, Pernille Sorensen and Joanne Berrich**
  
- **Primary Care Pharmacists:**
- **Elizabeth Russell, Louise Connolly, Lynsey Foot, Adrienne Fraser, Clodagh Clarke, Sandra Cahill, Laura Laing and Allison Atkinson**