**Hypertension Quality Improvement Project**

Service Improvement project led by

Dr John Gnanakumar

Under supervision of Dr Majid Akram

The Deepings Practice

Why?

* First audit showed not all patients had all the investigations recommended by NICE when diagnosed with hypertension.
* Reducing the amount of ECGs and blood test for

patients with normal ABPM.

We were previously doing ECGs in all patients at the point of conducting ABPM which was unnecessary.

* Reducing the number of appointment and messages for patient with normal ABPM that were sent to GPs.
* Optimise patient care in line with guidance.
* Faster review and titration of medication
* Reduce burden on reception and secretaries for letters and appointment.

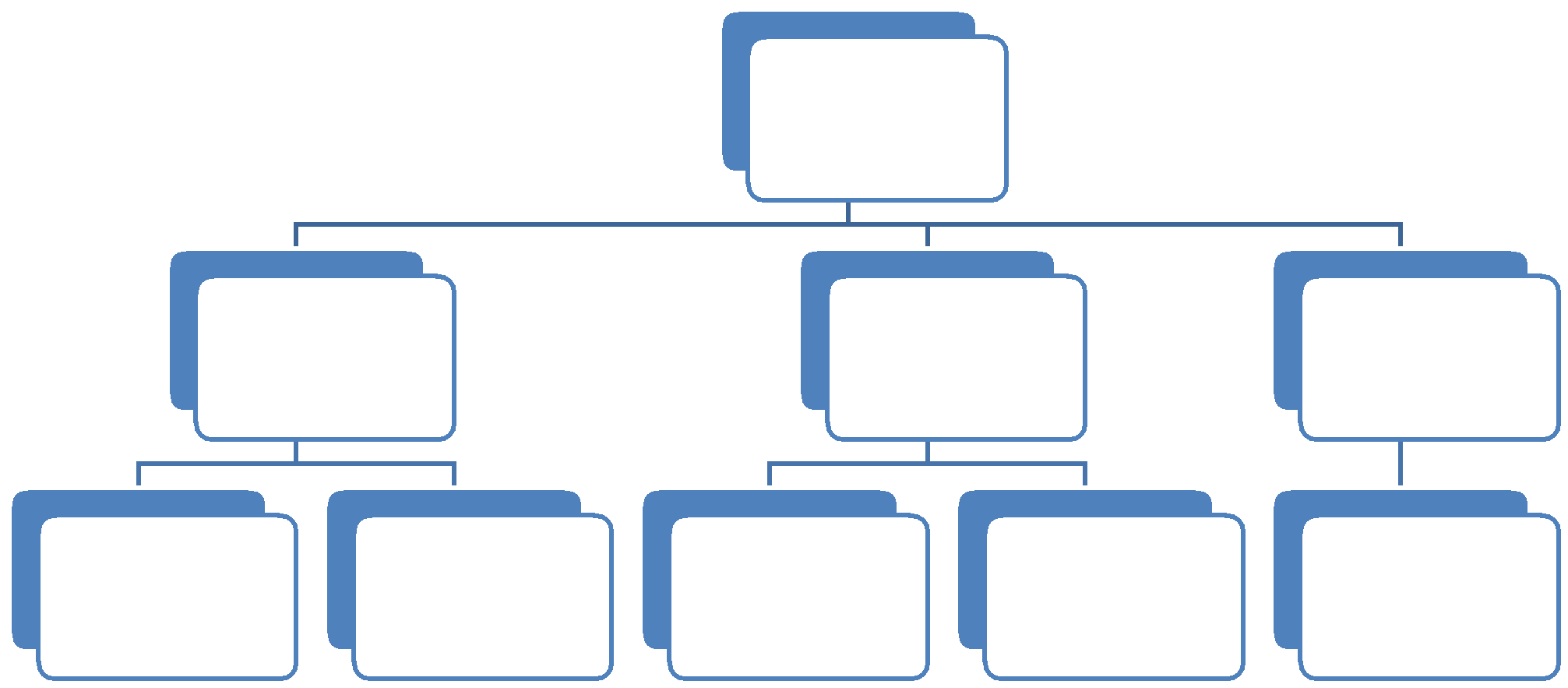
Pathway for new Hypertension

diagnosis and management

ABPM

* Patient will have blood pressure checked by GP or nurse or get BP self check in the waiting room
* If BP higher than 140/90 will need to book an appointment for ambulatory blood pressure monitoring (ABPM) or HBPM

ABPM interpretation



ABPM

Normal

<135/85

>= 135/85 >180/110

Offer repeat BP in 5 Give normal AMBP

years letter to patient

<40 yrs

Book appt with GP

(urgent)

>40 yrs old

Routinely do blood

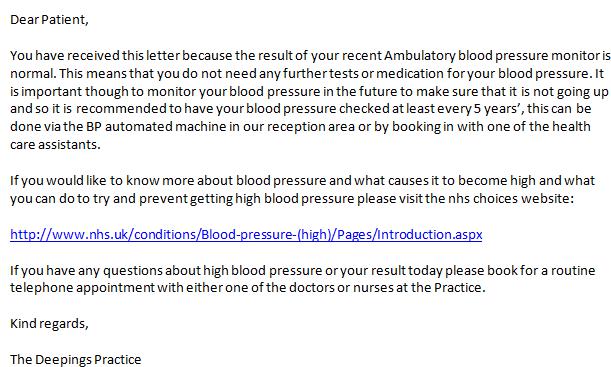
tests\*, urine dip \*, ECG prior to appt with nurse

Urgent Same day GP

review

\*Blood tests: FBC, U&Es, lipid profile, random glucose, LFTs \*After urine dip (looking for blood and protein) send for ACR

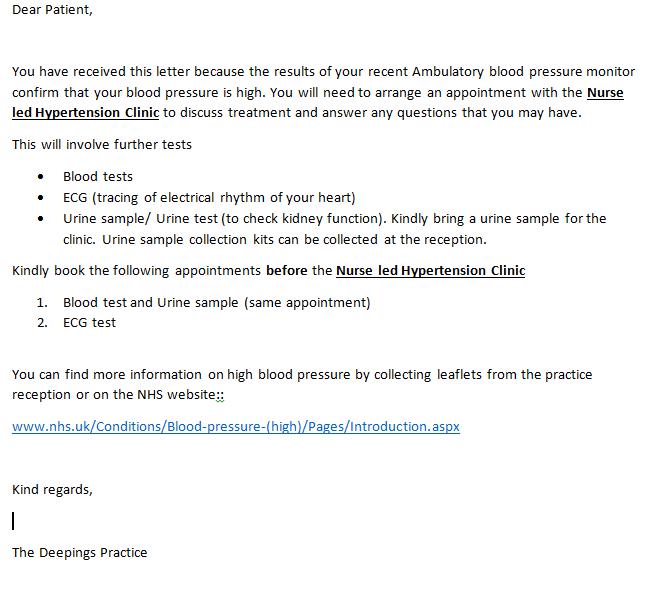
If ABPM Normal



If >40 and ABPM raised

1. Send letter for further investigations prior to Nurse led clinic
2. Use New hypertension template during Nurse led clinic
3. Use treatment algorithm to initiate treatment
4. Follow up in 2 week to ensure BP controlled or up titrate medication

Letter for further investigations



Assessment Of Hypertension

* Ensure delivery of Investigations to assess for target organ damage:

– ECG (e.g. to assess for LVH).

– Urine dip (checking for haematuria) + ACR (checking for AKI/CKD).

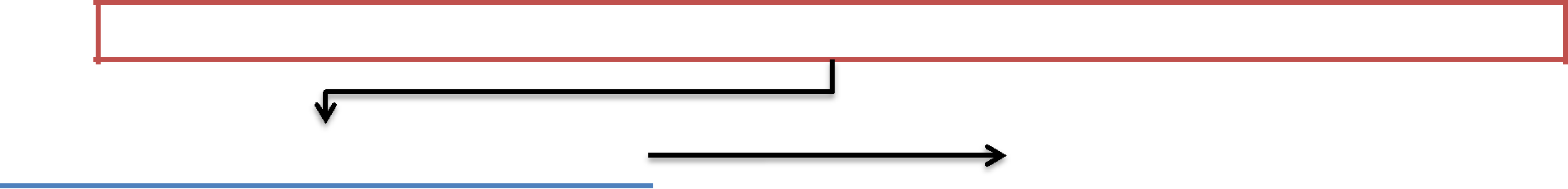
– Fundoscopy (assessing for hypertensive retinopathy).

– CVD Risk (QRISK), check BMI.

– Bloods: Fasting Glucose, serum total and HDL Cholesterol, electrolytes, Creatinine, eGFR.

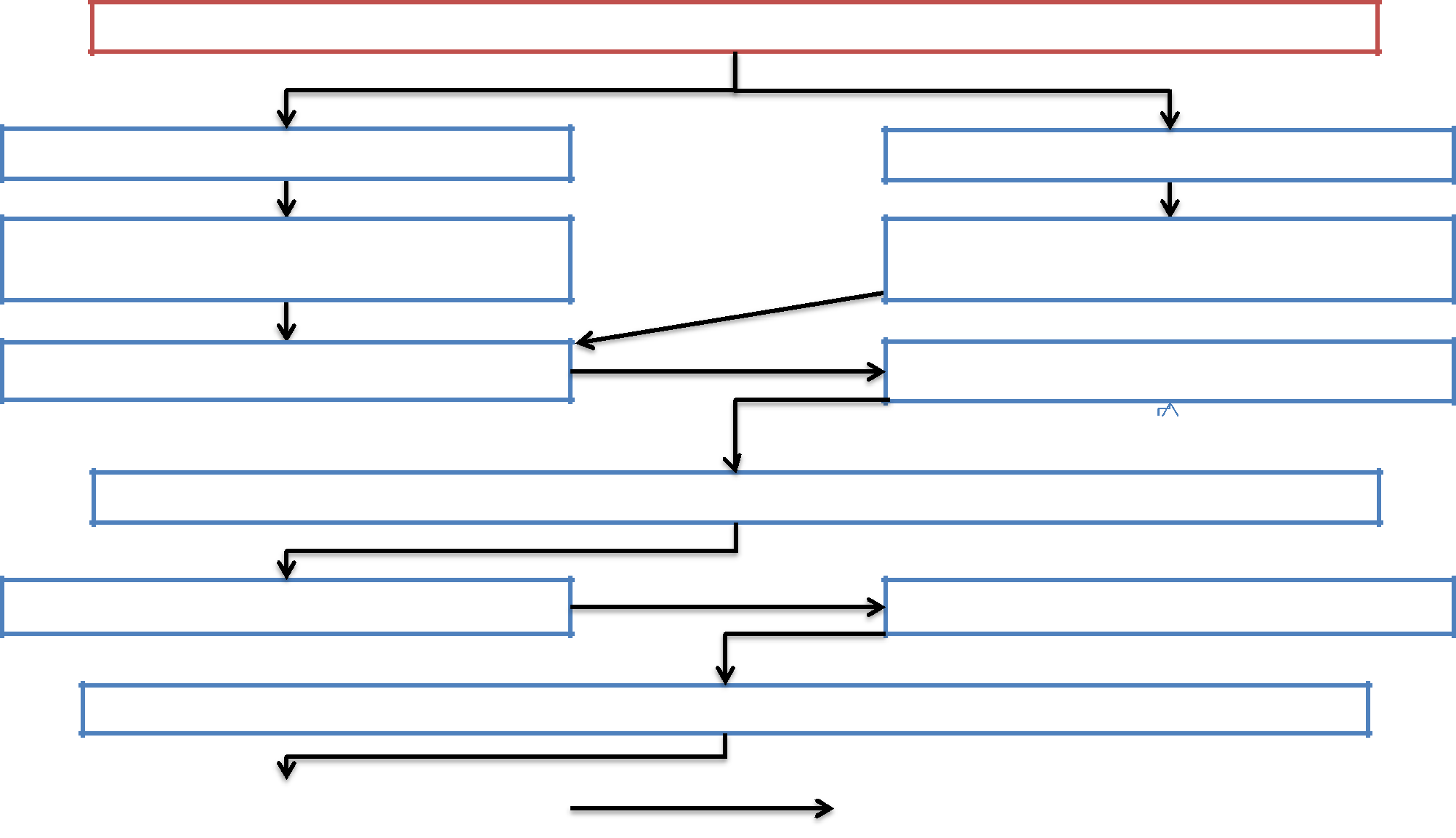
**Hypertension Treatment Algorithm**

If ABPM > 135/85 to < 150/95



|  |  |  |  |
| --- | --- | --- | --- |
| Only start antihypertensive if DM, CKD, | Otherwise | Offer lifestyle advice |  |
| CHD or QRisk > 20% |  |
|  |  |  |

If ABPM ≥ 150/95



<55 years

1. - Ramipril 2.5-10mg

Each time dose titrate check U+Es after 2 weeks

Re-check BP with HCA at 1/12 if BP

>140/90

\*Consider ACEi (ramipril) as 1st line in all diabetics (any age)

>55 years or

Afro-caribbean any age

1. – Felodipine 5-10mg

No need to check U+Es

Advice to book 20 mins HTN appointment

with Nurse

A + C

Advice to book 20 mins HTN appointment

Re-check BP at 1/12 if BP >140/90

with Nurse

A + C + D (D = Indapamide 2.5 mg)

|  |  |  |
| --- | --- | --- |
| Re-check BP at 1/12 if BP >140/90 |  | If remains >140/90 - Refer to GP |
|  |  |  |

Titration and Follow up

(To be used in conjunction with the Hypertension Treatment Algorithm)

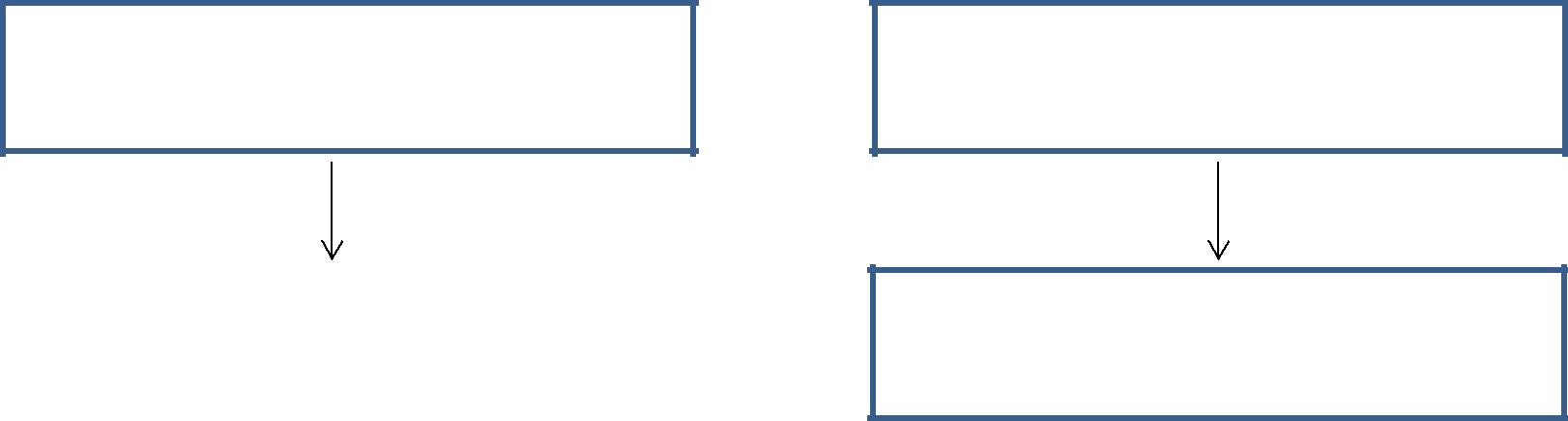
**Titration of dose**

1. Ramipril –2.5mg, 5 mg, 7.25mg and 10 mg
2. Felodipine start with 5mg, build to max dose of 10mg
3. Indapamide – Use 2.5mg once daily dose

**Followup**

1. Repeat BP 1/12 after changing medication
2. U&E’s within 2 weeks of changes to Ramipril or Indapamide

Hypertension treatment algorithm



<55 years

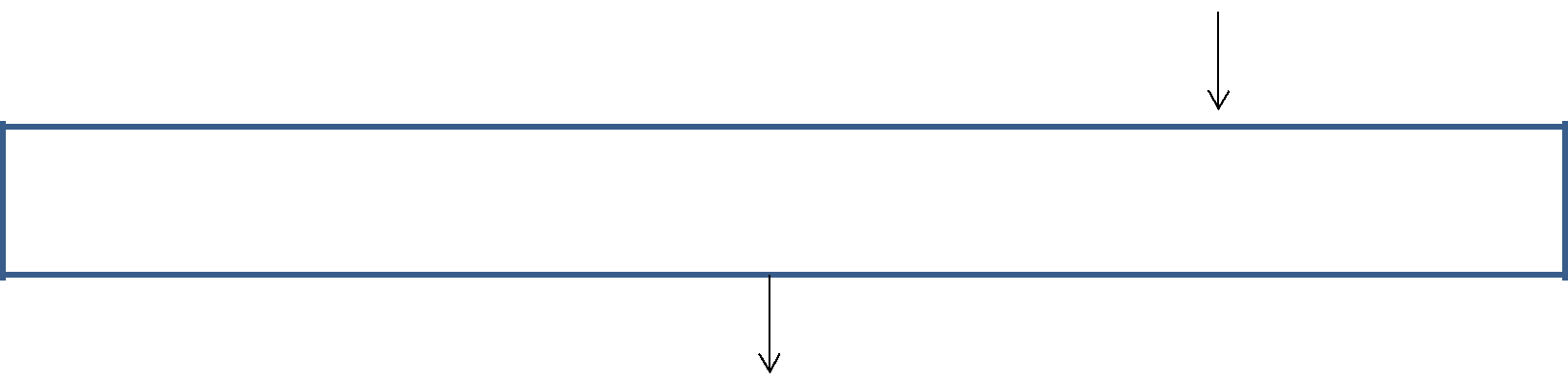
1. – Ramipril 2.5mg-10mg\*



>55 years

or Afro-caribbean any age

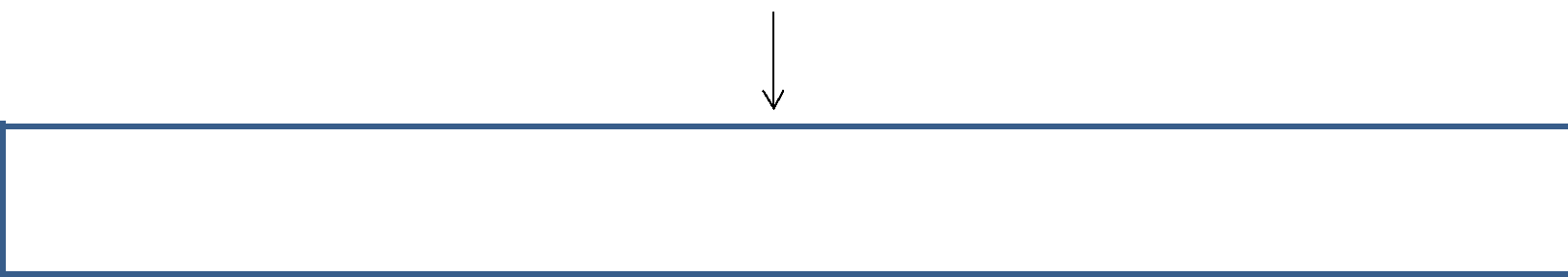
1. – Felodipine 5-10mg Ramipril 2.5mg



\*Consider ACEi (ramipril) as 1st line in all diabetics (any age)

RamiprilA+C2.5mg

A + C + DRamipril(D=indapamide2.5g 2.5mg)



Refer to GP to consider secondary care referral or adding in Beta Ramipril 2.5mg

blocker, alpha blocker or spironolactone

Titration and Followup

Titration of dose

1. Ramipril – 2.5mg, 5 mg, 7.5mg and 10 mg, needs repeat U&E’s within 2 weeks after each dose change
2. Felodipine 5mg and 10mg

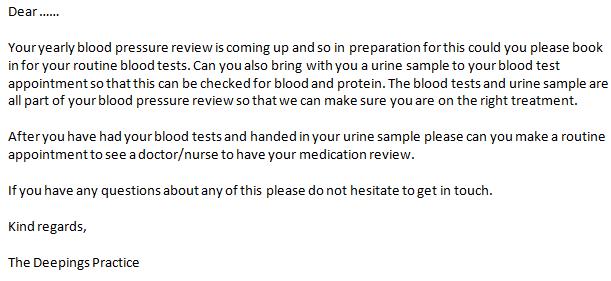
Followup

1. Repeat BP 2 weeks after changing medication
2. U&E’s within 2 weeks of changes to Ramipril or Indapamide

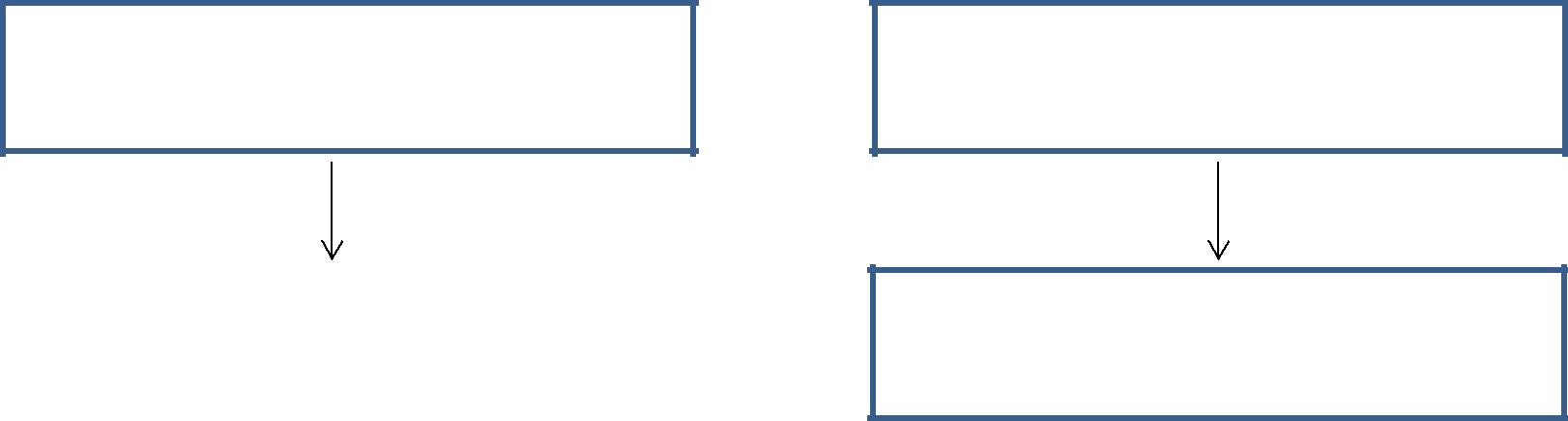
Yearly review

1. Send patient letter for review and investigations prior to Nurse led clinic appointment
2. Use Hypertension Review template on Emis
3. Treat according to algorithm

Review letter



Hypertension treatment algorithm



<55 years

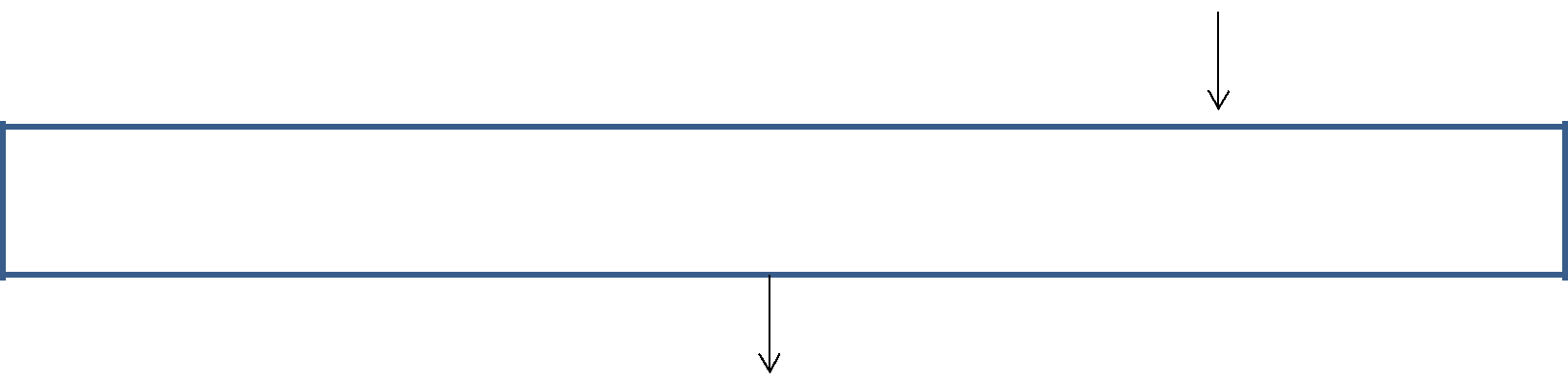
1. – Ramipril 2.5mg-10mg\*



>55 years

or Afro-caribbean any age

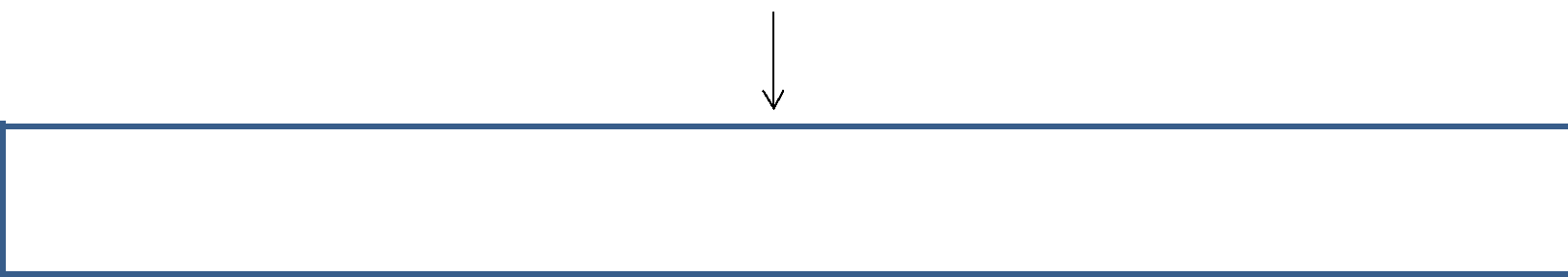
1. – Felodipine 5-10mg Ramipril 2.5mg



\*Consider ACEi (ramipril) as 1st line in all diabetics (any age)

RamiprilA+C2.5mg

A + C + DRamipril(D=indapamide2.5g 2.5mg)



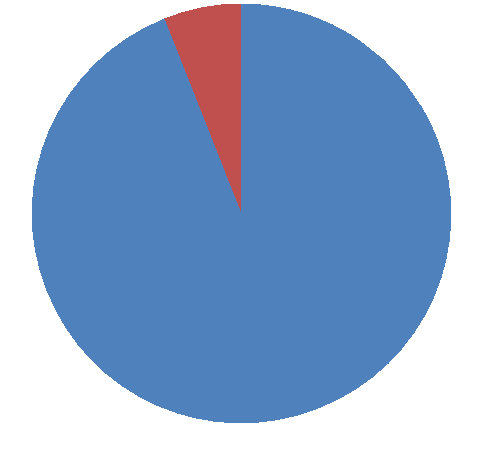
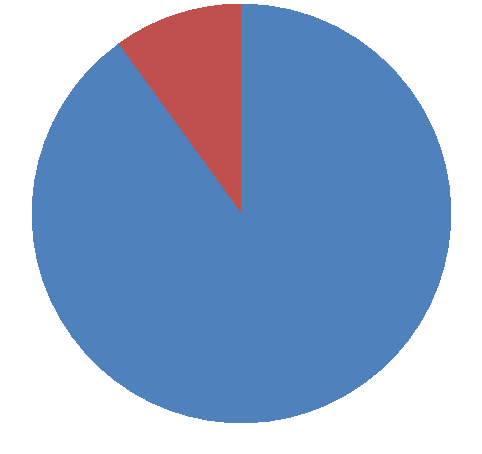
Refer to GP to consider secondary care referral or adding in Beta Ramipril 2.5mg

blocker, alpha blocker or spironolactone

Results – Comparison pre and post

* Patients offered ambulatory blood pressure monitoring

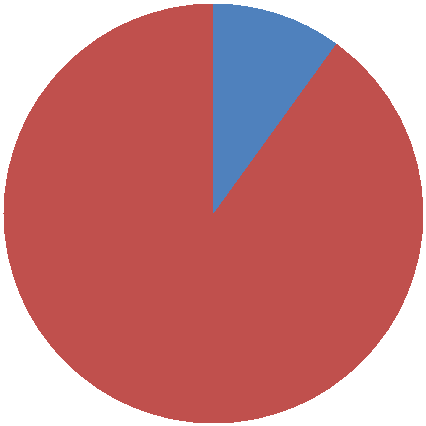
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pre** | | | **Post** | | |  |
| 10% |  |  | 6% |  |  |  |
|  |  |  |  |  |  |
|  |  | Yes |  |  | Yes |  |
|  |  |  |  |  |
|  |  |  |  |  |
| 90% |  | None | 94% |  | None |  |
|  |  |  |
|  |  |  |
|  |  |  |  |  |



Measured urine albumin/creatinine

ratio

**Pre** **Post**



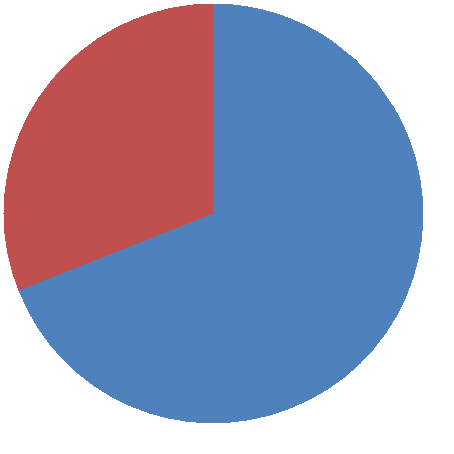
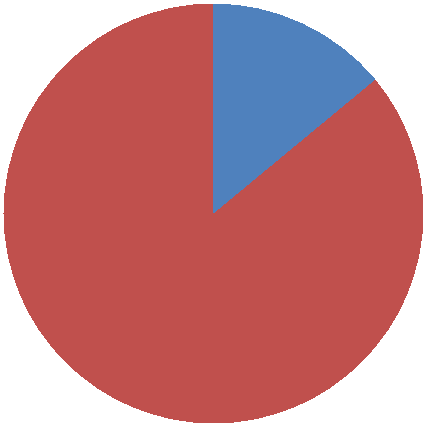
10%

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Yes | 44% |  | Yes |  |
|  |  |  |
| None | 56% |  | None |  |
|  |  |
|  |  |
|  |  |  |  |

90%

Urine dip done

**Pre** **Post**



14%

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 31% |  |  |  |
| Yes |  |  | Yes |  |
|  |  |  |
|  |  |  |
| None | 69% |  | None |  |
|  |  |
|  |  |
|  |  |  |  |

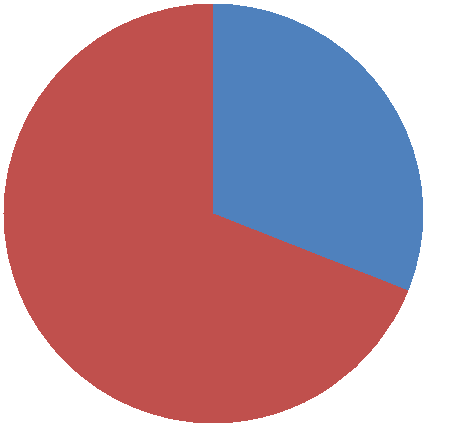
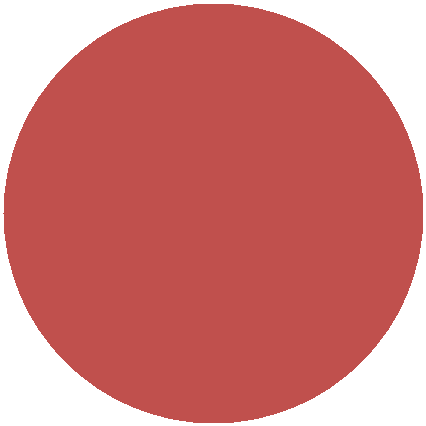
86%

Fundoscopy documented, optician

review advice

**Pre** **Post**

0%



31%

 Yes

 None

69%

100%

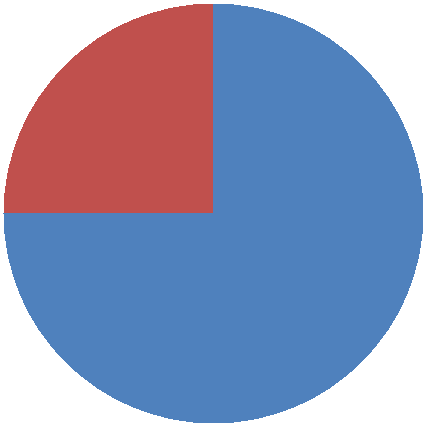
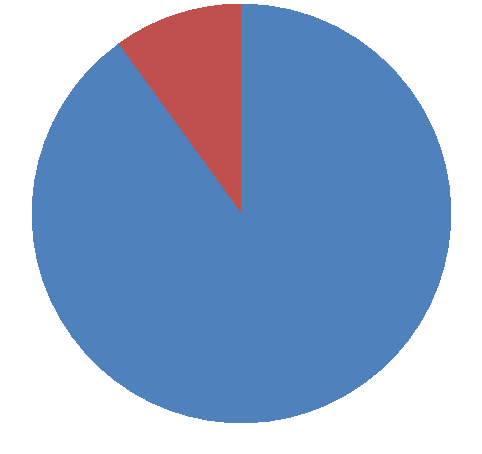
 Yes

 None

ECG done

ECGs were done more appropriatley, and although it shows fewer ecgs after nurse clinic, most patients had prior ecgs for other reasons.

**Pre** **Post**



10%

25%

 Yes

 None

75%

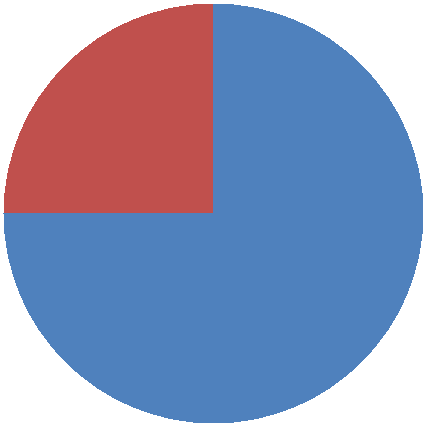
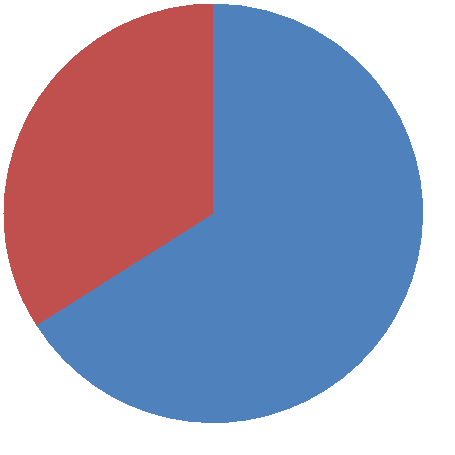
90%

 Yes

 None

Qrisk calculated

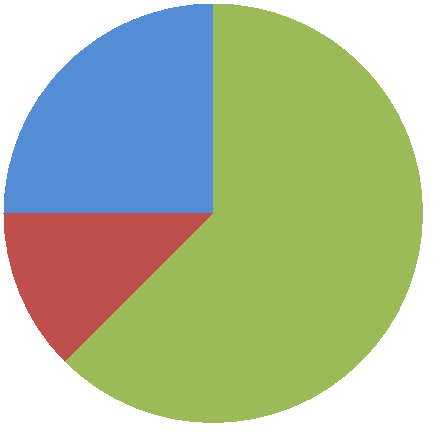
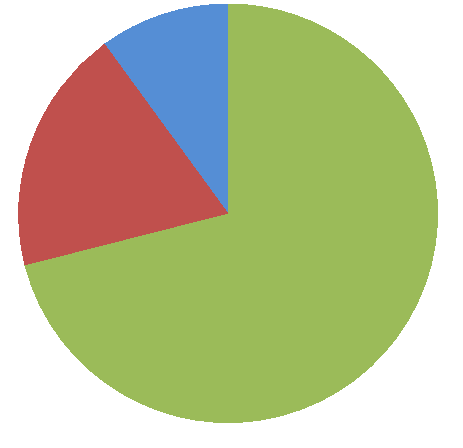
**Pre** **Post**



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 34% |  |  | 25% |  |  |  |
|  |  |  |  |  |  |
|  |  | Yes |  |  | Yes |  |
|  |  |  |  |  |
|  |  |  |
|  |  |  |  |  |
| 66% |  | None |  |  | None |  |
|  |  |  |  |
|  |  |
|  |  |  |  |
|  |  |  |  |  |  |
|  |  |  | 75% |  |  |  |

Blood tests

**Pre** **Post**



10%

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | 25% |  |  |  |  |
| 19% |  |  | Yes |  |  |  | Yes |  |
|  |  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  | None |  |  |  | None |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  | Partial | 13% | 63% |  | Partial |  |
|  |  |  |  |  |
|  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | 71% |  |  |  |  |  |  |  |