Appendix E: *Case Finding* Indicators to prioritise patients for review

This section is to support prioritising patients for review. The following case finding criteria provide a high level strategic classification:

A. Aged 50 years and older and resident in a care home, regardless of the number of medicines prescribed
B. Prescribed 10 or more medicines (this will identify those from deprived communities where the average age is lower when taking 10 or more medications)
C. On high-risk medication (as defined by the *Case Finding* indicators (see below), regardless of the number of medicines taken
D. Approaching the end of their lives: Adults of any age, approaching the end of their life due to any cause, are likely to have different medication needs, and risk versus benefit discussions will often differ from healthy adults with longer expected life spans

If is not realistic to review all of these patients immediately the above criteria can be further stratified by:

- **Age** (e.g. 75 years and over, then 65 years and over as resource allows)
- **Frailty** (e.g. HIS Frailty / SPARRA score) – use the score which has been agreed by your organisation
- **Dominant condition** (e.g. dementia) – certain conditions dominate patient care as they impact and inform decisions for all other conditions

There has been further development of using high-risk medication measures to develop a suite of 69 *Case Finding* prescribing and monitoring indicators. Many of these measures can be also used as *Clinical Outcomes* indicators, where a fall in the number of patients affected may be seen following intervention (Appendix F). In addition, where the *Case Finding* indicators (27 indicators) utilise patient level prescribing data (PIS) the measures can be used to identify prevalence figures (Table E1).

Table E1: Prevalence from Validated *Case Finding* indicators (PIS Data)

Composite Indicator	Measure	Denominator	2017 Q1	% of Denominator
1. Cardiac decompensation and/or bradycardia	d. Patient prescribed nitrate and phosphodiesterase type-5 inhib.	Of all people prescribed a nitrate	1332	1.58
	h. Patient prescribed beta-blocker and verapamil/diltiazem	Of all people prescribed a beta-blocker	2889	0.72
2. Bleeding	c. Patient prescribed aspirin and another antiplatelet without gastroprotection	Of all people prescribed aspirin	6167	2.25
	d. Patient prescribed oral anticoagulant and antiplatelet	Of all people prescribed an oral anticoagulant	6334	6.51
	i. Patient ≥75 years prescribed an NSAID without gastroprotection	Of all people ≥ 75 years	5421	1.28
	k. Patient prescribed antiplatelet and NSAID	Of all people prescribed an antiplatelet	18992	5.22
	l. Patient prescribed oral anticoagulant and NSAID	Of all people prescribed an anticoagulant	1559	1.60
	m. Patient prescribed oral corticosteroids and NSAID	Of all people prescribed an oral corticosteroid	9577	8.62
3. Bone Marrow Suppression	a. Patient prescribed methotrexate without folic acid	Of all people prescribed methotrexate	2689	11.14
	b. Patient prescribed two different strengths of methotrexate tablets	Of all people prescribed methotrexate	266	1.10
	c. Patient prescribed methotrexate with long-term trimethoprim	Of all people prescribed methotrexate	12	0.05
4 – Acute Kidney Injury	a. Patient prescribed ACEI/ARB **and** diuretic **and** NSAID	Of all people prescribed an ACEI **or** an ARB **and** a diuretic	11499	5.97

Composite Indicator	Measure	Denominator	2017 Q1	% of Denominator
	b. Patient ≥65 years prescribed metformin **and** ACEI/ARB **and** NSAID	Of all people prescribed metformin **and** an ACEI/ARB	2417	4.67
5 - Hyperkalaemia	b. Patient prescribed ACEI or ARB **and** potassium supplement	Of all people prescribed an ACEI **or** an ARB	709	0.12
	c. Patient prescribed ACEI **and** ARB	Of all people prescribed an ACEI **or** an ARB	4764	0.81
	d. Patient prescribed all of: (ACEI or ARB) **and** (spironolactone or eplerenone) **and** (aliskiren or potassium supplement)	Of all people prescribed an ACEI **or** an ARB	78	0.01
	e. Patient prescribed all of: (ACEI or ARA) **and** (triamterene or amiloride) **and** (aliskiren or potassium supplement)	Of all people prescribed an ACEI **or** an ARA	9	0.00
10 – Hypoglycaemia	a. Patient prescribed insulin without glucose test strips	Of all people prescribed insulin	7410	12.69
14 – Falls, Fractures and Delirium	b. Patient ≥65 years prescribed THREE or more drugs with sedating or anticholinergic effects (excluding antiepileptics)	Of all people ≥ 65 years	25802	2.85
	d. Patient prescribed steroid long term without co-prescription of a bone protecting agent	Of all people prescribed a steroid long term	16092	54.90
15 – Opioids and gabapentinoid dependency	a. Patient prescribed opioid at dose equivalent to >180 mg morphine per day over last 6 months	Of all people prescribed an opioid	6016	1.11
	b. Patient prescribed gabapentin at dose of >4800 mg per day over last 6 months (or equivalent dose of pregabalin)	Of all people prescribed a gabapentanoid	964	0.65
16 – Seizures and neurotoxicity	a. Patient on lithium prescribed an NSAID	Of all people prescribed lithium	262	4.17
	b. Patient on lithium recently prescribed a thiazide	Of all people prescribed lithium	6	0.10
17 - Extrapyramidal symptoms	a. Patient prescribed levodopa and metoclopramide long term	Of all people prescribed levodopa	16	0.17
	b. Patient ≥65 years prescribed metoclopramide long term[A]	Of all people ≥ 65 years	3802	0.42
	b.(alt) ≥65 years prescribed metoclopramide long term[B]	Of all people ≥ 65 years	2532	0.28

Notes:
A - Long term metoclopramide defined as ≥ 2 dispensings in the 6 month period
B - Long term metoclopramide defined as ≥ 1 dispensings in the most recent 3 month period and ≥ 1 dispensing's in the 3 month period immediately preceding this.

The remaining 42 *Case Finding* indicators utilise diagnosis, examination signs and laboratory data and so cannot be straightforwardly used to identify prevalence figures. They have been grouped as *Composite* indicators to help linkage with other clinical diagnosis data sets such as hospital admission data:

1. Cardiac decompensation and/or bradycardia
2. Bleeding
3. Bone Marrow Suppression
4. Acute Kidney Injury
5. Hyperkalaemia
6. Hypokalaemia
7. Hyponatraemia
8. Hypercalcaemia
9. Hypocalcaemia
10. Hypoglycaemia and Lactic Acidosis
11. Hypotension
12. Stroke / Vascular Events

13. Respiratory Exacerbation
14. Falls, fractures and delirium
15. Opioid and gabapentinoid dependency
16. Seizures and neurotoxicity
17. Extrapyramidal Symptoms
18. Gynaecological Cancer

All 69 *Case Finding* indicators have been developed within the Scottish Therapeutics Utility (STU) and will enable practices to run searches to identify patients for review. A full list of the case finding indicators can be accessed online.

Indicator selection through a consensus process

The consensus process to define the case finding criteria was conducted in 5 steps:

1. A list of candidate indicators was compiled based on previously published indicator sets
2. In the first round, panel members rated each candidate indicator on a 5 point scale (1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree) reflecting their level of agreement with the statement *'It is necessary that a patient triggering on the respective indicator receives a medication review as soon as possible and it would be inappropriate to wait until the next routine medication review'*
3. Panel members met in person for a discussion of first round ratings, informed by a presentation of current evidence and guidance, subsequent to which all candidate indicators were rerated
4. Candidate indicators, for which there was disagreement in the second rating round (defined as >30% of panellists agreeing or strongly agreeing and >30% of panellists disagreeing or strongly disagreeing with the statement) were rerated
5. Indicators that achieved a median rating of 4 or higher without disagreement after three rating rounds were accepted as case finding criteria

Polypharmacy Related Additional Prescribing Measures 2018-19		Desired change in indicator / measure
Cardiovascular	**Oral anticoagulant:** number of patients prescribed an antiplatelet also prescribed an oral anticoagulant but without gastroprotection as percentage of all patients prescribed an oral anticoagulant	↓
Respiratory	**Short Acting Beta-Agonist (SABA) Inhalers:** number of patients prescribed more than 12 SABA inhalers in a year as a percentage of all patients prescribed SABAs	↓
CNS - psychotropic	**Antipsychotics:** antipsychotic prescribing to patients aged ≥75 years as a percentage of all people aged ≥75 years	↓
CNS - analgesic	**Opioid analgesics:** number of patients prescribed average daily dose of opioid equivalent to ≥ 120 mg per day of morphine as a % of all patients prescribed step 2 and strong opioids††	↓↑
	Opioid analgesics: number of patients prescribed strong opioids (including tramadol preparations) long term (>2 years) as a percentage of all patients prescribed strong opioids	↓
	Gabapentinoids: number of people prescribed more than the maximal recommended dose (>2 DDDs) per day of gabapentinoid as a percentage of all people prescribed a gabapentinoids (6 months)	↓↑
CNS - adverse effects	**Anticholinergics:** number of patients aged ≥75 dispensed >10 items of strong or very strong anticholinergics (mARS 3&2) in 12 months as a percentage of all people aged ≥75 years	↓
Antibiotics	**Antibiotics:** number of people > 4 antibiotics per annum per 1,000 LS	↓
	Antibiotics: number of adult women prescribed a 3-day course of acute UTI antibiotics as a percentage of all adult women prescribed acute UTI antibiotics	↑
Antidiabetics	**SMBG**: number of patients prescribed blood glucose test strips who are not prescribed treatments for diabetes (insulins and/or antidiabetic drugs) or are only prescribed metformin as a percentage of all patients prescribed blood glucose test strips	↓
	SMBG: number of patients prescribed insulin not prescribed blood glucose test strips as a percentage of patients prescribed insulin	↓
	Sulfonylureas: number of patients ≥75 years prescribed a sulfonylureas as a percentage of all patients prescribed an antidiabetic drug	↓
	Metformin: number of patients ≥65 years prescribed metformin **and** ACEI/ARB **and** NSAID as a percentage of all patients prescribed metformin and an ACEI/ARB	↓
Musculoskeletal	**NSAIDs:** NSAID prescribing to patients aged ≥65 years prescribed an ACE inhibitor/angiotensin receptor blocker and a diuretic as a percentage of all people aged ≥65 years	↓
	NSAIDs: NSAID prescribing to patients aged ≥65 years prescribed an antiplatelet without gastroprotection as a percentage of all people aged ≥65 years	↓
	NSAIDs: NSAID prescribing to patients aged ≥75 years without gastroprotection as a percentage of all people aged ≥75 years	↓
	NSAIDs: NSAID prescription to patients prescribed an oral anticoagulant without gastroprotection as a percentage of all patients prescribed an oral anticoagulant	↓