NHS Croydon CCG – Capturing and Analysing Clinical Interventions

At NHS Croydon we are engaged in several services which result in health interventions. How we capture and analyse these interventions has been key to determining effectiveness of the services and in turn has provided evidence for continued funding.

Although each service has its own set of documentation for capturing clinical data, we use a common system for analysing and categorising the interventions.

Adapted RiO scoring tool
The Hospital Avoidance Scale within the RiO healthcare management system was adapted by NHS Croydon to provide a simplified health intervention scoring tool (appendix A). Initially it was used to report on the interventions made by the NHS pharmacist working with the Partnership for Older People’s (POP) Service, where its use was essential in ensuring that the pharmacy element of the service continued to be commissioned during the time that the POP bus was in operation.

A qualitative assessment is made of the potential impact of each intervention allowing the assignment of a value of likelihood with regard to the prospect of the intervention preventing a hospital admission. Each intervention is therefore assigned to one of the three categories:

Level 1 = no likelihood     Level 2 = Possible     Level 3 = Likely

Assignment of monetary values to these predictive assessments is used as part of the evaluation of the cost-effectiveness of the service. A cost avoidance figure of £2,800 is attributed to each potentially saved hospital admission (based on the average length of stay for an older person presenting at A&E.) This sum is assigned to each intervention that is individually categorised as a Level 3 intervention. Furthermore, the ‘possible’ nature of the impact of the Level 2 interventions is also attributed a cost avoidance value by equating a total of ten Level 2 interventions to be the equivalent to one Level 3 intervention i.e. each set of ten Level 2 interventions are also attributed a cost avoidance of £2,800.

In addition to the assignment of a level (impact) of intervention, each intervention is also categorised with reference to a list of categories that describe the nature of the intervention see appendices A and B for examples.

Scoring depends on: type of intervention; type of drug; and individual’s co-morbidities.

Examples of RIO interventions

Level 1
Lifestyle advice
Compliance aid to remove medication from a blister
Unnecessary food supplement stopped

Level 2
Long–term steroids: bisphosphonate started
Spacer device added for patient with asthma with poor inhaler technique
Crushing of modified release medication stopped.

Level 3
Insulin instructions changed; resident was being given novorapid despite low blood glucose levels
Elderly patient prescribed SSRI and aspirin, gastro protection started
Diazepam rectal added for patient with poorly controlled epilepsy

We try to operate a system of peer review within and between the different services to maintain the integrity of this scoring system. However this is very time consuming and we would usually do this initially, to check that each of the leads of the services would score the same, but then only when we have ones of which we are not sure. We do check and rescore, where necessary, all those that have been done by other providers e.g. community pharmacists.
A number of other services have now been developed using the adapted RiO scoring tool to measure the impact of interventions. The tool has been further modified as we added additional categories to make it applicable to a wider range of settings; however the use of the tool remains the same and it has played a significant role in securing and maintaining funding for the pharmacy-led projects listed below:

- **Domiciliary Medicine Review Service for housebound** – Provided by community pharmacists
- **Medication reviews in special sheltered housing** – Clinical medication reviews by CCG Pharmacist, who will also aim to resolve any medicine management issues that are identified.
- **Medication reviews in care homes** – As part of a multidisciplinary review of residents in care homes for older people
- **Enhanced dispensing service to care homes** – Community pharmacists provide an enhanced level of information on medicines to care homes they dispense for
- **Practice support pharmacist interventions** – Practice support pharmacists apply the adapted RiO score when recording interventions made while doing medication reviews or other patient specific reviews in GP practices, or when dealing with patient telephone queries. See also Appendix C

**Associated savings – drug costs**
The cost savings of on-going monthly medicines are also calculated; this may arise either through a reduction in dose, discontinuation of an unnecessary medicine or a reduction in excess quantity prescribed. The current drug tariff price is used to quantify these costs. The savings are calculated assuming that the on-going savings will continue for 12 months.

The associated reduction in dispensing fees is calculated, including the savings attributed to the rationalisation of enteral feeds, which can attract multiple dispensing fees.

**Further development of RiO to incorporate delayed admission to care home**

As well as using the adapted RiO score to quantify avoided hospital admissions, we have developed the RiO principle further to score interventions that have delayed an admission to a care home. Scoring of 1 (no likelihood), 2 (possible) and 3 (likely) are used as before and associated cost savings are then applied in the same way. An annual cost saving of £16,500 has been suggested for level 3 interventions that are likely to delay admission to a care home by one year, and for each group of ten level 2 (possible) interventions. However, the figure of £16,500 needs updating as it is based on historic care home costs.
### Appendix A - adapted RiO scoring tool

#### Analysis of interventions

<table>
<thead>
<tr>
<th>Date</th>
<th>No of interventions</th>
<th>Level of intervention</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

| Information on medicines/PILs |  |
| Information on illnesses |  |
| Responding to Symptoms |  |
| Lifestyle advice |  |
| Compliance advice |  |
| Compliance aid recommended |  |
| Side effects advice |  |
| Inhaler technique |  |
| Formulation advice |  |
| Problem with supply of medicines |  |
| Smoking cessation |  |
| Optimising current therapy |  |
| Overdose avoidance |  |
| Identification of interaction |  |
| Incorrect /inadequate directions |  |
| BP check |  |
| BMI measurement |  |
| Falls Prevention |  |
| Medicines administration/recording |  |
| Medicines storage |  |
| Cold chain |  |
| Unnecessary medicine |  |
| Monitoring |  |
| Identified previously unmet need |  |
| Synchronisation of quantities-reduce waste |  |
| Medicines reconciliation post hospital discharge |  |
| Other: Medication Policies | -Medication Audits | -Medication Reviews |

Definitions of interventions are based on adapted RIO rating scale and relate to the likelihood of admission into hospital if the intervention had not happened.

- **Level 1** = no likelihood
- **Level 2** = possible
- **Level 3** = likely

It is estimated that 10% of those receiving level 2 interventions would be considered likely to avoid a hospital admission.

**Interventions summary**

- .... interventions @ Level 2 equivalent to .....at Level 3
- .... interventions @ Level 3

**Total projected savings from hospital admissions = .... x £2800**
Appendix B

Examples of Categorisation of Interventions – Intervention Levels and Descriptors

To assist with such differential categorisation it is often useful to phrase these adjectival categories into a sentence that precisely details the intervention within its specific context.

a) ‘It is *likely* that initiating gastro-protection in the 80 year old patient who was already taking aspirin and was recently prescribed an SSRI will prevent a hospital admission by reducing the risk of bleeding.’ ‘The pharmacist identified a potentially serious side effect.’
   ‘Likely’ = Intervention Level 3
   Intervention Descriptor = “side effects advice”

b) ‘It is *possible* that initiating a bisphosphonate alongside calcium / vitamin D in the 65 year old patient who recently started long-term prednisolone for polymyalgia rheumatica will prevent a hospital admission by reducing the potential for fragility fractures.’
   ‘Possible’ = Intervention Level 2
   Intervention Descriptor = ‘identified previously unmet need’

OR

c) ‘It is *likely* that initiating a bisphosphonate alongside calcium / vitamin D in the frail 70 year old patient who recently started long-term prednisolone for polymyalgia rheumatica will prevent a hospital admission by reducing the potential for fragility fractures, particularly in consideration of her previous history of recurrent falls.’
   here ‘Likely’ = Intervention Level 3
   again Intervention Descriptor = ‘identified previously unmet need’


d) ‘There is *no likelihood* that providing an eye-drop dispenser to enable the patient to self-administer their eye-drops for dry eyes, rather than rely on a family member to administer them, will have prevented a hospital admission.’
   ‘No Likelihood’ = Intervention Level 1
   Intervention Descriptor = compliance aid recommended

OR


e) ‘It is *possible* that providing an eye-drop dispenser to enable the patient to self-administer their non-steroidal anti-inflammatory eye-drops following cataract surgery 24 hours ago, particularly as he has no family, friends or professional carers to support him and he has felt that the drops were landing on his cheek rather than in his eyes since he came back from the hospital, will have prevented a hospital admission.
   here ‘Possible’ = Intervention Level 2
   again Intervention Descriptor = compliance aid recommended
# Appendix C - Medicines management – preventing hospital/care home admission interventions

<table>
<thead>
<tr>
<th>Form Number: <em>(allocated by Admin Team)</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacist:</td>
</tr>
<tr>
<td>Date identified:</td>
</tr>
<tr>
<td>Practice:</td>
</tr>
<tr>
<td>GP:</td>
</tr>
<tr>
<td>Pt ID</td>
</tr>
<tr>
<td>DOB:</td>
</tr>
</tbody>
</table>

## Medication details

## Intervention details i.e. what/when problem identified and what/when action taken:

## What might have happened if you had not intervened?

## GP Comments:

## Outcome:

Advice accepted / not accepted on (date):

Other action taken (state):

**Any associated savings?** If yes calculate annual savings

## Any other comments:

## Health Intervention Score =

<table>
<thead>
<tr>
<th>Score 1h - no likelihood of preventing hospital admission</th>
<th>Score 1c - no likelihood of preventing care home admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score 2h - possibly may prevent hospital admission</td>
<td>Score 2c – possibly may prevent care home admission</td>
</tr>
<tr>
<td>Score 3h - likely to prevent hospital admission</td>
<td>Score 3c - likely to prevent care home admission</td>
</tr>
</tbody>
</table>

**Peer review** on date

Was this at a peer review meeting? Yes / NO

If no state name of person peer review with:

Rescore at peer review:
Query Code
Community Pharmacy
GP Non Interface
GP Interface
Other

Score
1h - no likelihood of preventing hospital admission
2h - possibly may prevent hospital admission
3h - likely to prevent hospital admission
1c - no likelihood of preventing care home admission
2c - possibly may prevent care home admission
3c - likely to prevent care home admission

1 Each service also has additional documentation which is specific to that service
   b) Medication reviews in special sheltered housing – Patient data collection sheet and hospital avoidance data collection form.
   c) Medication reviews in care homes – Care home medication review form, communication sheet
   d) Enhanced dispensing service to care homes – MUR form, waste initiative forms.
   e) Practice support pharmacist – intervention form and query log form – see Appendix C

Please contact Barbara Jesson or Victoria Williams (first name.second name@croydencog.nhs.uk) for further information.

NHS Croydon CCG Medicines Optimisation Team December 2015