

MEDICINE SICK DAY RULES CARDS – INTERIM EVALUATION

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Report produced July 2014

INTRODUCTION

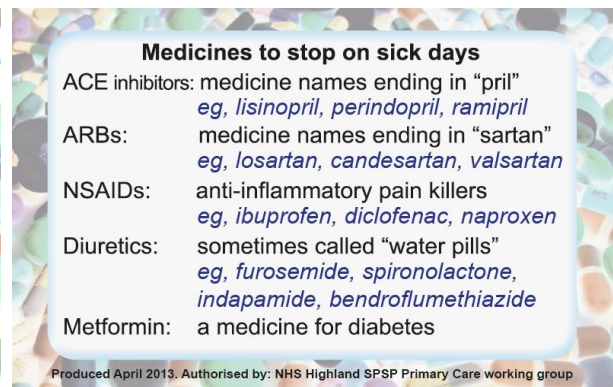
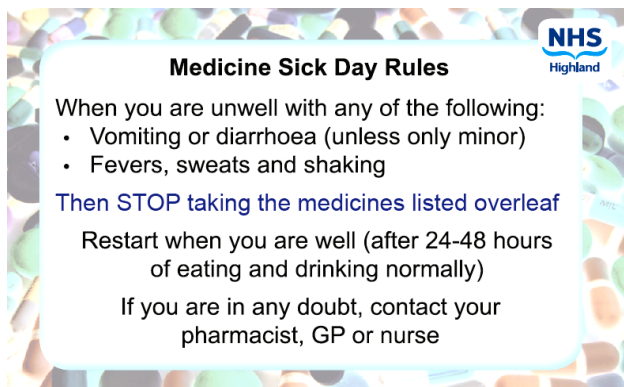
Medicine Sick Day Rules cards are a patient safety initiative.

Dehydration can be a significant risk for people taking certain medicines. If these medicines are continued while a person is dehydrated, there is an increased risk of adverse outcomes. Health professionals are aware of this risk and are advised to stop certain medicines in dehydrated patients. This is highlighted in the NHS Highland polypharmacy guideline which so far has been aimed at health professionals. Patients however are less aware of the risk and therefore this initiative aimed to increase patient awareness of the advice. This is perhaps particularly important in the context of the increasing number of adults on multiple medicines (many of whom are also frail), plus a drive to manage more adults in the community when unwell. In this context, patient education about both illness and medication becomes even more crucial.

Medicine Sick Day Rules cards are credit card sized patient information cards that list the medicines that should be **temporarily** stopped during illness that can result in dehydration (vomiting, diarrhoea and fever). They look like this:

Front:

Back:



The list of medicines on the card is not exhaustive but the reasons these medicines were selected are because:

- Diuretics: can cause dehydration or make dehydration more likely in an ill patient.
- ACE inhibitors, angiotension II receptor blockers and NSAIDs: in a dehydrated patient, these medicines may impair kidney function which could lead to kidney failure.
- Metformin: dehydration increases the risk of lactic acidosis, a serious and potentially life-threatening side effect of metformin.

PROCESS

The cards were designed with input from pharmacists, doctors and patients. They were approved for use by the NHS Highland steering group of the Scottish Patient Safety Programme in Primary Care. Funding for printing of the cards was obtained from the Change Fund.

It was decided that the cards should be given to patients by a health professional rather than left on open display for patients to self-select. This was to ensure that patients understood the information on the cards. A briefing was sent to health professionals, with suggested messages they could give to patients. These were:

- Some medicines shouldn't be taken when you have an illness that makes you dehydrated. This is because they can either increase the risk of dehydration or because dehydration can lead to potentially serious side effects of the medicine.
- The medicine you are taking that falls into this category is [*tell patient which medicine*].
- Illnesses that can cause dehydration are: vomiting, diarrhoea and fever.
- This advice does not apply to minor sickness or diarrhoea, which means a single episode.

The cards were primarily distributed through community pharmacies (and dispensing GP practices in geographical areas without a community pharmacy). The reason this distribution route was picked is that community pharmacists see patients who take repeat medicines on a regular basis, ie, when patients collect their medicines from a pharmacy. Therefore, distribution through community pharmacies was the fastest way to provide cards to patients in a targeted way. The distribution was negotiated with the Highland Pharmacy Contractors' Committee. The committee was keen to support the initiative because the cards provided a tool for a consultation under the Chronic Medication Service.

Cards were also supplied to all GP practices and to all hospitals for supply at the point of a new initiation of a prescription for one of the listed medicines, during medication review, or at other appropriate opportunities.

Cards were distributed to community pharmacies, GP practices and hospitals in July 2013. Patients received cards primarily during August, September and October (as cycles of regular repeat medicines were supplied); but continue to receive them on an ongoing basis.

Involving community pharmacies, GP practices and hospitals demonstrates an integrated approach to delivering this initiative. Furthermore, carers employed by NHS Highland are provided with training on the cards as part of induction training on medicines management.

EVALUATION

Evaluation of the initiative is in two parts: a staff survey and an analysis of hospital admissions data. The evaluation aimed to answer two questions:

- Has the initiative improved patient safety?
- Has the initiative caused harm?

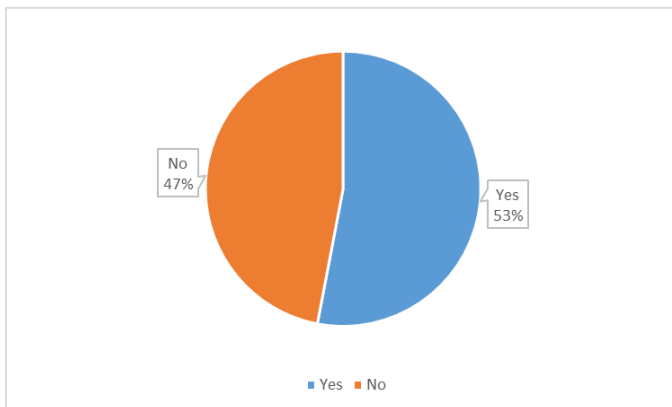
While it is hoped that this project will lead to a tangible benefit both in the rate and duration of acute kidney injury in NHS Highland, such a conclusion will take some time to demonstrate. Therefore, the primary aim of the evaluation is to ensure that educating patients in this way did no harm. One possible risk in this project is that patients stop taking

medicine while dehydrated (ie, following the advice on the cards) but then do not re-start them once recovered. It was particularly important that the evaluation addressed this question.

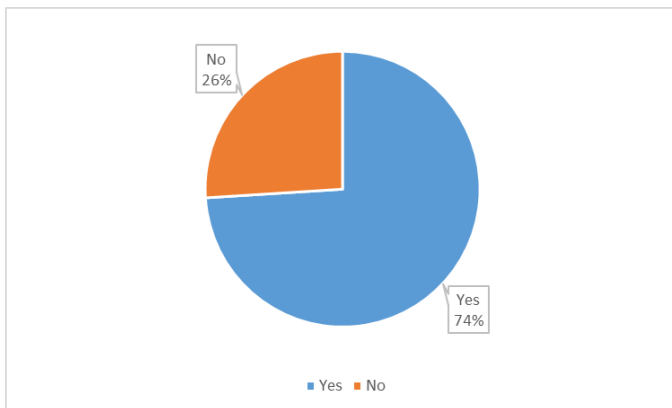
Part 1: Staff survey

A survey monkey short questionnaire was distributed to all NHS Highland staff by email, with additional paper copies sent to community pharmacies (some of whom cannot access NHS email accounts). A total of 317 responses were received: 51% of respondents worked in hospital/NHS services, 41% in GP practices and 8% in community pharmacies.

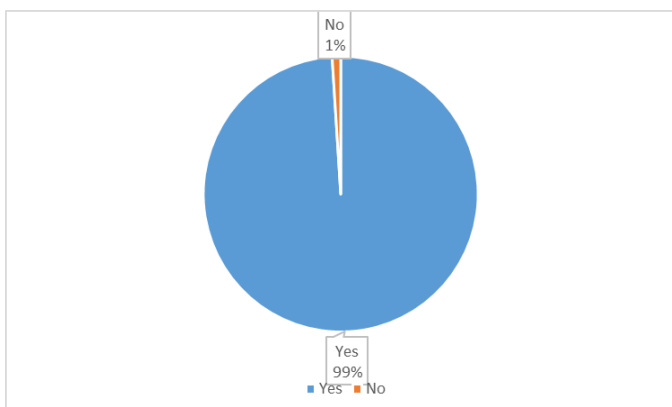
Question 1: Have you heard of NHS Highland Medicine Sick Day Rules cards?



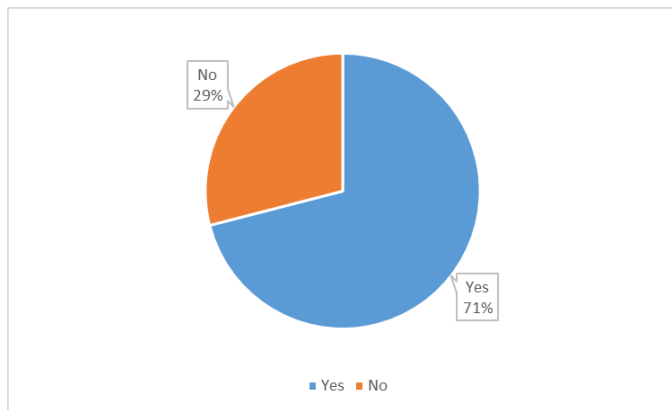
Question 2: Did you receive a supply of cards for distribution to patients?



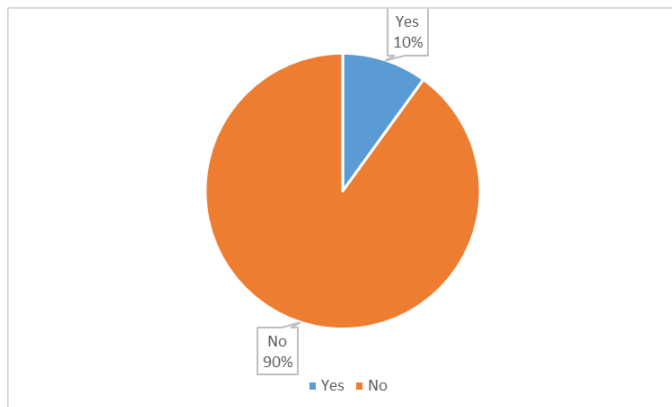
Question 3: Do you understand the messages behind the cards?



Question 4: Have you been supplying cards to patients?



Question 5: Have you observed any patients who have stopped medicines according to the advice on the card but then not re-started them?



The 10% who answered “yes” equated to 14 individual respondents. Two provided additional information:

- One said that a patient had contacted GP practice to seek reassurance before re-starting medicines. The respondent suggested that this may have been because the patient took metformin and had previously been educated to have U&E check before re-starting metformin.
- One said that some patients had stopped medicines for no real reason because the cards worried them.

Question 6: Comments

Respondents were invited to submit additional comments: 68 comments were received.

Nearly all comments were positive. A sample of comments includes:

- “Awesome. They are so useful. We use them lots. It is good that you can write on them to highlight the particular drugs the patient is on.”
- “Really useful cards to hand out to patients who all seem to like them - easy to read and put somewhere handy.”
- “Patients feel reassured as often become confused about which meds should take if unwell.”
- “This was a simple initiative which potentially could have great benefits. Most of the patients I gave the cards to had no idea that there could be an issue with serious consequences if they carried on taking these medicines when dehydrated.”

- “Very useful, cheap and important resource in my opinion.”
- “Cards are I think a great resource to explain the sick rules, and we have certainly had two or three patients who have had acute medical admissions with acute kidney injury with D&V illnesses who were on ACE inhibitors.”
- “Very useful memory aid. Has prompted discussion with patients who may have been on medication for a long time and never given this message as well as patients who have just been started on meds. Very useful cards, please send more!”

Some respondents highlighted problems and made suggestions for improvements, including:

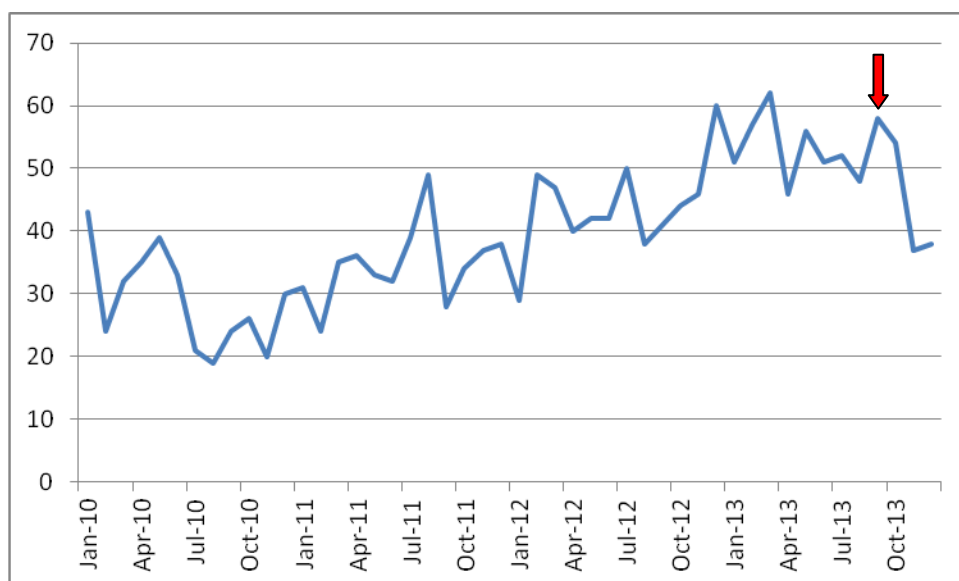
- “Perhaps more clarity on level of sickness/diarrhoea which needs to use these rules.”
- “Not sure how helpful they are, do patients hold on to them? Think warning would be better on medicine boxes.”
- “Useful, but I do wonder how many patients keep them beyond a week or so after receiving it. Better to put the same information on their repeat slip.”
- “I have personally added similar instruction to all repeat prescriptions for the relevant drugs to be added to the dispensing label, ie, if vomiting or diarrhoea, stop taking this medication until better.”
- “Can we have posters too?”
- “A patient information leaflet with further explanation would be useful.”

Part 2: Hospital admissions data

Hospital admissions data were obtained for all hospitals in NHS Highland (excluding Argyll & Bute) for the past four years. Admissions were counted as one admission per month, this avoided double-counting of patients admitted to one hospital and then transferred to another. Due to a change in computer systems in NHS Highland, data are currently only available for 2013. Data for 2014 are not expected to be available until late 2014. Therefore, the data presented below are an early interim evaluation.

Data collection 1: Acute kidney failure

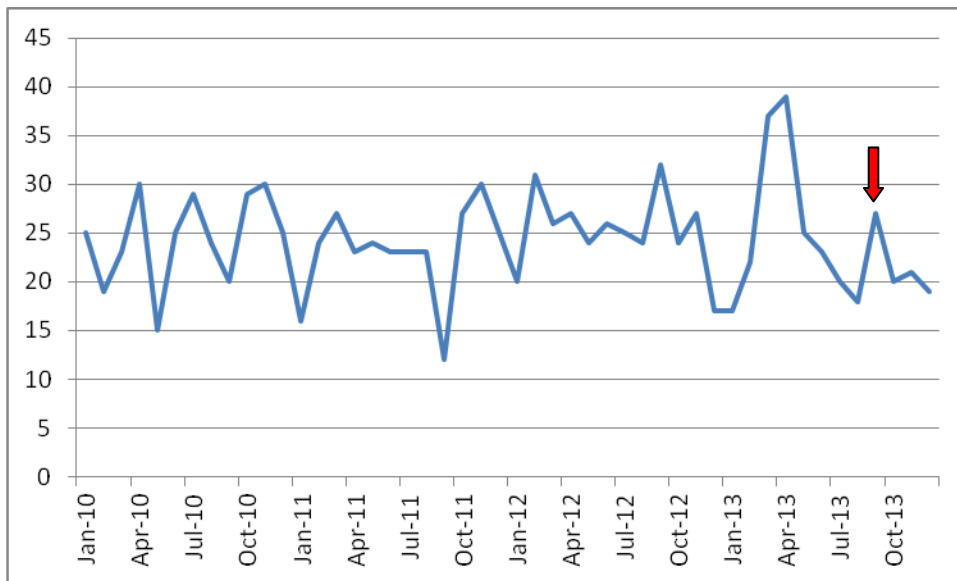
The aim of the cards is to reduce harm from medicines being taken during a dehydrating illness. One of the most significant risks of continuing to take medicines while dehydrated is acute kidney failure. Therefore, data on total hospital admissions for acute kidney failure (using N17 code) were obtained:



Cards were distributed to patients in August, September and October 2013: indicated by the arrow on the chart. The chart appears to show a fall in admissions since the intervention but, given the variation in the earlier part of the chart, this could be a random observation. However, it is noted that 2013 is the only year in the past four years where a fall in admissions (rather than rise) occurred between September and December.

Data collection 2: heart failure

A possible risk associated with use of these cards is that patients will not re-start medicines once they have recovered from a dehydrating illness. Many of the medicines listed are used in heart failure, and not re-starting these medicines could fairly rapidly result in worsening heart failure. Therefore, data on hospital admissions for heart failure (code I50) were obtained:



Cards were distributed to patients in August, September and October 2013: indicated by the arrow on the chart. No increase in admissions is observed since the intervention.

DISCUSSION

This report is an interim evaluation of the Medicine Sick Day Rules cards initiative. A further period of data collection is needed before conclusions can be drawn. However, this interim evaluation has been produced to inform a decision in NHS Highland on whether to continue to distribute cards and because of significant interest from other NHS organisations.

The staff survey part of the evaluation was positive. However, it is concerning that 14 respondents said that patients stopped medicines and did not re-start them. This strongly underlines the need for the cards to be distributed by health professionals, rather than put on open display, so that the messages can be clearly explained and any questions answered.

The hospital admissions data indicate that the cards did not result in an increase in admissions for heart failure, which is encouraging. However, the number of data points is too small to draw definite conclusions. It is even harder to interpret the data for acute kidney failure: the reduction in admissions observed since the intervention may be a result of the cards but may equally be due to chance, given the significant variation that exists in the chart. At least another six months' data are required before it will be possible to draw conclusions.

RECOMMENDATIONS

It is recommended that Medicine Sick Day Rules cards continue to be made available in NHS Highland, with appropriate arrangements made for ongoing distribution. All health professionals should be actively encouraged to report any incidents of patients not re-starting medicines on Datix to Clare Morrison (clare.morrison2@nhs.net) for monitoring.

It is recommended that hospital admissions data relating to acute kidney injury continue to be collected and monitored.

It is recommended that this interim evaluation is shared with other NHS organisations, requesting that they note the limitations of the data and consider the potential risks of this intervention before deciding whether or not to adopt it.

Clare Morrison and Martin Wilson
July 2014