

NIHR CLAHRC
for Northwest London

Chelsea and Westminster Hospital



NHS Foundation Trust

INFORMATION UNDERLOAD?

Utilization of a Hospital-based Medication Helpline

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Context

- Part of larger project looking at improving medication management at point of discharge from acute care
- Use of medication reconciliation and telephony post-discharge (NHS Direct)
- Looking at usage of three different types of helpline – hospital-based, NHS Direct and GP out of hours service

Hospital Hotline

- All hospital-dispensed medications placed in paper bag before being given to patient
- Helpline card either inserted inside or stapled to the outside of the packet
- Service available to in-house doctors and GPs
- Helpline hours 1000-1700 Monday to Friday
- Manned by hospital pharmacy staff on rota basis
- No specific training given to pharmacists, but all Level 7a or above (ie quite experienced!)
- All calls logged

Method

- Selection of 500 calls received over 6 month period (total of ~800 calls received)
- Single person coded all calls according to:
 - reason for call
 - medication(s) involved
- Those calls possibly describing medication errors coded further for:
 - type of medication error
 - level of potential harm

Results

- ~800 calls from public over 6 months
- 500 analysed
- 68 calls involved unspecified medicines and therefore excluded
- 432 calls regarding 549 medicines
- Hospital dispensed 24 435 outpatient medications during that time
- Not possible to accurately find no of TTOs!
Subsumed within inpt data.

Reason for Call

Error	49	9.8
Allergy	9	1.8
Side effect	111	22.2
Interaction	110	22.0
Directions	105	21.0
Why/what	42	8.4
Supply	62	12.4
Storage/expiry	11	2.2
Unknown	1	0.2

Table 1

*Includes one case where the reason for the call was missing; the caller had not specified the medicine either

Medicine Type	Reason for Call								Total
	Error	Allergy	Side Effect	Interaction	Direction	Why/What	Supply	Storage/Expiry	
Not Specified	7		14	5	8	9	24	1	69*
Upper GI		1	3	6	9	1	1	1	22
Cardiovascular	3		7	2	5	5	1		23
Respiratory		1	3		1		2		7
Hypnotics			3	3	1		2		9
Antibiotics	8	2	22	17	21	8	6	2	87
Diabetic						1	2	1	4
O/Cs	1				1				2
Cancer	1		2	1	1				6
Anaemia	2		4		1	2	2		11
Rheumatoid	3		6	5	2				16
Eyes			2		5	2	1	1	11
Skin	3	1	7	3	7		4		26
Vaccines			3	3			2		8
Laxatives etc	2		2		4		2		10
Herbal			1						1
Anticoagulant/ Antiplatelet	1		2	5	5	2		1	16
Corticosteroids	1			2	2		1		6
Antihistamines			2	1		2			6
Psychoses	1			1	1				3
Antidepressant	1			6		1			8
Obesity			2		1				3
Nausea		1				1			2
Analgesics	7	2	7	9	14	2	8		49
Epilepsy	2		5	2	3				12
Antifungals	1				1	1			3
Antiviral	3		3	29	1		2		38
Endocrine			9	7	5	1	1	4	27
GU disorders		1	2	2	4	3	1		13
Other	1			1	2	1			6
Total	49	9	111	110	105	42	62	11	500*

Reasons for Call - Breakdown

- 22% side effects
- 22% possible interactions
- 21% directions
- 10% error
- 8.4% why/what is medicine

Reasons for Call - Details

- 93 calls (87 primary drug) re antibiotics
 - 25% possible interactions
 - 24% side effects
 - 23% directions
- 58 calls (49 primary) re analgesics
 - 29% possible interactions
 - 24% directions
- 44 calls (38 primary, 5 sec, 1 tert) re HIV meds
 - 66% possible interactions
- 34 calls (23+9+2) re cardiovascular drugs
 - 32% possible interactions
 - 21% side effects
- 31 calls (27+4) re endocrine drugs
 - 35% possible interactions
 - 29% side effects

Interactions

- In 120 calls, caller asked about 2 or more medications.
- In 110 of these, caller was asking about drug-drug interactions.

Drug Two Cat	Reason for Call								Total
	Error?	Allergy	Side Effect	Interaction?	How do I take my medicine	Why or What is my medicine?	Supply	Storage &/or expiry	
Only one med	48	8	106		103	41	62	11	380*
Not specified				12					12
Upper GI				3					3
Rheumatic dis			2	6					8
Skin				4					4
Vaccines				2					2
Herbal & comp				25					25
Cardiovascular			1	8					9
Anticoagulant & antiplatelet				1					1
Respiratory			1	2					3
Hypnotics& sed				5					5
Psychoses					1				1
Analgesics			1	8					9
Antiepileptic				2	1				3
Antibiotic		1		5					6
Antivirals				5					5
Other endocrin				4					4
O/Cs				2					2
GU disorders				2					2
Cancer				5					5
Anaemia & nutr	1			3					4
Food				2					2
Alcohol				2					2
Other				2		1			3
Total	49	9	111	110	105	42	62	11	500

Interactions - Detail

- Most common call related to use of herbal/complementary medications with prescribed drugs (25 calls).
- Other common calls related to interactions with cardiovascular drugs (8), analgesics (8), antibiotics (5), antivirals (5) and cancer agents (5).

Medication Errors

- In 287 calls, no error was apparent – caller was requesting information.
- In further 42 calls (8.4%), there was no apparent error, but the caller was reporting an adverse drug reaction or interaction.
- In the remaining 171, it is possible that the caller was describing a medication error.
- Where possible, this was categorized.

Error Code	Type of error	Number (%)
	No error- seeking information only	287 (57.4%)
	No error – reporting ADR	42 (8.4%)
1	Prescribing decision, including wrong drug	11 (2.2%)
2	Writing prescription, including wrong dose, duration, time of day	14 (2.8%)
3	Dispensing error	8 (1.6%)
4	Wrong/insufficient information supplied with medicine	84 (16.8%)
5	Patient error	6 (1.2%)
6	Not known	48 (9.6%)
	Total	500

Medicine Type	Type of error								Total
	No error - request for info	Decision	Writing	Dispensing	Given insufficient/incorrect info	Patient error	No error - reporting ADR	Not known	
Not Specified	45		2	1	5	1	5	10	69
Upper GI	14		2		4	1		1	22
Cardiovascular	12			1	5		3	2	23
Respiratory	4				1		2		7
Hypnotics & sed	7				1	1			9
Antibiotics	41	2	4	3	15	1	12	9	87
Diabetic	4								4
O/Cs								2	2
Cancer	4							1	5
Anaemia & nut	4				1		4	2	11
Rheumatic dis	4		1		5	1	3	2	16
Eye	6				5				11
Skin	11			2	10		2		25
Vaccines	7				1				8
Laxatives & other bowel	7				1			2	10
Herbal & Comple	1								1
Anticoagulant etc	5		1		8	1		1	16
Corticosteroids	3			1	2				6
Antihistamines	4						1		5
Psychoses	2						1		3
Antidepressants	4	2			1			1	8
Obesity	3								3
Nausea	2								2
Analgesics	32	1	1		6		2	7	49
Epilepsy	4	1	1		2		3	1	12
Antifungals					1			2	3
Antiviral	30		1		2		2	3	38
Other endocrine	17	5			3		1	1	27
GU disorders	8				3		1	1	13
Other	2		1		2				5
Total	287	11	14	8	84	6	42	48	500

Type of Error - Detail

- Total 171 calls described some kind of error (34.2%)
- In 84 cases (16.8%), the caller appeared to have had insufficient or incorrect information regarding new medicines. These were most often about antibiotics (3% of all calls) or dermatology products (2%).
- In 14 cases, error appeared to have occurred at the time of writing of the prescription. 4 of these were not specifying length of treatment with antibiotics.
- 8 dispensing errors were identified, 3 with antibiotic quantities.
- In 5 cases, all involving endocrine medication, patient had decided that medication was not safe to take on reading the patient information sheet.
- Drugs most often involved were antibiotics (46 calls), analgesics (18 calls), dermatology products (13 calls), anticoagulants (11 calls) and endocrine medications (10 calls).

Potential Harm

- These 171 calls have been further graded into potential harm resulting from the 'error'.
- Into this analysis added 45 calls where ADR reported, although no error made eg. new allergy.
- Harm categories adapted from NCCMERP, 2007.

	Description	Comment
A	No Error	Use if advice only requested by caller
B	Not as far as patient	Use if patient has not started taking med in question
C	No harm, no intervention	Includes giving further information not in pack insert
D	No harm, yes intervened	Includes giving pack insert info that should have been with dispensed meds
E	Harm: temporary but no referral to hospital	
F	Harm: temporary requiring hospital	
G	Permanent harm	
H	Harm requiring resus	
I	Death	
?	Insufficient information	Eg: Is it safe for me to take this med

Medicine Type	Harm Index								Total
	A	B	C	D	E	F	?	N/A	
Not Specified	34	2	3	5	4	1	19	1	69
Upper GI	13			6	1		2		22
Cardiovascular	11	2		3	2		5		23
Respiratory	4			1	2				7
Hypnotics & sed	6			1	1			1	9
Antibiotics	32	3	1	16	15	1	18	1	87
Diabetic	3						1		4
O/Cs							2		2
Cancer	3						2		5
Anaemia & nut	4			2	4		1		11
Rheumatic dis	4	2	2	3	2	1	2		16
Eye	3			5	1		1	1	11
Skin	10		2	8	4			1	25
Vaccines	6			1			1		8
Laxatives & other	5		1	2			2		10
Herbal & Compl	1								1
Anticoagulant & antiplatelet	5		1	7			3		16
Corticosteroids	2			3			1		6
Antihistamines	3				2				5
Psychoses	2	1							3
Antidepressants	4		1	1	1		1		8
Obesity	3								3
Nausea	2								2
Analgesics	30			9	2		8		49
Epilepsy	3	1	1	2	2	1	2		12
Antifungals				1			2		3
Antiviral	27	1		1	2		6	1	38
Other endocrine	14	4		4	2		3		27
GU disorders	7			3	1		2		13
Other	2			3					5

Harm - Details

- 87 callers suffered from Harm Index D ie. there was no harm, but intervention was required.
- 48 from Harm Index E ie. temporary harm was caused.
- 4 were graded F ie. temporary harm, requiring referral to hospital.
- Potentially pharmacy successful in preventing 27% of pts (135) with medical need from seeing GP or other health professional

- Drugs most often causing Harm Index D were: antibiotics (16), analgesics (9), skin (8), anticoagulants/antiplatelets (7) and upper GI drugs (6).
- Drugs most often causing Harm Index E were: antibiotics (15) and skin (4).
- Drugs involved in Harm Index F were antibiotics, sedatives, rheumatoid drugs and unspecified (one each).

Harm

- Harm E examples included:
 - Can roaccutone cause arthritis?
 - Do simvastatin and erythromycin interact?
 - Does flucloxacillin cause sickness?
 - Have I been taking my roaccutane properly?
 - Does acetazolamide cause diarrhoea?
 - I took too many zopiclone. What do I do?
- Harm F calls were:
 - Baby discharged on antibiotics. Now not eating at all. Should I bring him to A&E?
 - Numbness, itchy and spots around face (med unspecified)
 - Pregabalin causing nausea, vomiting and diarrhoea. Should I continue?
 - I have taken too much methotrexate. What should I do?

Comparisons

- Clear contrast with patient information lines in Canada and Germany, where majority of calls were about cardiovascular and nervous system drugs.
- Also had substantially more calls relating to directions for use of medication (21%). Compares with 4% in Canada and 14% in Finland.
- Main cause of concern = antibiotics, which reflects that location of service is in an acute care hospital.
- Large number of calls relating to HIV related to Chelsea and Westminster Hospital being largest HIV centre in Europe.

Conclusions

- Substantial unmet need for information about medication, particularly when starting new drugs
- Should be remembered that C&W pts tend to have above average incomes, well-educated and are highly motivated pt population – if these pts don't understand, what about rest of population??
- Most concern about common drugs, such as antibiotics and analgesics
- Patients clearly unsure about how or why to take such medicines
- More dangerous drugs (such as warfarin) less often asked about, although calls tend to be about more severe potential harm.
- Although could argue only small fraction of pts call, service still diverts these pts from using other health services
- Service now being withdrawn due to funding cuts. Burden of responsibility??

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