Electronic prescribing

How does it affect the ward pharmacist?

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Background

- Electronic prescribing and administration is being widely advocated
- Little known about how its introduction will affect the ward pharmacist
- We are piloting a system (“ServeRx”) comprising
  - electronic prescribing
  - ward-based automated dispensing
  - barcode patient identification
  - electronic administration records

Objectives

- To assess the impact of this system on:
  - time spent providing a ward pharmacy service to the study ward
  - types of activities undertaken


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Methods

- Data collected before, and one year after the introduction of the system
  - Same ward pharmacist in each data collection period
- Pharmacist self-reported time taken on ward each day for four weeks
  - Weekends included
- More detailed working sampling study carried out by an observer each weekday for 2 weeks
  - Two-dimensional random interval work sampling
  - Mean of 32 samples per hour

Activity dimension

- Prescription annotation
- Prescription monitoring
- Supply
- Change in therapy or monitoring
- Giving advice / information
- Information gathering
- Looking for charts
- Patients' own drugs
- Travel
- Non-productive
- Other

Contact dimension

- Doctor
- Nurse
- Pharmacy
- Patient
- Other
- Self

Results

- Self-reported time taken
  - Mean weekday time increased from 1 hour 8 min to 1 hour 38 min (p = 0.001; t test)
  - Weekends – increase from 13 min to 19 min / week
  - Overall increase from 5 hours 53 min each week, to 8 hours 29 min
- Increase from 78% to 100% of all charts seen on weekday visits
  - Mean time per chart 3 minutes 7 seconds pre-ServeRx, and 3 minutes 30 seconds post-ServeRx.

Results

- Activity sampling
  - Pre: mean 54 min/day (264 samples)
  - Post: mean 1 hour 21 min per day (414 samples)

Activity	Pre-ServeRx		Post-ServeRx	
	Time	%	Time	%
Change therapy	0:20	3.8%	0:55	6.8%
Giving advice/ info	0:51	9.5%	2:35	19.1%
Information gathering	1:19	14.8%	2:01	15.0%
Looking for charts	0:16	3.0%	0	0
Non-productive	0:33	6.1%	1:26	10.6%
Other	0:16	3.0%	0	0
Patients' own drugs	0:29	5.3%	0	0
Prescription annotation	0:49	9.1%	1:03	7.7%
Prescription monitoring	1:23	15.5%	3:02	22.5%
Supply	2:02	22.7%	1:50	13.5%
Travel	0:39	7.2%	0:33	4.1%
TOTAL	8:57	100%	13:30	100%

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Contact	Pre-ServeRx		Post-ServeRx	
	Hours	**%**	**Hours**	**%**
Doctor	0:34	6.4%	1:50	13.5%
Nurse	1:17	14.4%	0:51	6.3%
Other	0:14	2.7%	0:35	4.4%
Patient	0:53	9.6%	1:34	11.6%
Pharmacy	n/a	n/a	0:22	2.7%
Self	5:58	66.7%	8:19	61.6%
Total	**8:57**	**100%**	**13:30**	**100%**

Discussion

- Increase time required – but more charts seen
- Changes in the activities undertaken
  - Increased time on changing therapy / monitoring, giving advice, and prescription monitoring
  - Decreased time looking for charts, checking patients' own drugs, supply and travel
  - Increased contact with doctors; decreased contact with nurses. Patient contact similar
- Recommendations for future development of the system

Limitations

- Some discrepancy between self-reported and observed times
- No control ward
  - Other changes over this time period?
  - Increased drug history taking by pharmacists
  - Check of new medication orders in the afternoon for the study ward
  - Transcription of drug charts onto system, as only on one ward
- Results for other aspects of pharmacy service not presented here

Conclusions

- Increased time taken to provide ward pharmacy service
  - Time per patient did not increase
- Change in activities & contacts
- Need to consider these issues when introducing electronic prescribing and administration systems