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On-ward participation of a hospital pharmacist in a Dutch Intensive Care Unit reduces prescribing errors and related patient harm

Submission date 02/08/2010	**Recruitment status** No longer recruiting	[_] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 19/08/2010	**Overall study status** Completed	
Last Edited 05/10/2011	**Condition category** Other	

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Study information

Scientific Title
On-ward participation of a hospital pharmacist in a Dutch Intensive Care Unit reduces prescribing errors and related patient harm: an intervention study

Study objectives
Patients admitted to an Intensive Care Unit (ICU) are at high risk for medication errors and related patient harm (preventable Adverse Drug Events [ADEs]), due to the critical nature of

their illnesses, polypharmacy, use of high-risk drugs, and a high frequency of changes in pharmacotherapy.
Several studies have shown that on-ward, daily participation of a clinical pharmacist in the ICU can effectively and efficiently reduce the number of medication errors and related patient harm. Given the increasing awareness of medication safety problems in The Netherlands, a proactive on-ward involvement of Dutch hospital pharmacists (an active approach) seems also desirable. Within the current organization model of the hospital pharmacy in The Netherlands, mostly a passive approach is utilized in the form of on-call consultation duty by a hospital pharmacist.

The aim of this trial is to investigate whether participation of a hospital pharmacist can be an effective approach in reducing prescribing errors and related patient harm (preventable Adverse Drug Events [ADEs]) in Dutch healthcare setting.

Ethics approval required
Old ethics approval format

Ethics approval(s)
The Medical Ethics Committee of the Academic Medical Centre/University of Amsterdam confirmed that this trial does not require ethics approval under the Medical Research Involving Human Subjects Act (WMO) on the 23rd of June 2010 (ref: 10.17.1044)

Study design
Prospective study comparing a baseline period with an intervention period.

Primary study design
Interventional

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Preventable Adverse Drug Events (ADEs); pharmacist participation; drug prescribing

Interventions
The intervention was an on-ward participation program for a hospital pharmacist consisting of the following activities: The hospital pharmacist assigned for this study evaluated each new medication order for its appropriateness of indication and duration of therapy, drug dosage and frequency, risk of drug-drug and drug-disease interactions as well as pharmacological duplications and omissions. The international and national pharmacotherapy guidelines and local evidence-based pharmacotherapy protocols were used for this evaluation. For each prescribing issue detected, the ICU hospital pharmacist recorded the date, patient characteristics, admission type, medication details and his recommendation. The detected prescribing issues and the recommendations were discussed with the attending ICU physicians during the daily multidisciplinary patient review meeting. If consensus was reached between the ICU hospital pharmacist and the attending ICU physicians on a recommendation regarding a prescribing issue, then that issue was scored as a prescribing error and the medication order was corrected by the responsible attending ICU physician. If consensus could not be reached, the prescribing issue was not scored as a prescribing error and medication order was regarded as 'appropriate'.

The total duration of the intervention was 8 months.

Intervention Type
Other

Phase
Not Applicable

Primary outcome(s)
The incidence of prescribing errors per 1000 monitored patient-days.

Key secondary outcome(s))
The number of prescribing errors per 1000 monitored patient days that resulted in patient harm (preventable Adverse Drug Events).

Completion date
30/06/2006

Eligibility

Key inclusion criteria
All patients admitted to the ICU between October 3, 2005 and June 30, 2006

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Key exclusion criteria
Does not match inclusion criteria

Date of first enrolment
03/10/2005

Date of final enrolment
30/06/2006

Locations

Countries of recruitment
Netherlands

Study participating centre

Meibergdreef 9
Amsterdam
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1105 AZ

Sponsor information

Organisation
Netherlands Organisation for Health Research and Development (ZonMw) (Netherlands)

ROR
https://ror.org/01yaj9a77

Funder(s)

Funder type
Research council

Funder Name
Netherlands Organization for Health Research and Development (ZonMW) (Netherlands) - partially funded by research grant

Funder Name
Academic Medical Centre (AMC) (Netherlands) - Hospital Pharmacy Department and Adult ICU Department

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/07/2010		Yes	No