Implementation of Internal Audit System on Non-Essential Drug Prescribing at Srinagarind Hospital

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Background and Objective: The Comptroller General's Department (CGD) has announced a measure namely "The Non-essential Drug Prescription Criteria" (NPC or A-F items) to encourage the rationale drug use for patients under civil servant medical benefit scheme (CSMBS) in 168 public hospitals since the fiscal year 2013. This study aimed to monitor and assess the implementation of this measure using internal an audit system at Srinagarind hospital.

Method: The outpatient prescribing of non-essential drugs (NED) in four drug groups; cyclooxygenase-2-receptor inhibitors, angiotensin-2-receptor blockers, proton pump inhibitors and HMG coA reductase inhibitors, for patients under CSMBS who visited Srinagarind hospital after 1 November 2012 were assessed until complete 100 prescribing per each drug group. The consistency of the NPC specified in prescriptions and patient medical record were assessed. In addition, the rationale of prescribing was evaluated using the drug use criteria.

Result: NPC were indicated in all 400 prescribing and the most common NPC were item C (47.5%) followed by item B (40.5%) and item A (10.0%). The data recorded in patient medical charts that supported the use of NED were found and could be assessed in only 199 prescribing (49.8%) and their consistency to NPC were found in 92 prescribing (46.2%). The rationale of prescribing could be assessed in 332 prescribing (83.0%), in which appropriate use of these NED was found in 103 prescribing (31.0%).

Conclusion: The consistency between NPC and data supporting the NPC was found in only half of the cases but the rational of drug use was found in one third of assessable cases. Internal audit system may be set up to assess and support the rational NED use in the hospital

Keywords: Non-essential Drug Prescription Criteria (NPC), Civil Servant Medical Benefit Scheme (CSMBS)

Proceeding

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Introductions

At present, medical cost has been growing up in several countries including Thailand. The medical treatment expense of outpatients per the whole treatment expense increased from 46% in the budget year 2002 to 74% in the budget year 2009 and medicinal cost was the biggest portion of reimbursement as 80% of treatment expenditure of outpatients. In addition, the Comptroller General's Department (CGD), Ministry of Finance had checked 12 month-retroactive prescription of 34 target government hospitals in the budget year 2009 and reported 16.6 million prescriptions with totally valued 15,247.96 million Baht. Forty percent of the prescriptions contained non-essential drugs (NED) which cost 10,048 million Baht or 66% of medical gross value. To sustain the entire health system, the Comptroller General's Department (CGD), Ministry of Finance had provided many measures to control the drug prescribing and

encourage the rationale drug use for patients under civil servant medical benefit scheme (CSMBS). Therefore, a measure namely "The Non-essential Drug Prescription Criteria measure" (NPC or A-F items) was announced on May 1, 2012 for conducting non-essential drugs reimbursement in 168 public hospitals since the fiscal year 2013[1]. Briefly, the non-essential drug fee can be compensated only when the essential drug cannot be applied to some specific case due to the medical reason limitation. The medical staffs or the physicians must select one item of NPC and record in the prescriptions when they prescribed NED especially in 9 target drug groups with highest prescribing reported by the CGD and sent the report to the CGD as electronic file. Moreover, the physicians must provide certificate reasons in patient medical record why they selected NED instead of ED following the guideline. However, there was a drug use guideline offered by the Ministry of Public Health on June 30, 2011 was composed of only 4 drug groups; 3-hydroxy-3-methyl-glutaryl-Coenzyme A reductase inhibitor, angiotensin II receptor antagonist, proton pump inhibitor, and selective cyclooxygenase II inhibitor and the hospital could adopt it and used as their practical guideline in the hospital. Srinagarind hospital was a medical school with 1,190 beds and there were 252,233 government officers registered at the hospital with 134,149 outpatient visitings (41.38%) in the budget year 2007[2]. As we served the outpatients with CSMBS more than 100,000 prescriptions a year so that the hospital was included in 168 target hospitals and must comply to this measure.

Objectives

The aim of the present study was to follow up and evaluate the operation of using NED under the this measure by setting an internal audit system to improve the control system of NED usage in the hospital

Material and Methods

The study protocol was approved by the institutional research ethics committee at Khon Kaen university. The population is the prescription and the medical record of outpatient under CSMBS who received NED since 1 November 2012. The sample size was calculated using Krejcie and Morgan formula[3] as the following equation

$$n = \frac{\chi^2 Np(1-p)}{e^2(N-1) + \chi^2 p(1-p)}$$

When there were more than 100,000 prescribing a year and the NED used was about 20%, the population was about 20,000 prescribing. If the acceptable and reliability were set at 5% and 95%, respectively, the total sample size was equal 388 prescribing. Therefore, data from 100 prescribing were collected per each drug group (angiotensin receptor blocker, ARB; 3-hydroxy-3-methyl-glutaryl-Coenzyme A reductase inhibitor, STATIN; proton pump inhibitor, PPI; selective cyclooxygenase II inhibitor, COXIB)

Data about NED prescribing were collected including the NPC as A-F items (adverse drug reaction or allergy occurred, A; the treatment cannot be accomplished, B; no essential drugs available and the patient need non-essential drug usage indicated by Food and Drug Administration, C; patient has contraindication or drug interaction with the essential drugs, D; essential drug is more expensive when considering worthiness aspect, E; in case the patient shows his intention and the reimbursement cannot be completed, F) in prescription and the provide certificate reasons in patient medical record why they selected NED instead of ED. Other data that may support NED prescribing such as physical examination and laboratory examination were also collected. The consistency of data from prescription and patient medical record were compared Then, these data were compared with criteria adapt from drug use guideline offered by the Ministry of Public Health to assess the rationale use of drug. All data were analyzed quantitatively using descriptive statistics as the number or frequency and percentage.

Results

NPC were recorded in all 400 prescribing of NED drugs. The mostly specify NPC was item C in 190

prescribing followed by item B in 162 prescribing and item A in 40 prescribing as shown in Table 1. The data in patient medical record supported the use of NED was found and consistency to NPC assessed in 199 prescribing with consistency rate nearly 50%. NED use could be assessed in 322 prescribing and the approximate one third of NED prescribing was rationale use as shown in Table 2.

Table 1 Non-essential drug (NED) prescribing criteria indicated for each prescribing

Drug groups	Number of NPC (%)					
	Item A	Item B	Item C	Item D	Item E	Item F
ARB						
- Irbesartan (n = 67)	23	59	15	1	-	2
- Valsartan (n = 33)						
COXIB						
- Celecoxib (n = 72)	1	22	76	-	-	1
- Etoricoxib (n = 28)						
STATIN						
- Atorvastatin (57)	16	64	16	4	-	-
- Rosuvastatin (31)						
- Pravastatin (12)						
PPI						
- Esomeprazole (n = 37)	-	17	83	-	-	-
- Lansoprazole (n = 32)						
- Rabeprazole (n=29)						
- Pantoprazole (n=20)						
Total	40 (10.00)	162 (40.50)	190 (47.50)	5 (1.25)	-	3 (0.75)

Table 2 Consistency and rationale of NED prescribing of 4 NED groups

Assessment	Number of prescribing (%)				
	ARB	COXIB	STATIN	PPI	Total
Consistency					
Yes	40	2	39	11	92 (23.00)
No	37	27	18	25	107 (26.75)
Could not be assessed	23	71	43	64	201 (50.25)
Rationale					
Yes	18	28	21	36	103 (25.75)
No	70	41	72	46	229 (57.25)
Could not be assessed	12	31	7	18	68 (17.00)

Discussion

Physicians have identified NPC in all 400 prescribing but record the reasons or the data supporting NED use in only 199 prescribing with consistency rate nearly 50%. This meant the practitioners in the hospital complying to the measure in inaccurately and incompletely fashion. This may be due to the hospitals had their own measure for controlling the use of NED in these four groups before the announcement of CGD measure. The doctor must fill information in write drug use evaluation (DUE) form to complete the prescribing, then the doctor may not duplicate the reasons in the medical record. The information in DUE form was just details about an indication of drug use but lack of

information about the reasons for using NED instead of ED. Thus, the data in this form could not be substituted for the data must be provided in outpatient medical record. In addition, physicians may have some difficult in choosing A-F reason because they did not understand either the definition of the difference option or the information needs to be recorded in the medical record. Moreover, the limitations of the time spent in patient care thus that there was not enough time to record the reasons for using NED in the medical record. However, the rationale of drug use could be assessed in 332 prescribing and appropriate use of these NED was found in 103 cases (31.0%). In STATIN group, rationale drug use was found in only 21 out of 93 assessable prescribing which was similar to the studies of Pattreya Pokhagul and Ajchara Lamthong who evaluated the use of STATIN at Ratchaburi hospital and Rajchabhipat hospital, respectively with rational prescribing found in 13.77% and 48.7%, respectively.[4,5] Difference in rational prescribing among these three hospitals may be due to the difference in setting and criteria of drug use. Internal audit system may be set up to assess and support the rational NED use, then hospital manager should take the information from the study and use it for making the policy supporting the rational NED use.

Conclusion

This measure was complied in this hospital in inaccurately and incompletely fashion. There major obstacles urge that monitoring and evaluating the implementation of NPC measure is required. Despite the consistency between NPC and data supporting the NPC was only half of the cases but the rational of drug use was found in one third of assessable cases. Internal audit system may be set up to assess and support the rational NED use in the hospital.

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