

**A physician-reminder checklist is effective to decrease unscheduled readmission rate—the IDD/PIX logical system**  
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**Objective:**

To evaluate the performance of a ready-to-discharge clinical checklist for the improvement of unscheduled readmission rate.

**Background and methods (1):**


A randomised single blind prospective study was conducted between the 1<sup>st</sup> October 2002 to 1<sup>st</sup> March 2003 to determine the effect of a physician-reminder checklist on unscheduled re-admission rate.

The checklist evaluates a series of clinical implementation (Table 1).

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**Table 1. The IDD/PIX logical checklist for ready-to-discharge patients**

<p><b>Admission problems:</b></p> <ol style="list-style-type: none"> <li>1.</li> <li>2.</li> <li>3.</li> </ol> <p><b>Chart review:</b></p> <p>I - latest vital signs &amp; I/O  D - laboratory data abnormalities  D - drug revision</p> <p><b>Prognosis:</b></p> <p>°excellent (correctable &amp; preventable)  °good (correctable but unpreventable)  °fair (uncorrectable but preventable)  °poor (uncorrectable &amp; unpreventable)</p>	<p><b>Ready-to-discharge outcomes:</b></p> <p>Problems corrected °not yet corrected °°  Problems preventable °unpreventable °°  Consultation °education °home care °°</p> <p><b>Patient's conditions</b></p> <p>P - selective physical examination  I - invasive tubings &amp; instruments  X - x-ray follow-up (&amp; EKG etc)</p> <p><b>Recent readmission:</b></p> <p>°not likely (good or excellent prognosis)  °possible (fair or poor prognosis)  °scheduled</p>
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**Background and methods (2):**

This simple and easy-to-remember IDD/PIX systemic checklist was logically designed to remind healthcare professionals to re-evaluate important factors which may cause unscheduled readmission if overlooked before discharging a patient.

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**Background and methods (3):**

A total of 680 patients were discharged from our ward of Department of Gastroenterology during this period. Those who had been checklist reviewed by physicians before discharge were recruited in our study group and those not re-evaluated (i.e. on-duty discharge or AAD cases etc.) in its control group.

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**Background and methods (4):**

The performance of this checklist was evaluated by comparing the numbers of cases in both groups of unscheduled readmissions within 15 and 31 days after discharge according to the definition of "performance indicator 7" by the International Quality Indicator Project® (IQIP).

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### Background and methods (5):

This “unscheduled readmission indicator” can reflect most if not all the healthcare quality and improvement in patient care. Pearson chi-square statistic analysis was performed using the SPSS 10.0 software.

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### Results (1):

Both the study (S) and control (C) groups had 340 cases.

**Figure 1:** 12 out of 340 (S); 29 out of 340 (C) were readmitted  $\leq 15$  days ( $P=0.006^*$ ).

24 out of 340 (S); 44 out of 340 (C) were readmitted  $\leq 31$  days ( $P=0.011^*$ ).

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### Results (2):

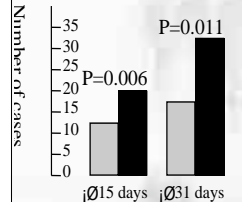
The demographic and clinical data (Table 2) of both groups were very similar except that the main complications causing readmission within 31 days after discharge were a bit higher in the control group (not statistically significant).

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**Table 2. Data comparing the study (S) and control (C) groups**

	S group	C group
No. of cases	340	340
Sex ratio M/F	2:1	2:1
Average age	57.78	57.09
Alcoholism	15.4%	18.3%
Regular OPD F/U	93.7%	90.4%
Regular medications	97.8%	95.7%
Causes of readmission $\leq 30$ days		
Varices bleeding	27.3%	30.2%
GI disturbance	15.2%	17.3%
Encephalopathy	12.5%	14.3%
Other GI re-bleeding	9.3%	8.9%
Recurrent BTI	6.4%	6.9%
Intractable ascites	5.6%	7.9%
SBP	5.2%	7.2%
Malignancies	3.7%	3.2%
Fever relapse	2.3%	1.9%
Others	12.5%	2.2%

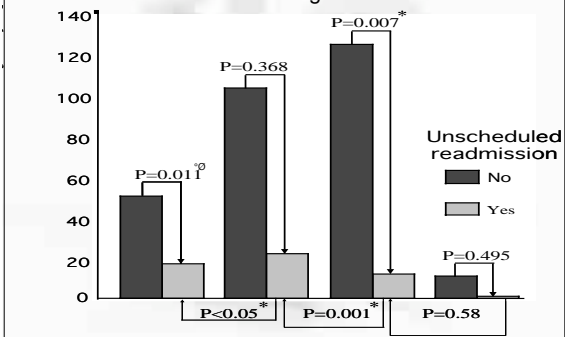
**Figure 1.** Unscheduled readmissions in study (grey) and control (black) groups



SBP, spontaneous bacterial peritonitis; OPD, out-patient department; BTI, biliary tract infection; F/U, follow up; \*  $P < 0.05$

### Results (3):

The relationship between prognosis and number of cases is shown in Figure 2.



**Figure 2.** Relationship between prognosis and number of cases

### Conclusions (1):

(1) This study shows that our IDD/PIX logical physician-reminder checklist is effective to decrease unscheduled readmission rate, thus improving healthcare quality.

(2) This project has achieved its objective to show that checklist-guided re-evaluation before ward discharge (objective discharge) is very important and more reasonable than “subjective discharge” conventionally.

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### Conclusions (2):

(3)The reasons causing unscheduled readmission are multifarious and therefore different aspects of personal, social, clinical, ethical and environmental elements have to be considered.

(4)The results of this study implicate that clinical checklists are essential and beneficial for decision marking such as the question of “when to discharge a patient ?”.

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### Conclusions (3):

(5)This idea and practice can be implemented in similar ways for the improvement of healthcare quality for patients in other units such as emergency rooms and intensive care units

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The screenshot shows a medical software interface with a sidebar on the left containing a checklist of medical categories. The main window displays a detailed list of discharge instructions in Chinese. The categories in the sidebar include: 轉科(床), 診斷, 治療, 病史, 體檢發現, 手術方法及日期, 住院治療經過, 合併症, 檢查記錄, 放射線報告, 病理報告, 其它, 出院時情況, and 出院指示. The main window content is as follows:

出院指示 :

- 1.Admission problems & outcomes:
  - a) Duodenal ulcer with bleeding
  - b) Multiple T-L spine compression fracture
- 2.Latest vital signs:36.8,78,20,122/76mmHg
- 3.Intake & output:ok
- 4.Recheck PE abnormalities: epigastric tenderness subsided
- 5.Recheck/Review laboratory abnormalities:Hb 10.4 gm/dl -> P.RBC 1 unit transfusion.
- 6.Recheck/Review X-ray & EKG abnormalities:nil.
- 7.Consultation & results:nil.
- 8.Cre-assisting instruments(侵入性管路):nil.
- 9.Home medications:as above
- 10.Home Care 居家護理:[]Arranged [v]not necessary
- 11.Patient Education 衛教:[v]口頭 [ ]發單張
- 12.Problems [v]corrected [ ] not yet corrected
- 13.Problems [v]preventable [ ]unpreventable
- 14.Prognosis:
  - { excellent(correctable & preventable)
  - { good(correctable but unpreventable)
  - { fair(uncorrectable once happen but preventable)
  - { poor(uncorrectable & unpreventable)
- 15.Recent re-admission:
  - { not likely(good or excellent prognosis)
  - { possible(fair or poor prognosis)
  - { scheduled

Thank you

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