

A flow sheet protocol for febrile neutropenia

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Overview: TITAN course

- March 2004 - Attended TITAN course
- To improve prevention, detection and management of haematological toxicities
- Dissemination project



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Overview: current practice

- Nurse-led unit
- Format of existing protocol was difficult to follow
- Hindered identification of patients at risk of sepsis
- “50% of deaths from patients with solid tumours are related to infections secondary to neutropenia”¹

1. Barber FD (2001) Management of fever in neutropenic patients with cancer *Nursing Clinics of North America*, 36, 631-644



Existing protocol

Management of Febrile Neutropenia West of Ireland Cancer Center April 6, 2000

Febrile Neutropenia Definition

Fever

- Oral temperature $> 38^{\circ}\text{C}$ x 1
- Oral temperature $> 37.5^{\circ}\text{C}$ x 2 1 hour apart

Absolute Neutrophil Count (ANC)

- ANC $< 0.5 \times 10^9/\text{L}$
- ANC $< 1 \times 10^9/\text{L}$ and expected to fall to $< 0.5 \times 10^9/\text{L}$ within 24-48 hours

Investigations

History and Physical Exam

- Blood Culture Aerobic / Anaerobic / Fungal
 - All indwelling catheter lumens
 - Peripheral blood

MSU Culture and Sensitivity

- Culture any infected site
- Culture all intravenous catheter exit sites
- FBC U&E CXR

No evident source of infection. Empiric Therapy

- IV Piperacillen / Tazobactam 4g/500mg q 6 hours.
- IV Gentamycin 5mg/kg/day dependent on renal function (See attached appendix1)

Systolic Blood Pressure $> 90\text{mmHg}$

- IV NaCl 0.9% 1liter per 8 hours

Systolic Blood pressure $< 90 \text{ mmHg}$

- Transfer to ICU
- Add IV Vancomycin 1000mg in 250mls 0.9% Saline over 100 mins q 12 hours
- IV NaCl 0.9% 500mls run in / Assess BP response and then titrate fluids to BP
- If BP unresponsive Dobutamine $5\mu\text{g}/\text{kg}/\text{min}$ and / or Dopamine $5\mu\text{g}/\text{kg}/\text{min}$ and titrate to need

Platelets < 20

- Transfuse platelets to maintain platelet count > 20



Aim

To make the existing protocol more user friendly so that medical and nursing staff would be better equipped to identify high-risk patients and to manage common infections more efficiently in the future.



Key steps

- Planning
- Design
- Analysis
- Evaluation
- Promotion



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Planning

- Defined target audience
- Exact goals
- Decided on medium for delivery
- Process model – Flowsheet



Flowsheet Definition

- “Flowsheets are graphical representations of the sequence of all operations, movements, decisions and actions involved in a process”

DeVaux L (2004) Using flowcharts as valuable visual tools
[Http://www.Masspro.org/publications](http://www.Masspro.org/publications)



Why use Flowsheets?

- Flowsheets document the process and interrelationship of the steps involved
- The organisation benefits from standardised processes
- People who are new to a particular process need to learn them and be able to refer to information about them

DeVaux L (2004) Using flowcharts as valuable visual tools
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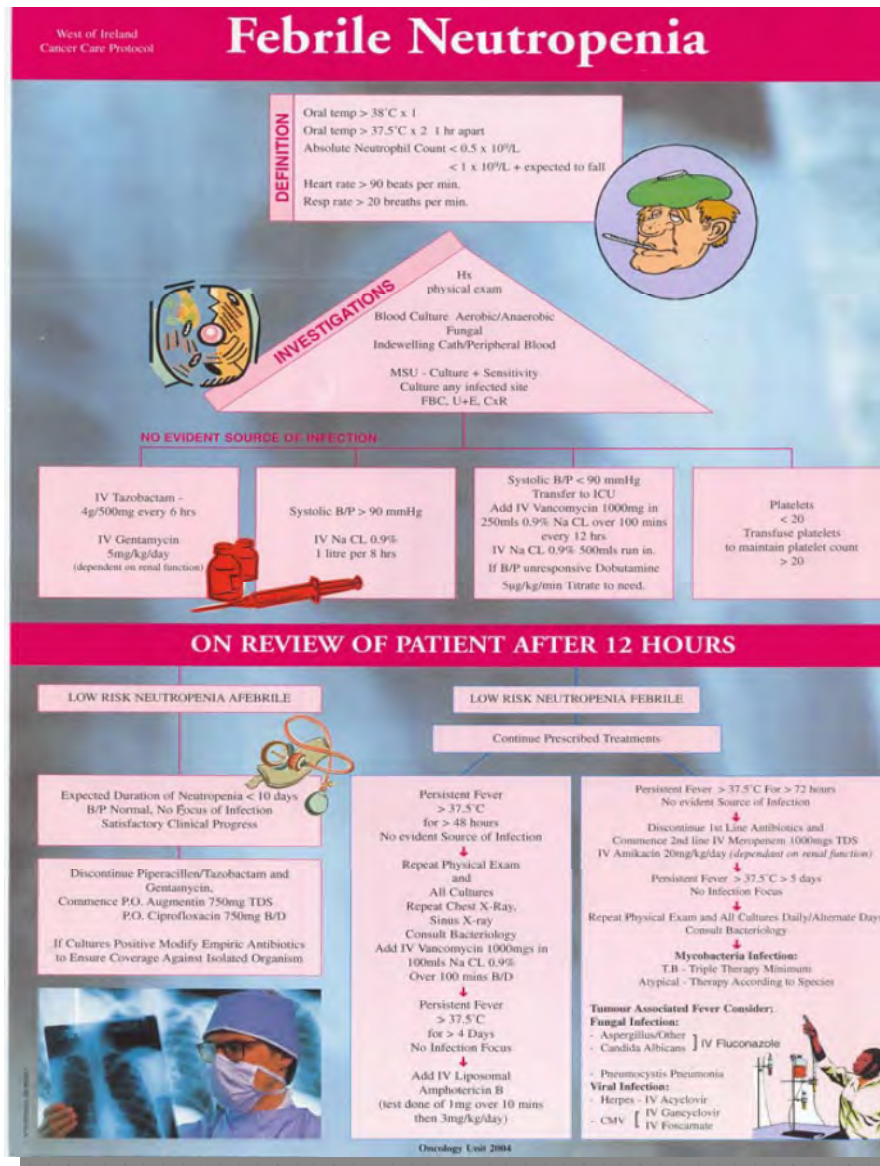


Design

- Detail
- Logical categories
- User-friendly
- Language
- Illustrations



The new flowsheet protocol



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Analysis (1)

- Evaluated information consistency
- Verified information
- Pilot tested - July 2004



Analysis (2)

- Questionnaire
- Target audience
- 11 nursing staff, 4 medical staff

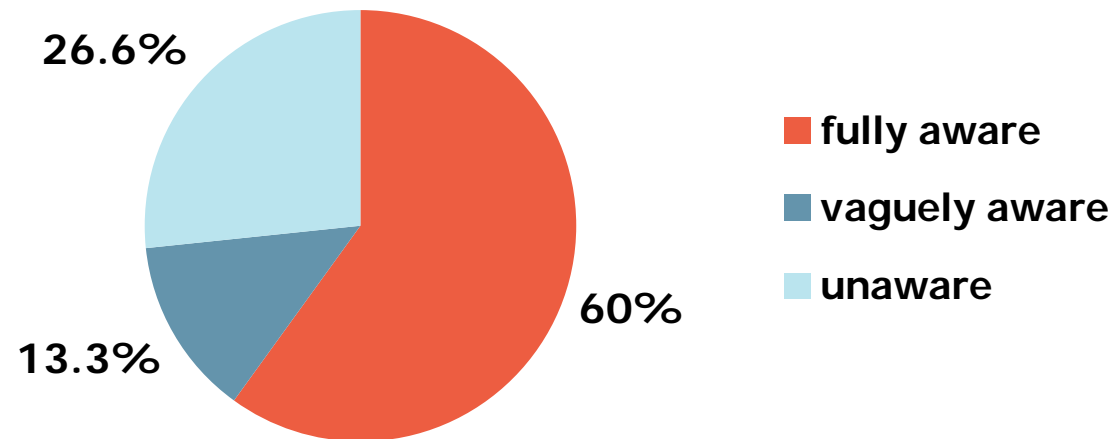


Evaluation: Question 1

Question

Are you aware of the previous neutropenia protocol?

Answer



Evaluation: Question 2

Question

Have you referred to the current flow-sheet for febrile neutropenia?

Answer

33.3% of those surveyed have referred to the new protocol



Evaluation: Question 3

Question

Do you find the flow-sheet more user-friendly than the previous 3-page febrile neutropenia document?

Answer

93.3% of those surveyed found the flow-sheet more user-friendly, 6.7% did not.



Evaluation: Question 4

Question

Do you find that the flow-sheet benefits your practice when dealing with febrile neutropenia patients?

Answer

100% found the flow-sheet beneficial.



Evaluation: Question 5

Question

Have you any recommendations with regard to the flow-sheet?

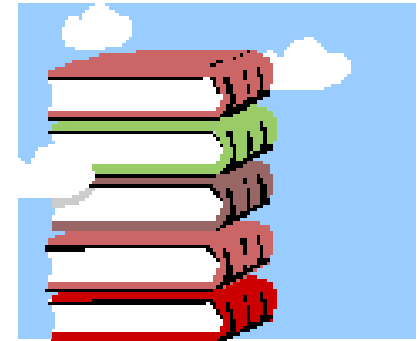
Answer

20% of those surveyed had recommendations.

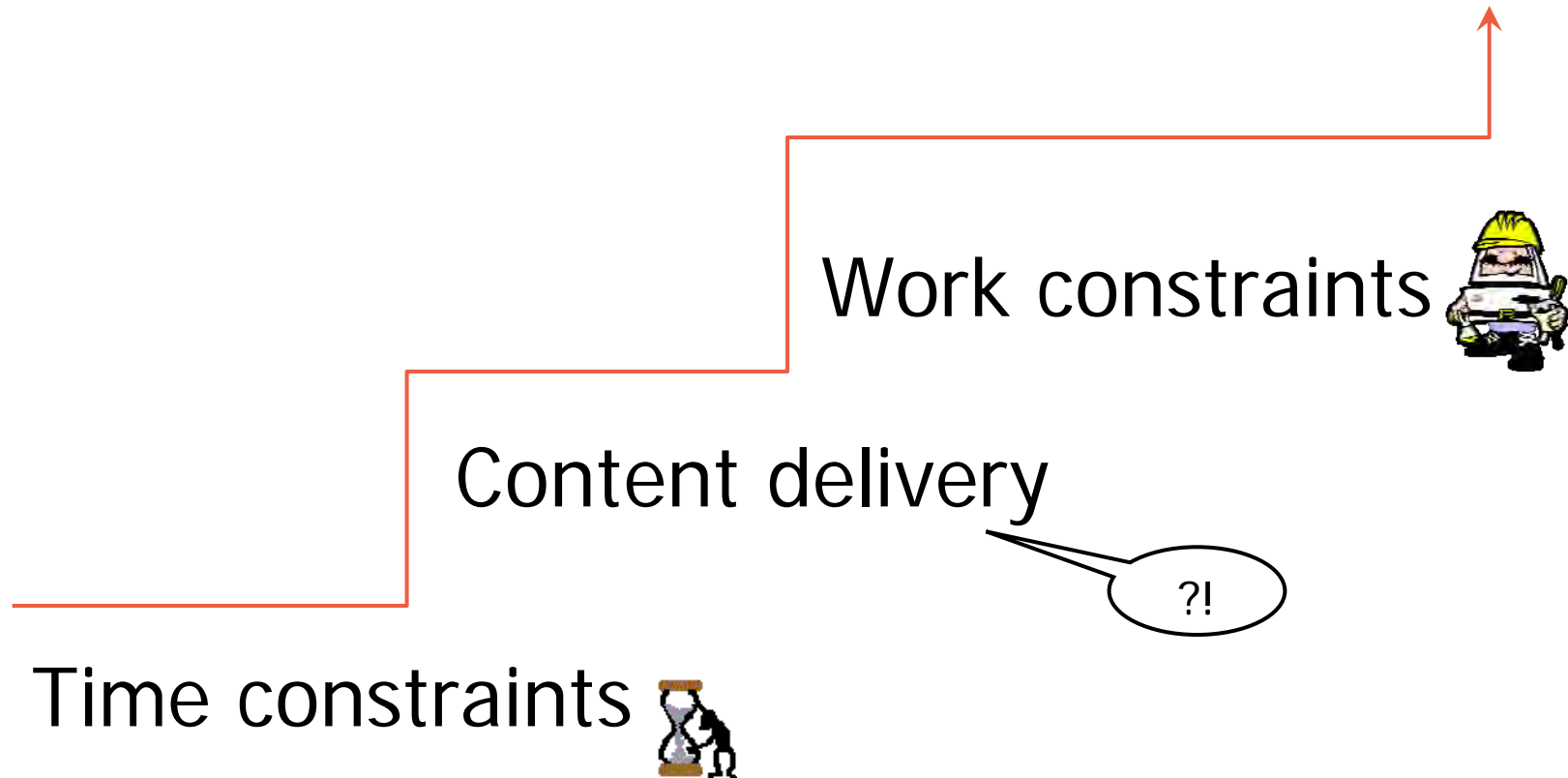


Promotion

- Nursing and midwifery planning and development unit - September 2004
- Flow sheet standardised as febrile neutropenia protocol.
- Regular education sessions



Difficulties encountered

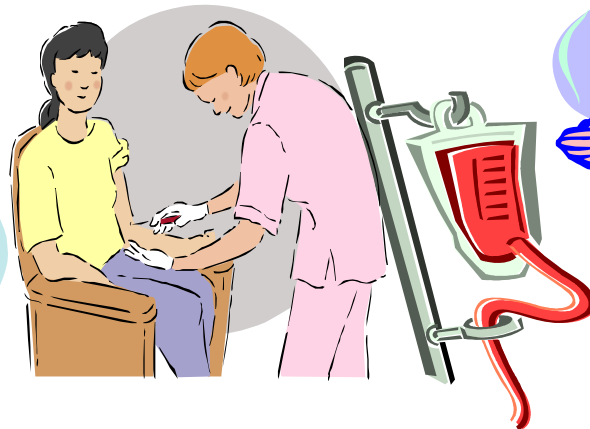
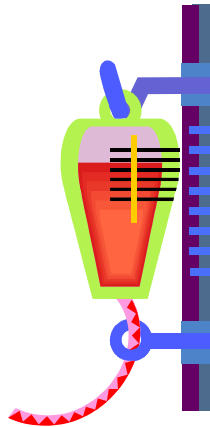
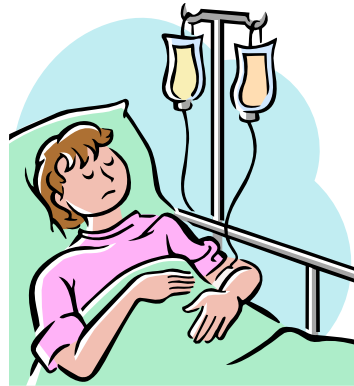


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Conclusions

- TITAN dissemination project was a worthwhile experience
- Our flow-sheet highlighted awareness of febrile neutropenia
- Currently looking at where we can improve standard of care with regard to other haematological toxicities





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