



Innovative Oncology Pharmacy Practice Part II

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Patient's Care Concept in the 21th Century

- Individual tailored therapy
- Systemic Therapy
- More curable to Chronic state
- Old concept “Disease-focus approach”
- New concept “Patient-focus approach”
- Integrating of “Supportive Care”





Problems in Cancer Therapy

- More Complex drug regimens
 - Higher risk of drug-related problem
 - Severe consequences due to high toxic drugs

Regimen: MOPP-ABVD

| Agent | Schedule |
|-----------------------------|---------------|
| <u>Cycle 1</u> | |
| Mechlorethamine (M) | Days 1 and 8 |
| Vincristine (O) | Days 1 and 8 |
| Procarbazine (P) | Days 1 – 14 |
| Prednisone (P) | Days 1 - 14 |
| <u>Cycle 2</u> | |
| Doxorubicin (Adriamycin, A) | Days 1 and 15 |
| Bleomycin (B) | Days 1 and 15 |
| Vinblastine (V) | Days 1 and 15 |
| Dacarbazine (D) | Days 1 and 15 |

Give MOPP and ABVD on alternate months: Am J Med 1980; 69:585-94.

Problems in Cancer Therapy

Adverse drug reaction (ADRs)

- Every dollars spent on drugs
- \$ 1.33 spent for treating ADRs
- Prevention
 - Potential for cost reduction

Multidisciplinary approach for oncology care



Multidisciplinary approach

- American Federation of Clinical Oncology Societies
 - Propose multidisciplinary teams
 - To guarantee optimal treatment outcome for cancer patients



Multidisciplinary approach

- Multinational Association of Supportive Care in Cancer (MASCC)
 - To promote professional expertise in supportive care
 - International scientific exchange of ideas

“ With Their knowledge about drugs,
PHARMACISTS may contribute in different
ways to improve cancer care”



Oncology Pharmacy

- Transition of pharmacy services
 - Drug-oriented to Patient-oriented
- Oncology pharmacy specialty developed
 - Central services for cytotoxic admixture
 - Standard order form
 - AIMS:
 - Increase the safety in handling cytotoxic drugs
 - Decrease prescribing and dosing errors

Pharmacy Services in Oncology

- Central cytotoxic service
- Drug information service
- Therapeutic drug monitoring
- Nutritional support
- Parenteral medication (e.g. antibiotics, analgesia)
- Unit dose system
- Compiling medication history
- **Pharmaceutical care**

Therapeutic drug monitoring

- Narrow therapeutic range of anticancer drugs
 - Risk for the patients in terms of safety
 - Relationship between pharmacokinetics vs. outcome
- Goal
 - To optimize individual dosing
 - Maximum efficacy and minimize toxicity
- Pharmacist's role
 - Establish and discover new analytical method

Elaboration of therapeutic guidelines

- Implement in a multidisciplinary team approach
 - With physicians, pharmacists, others
- Goals:
 - Improve patient's quality of life
 - Reduce unnecessary drug costs
- Example
 - Implementation of evidenced-based antiemetic guidelines (5-HT₃ antagonists)

Pharmacoeconomics



- Guideline establishment
 - Not only based on clinical trials
 - But also include pharmacoeconomic evaluations
- Example:
 - 5-HT₃ in treatment of chemo-induced nausea/vomit
 - Good for acute
 - Not better than high doses of metoclopramide in delayed
 - Cost reduction \$205,000/yr in 700-bed hospital

From Oncology pharmacy to Pharmaceutical Care

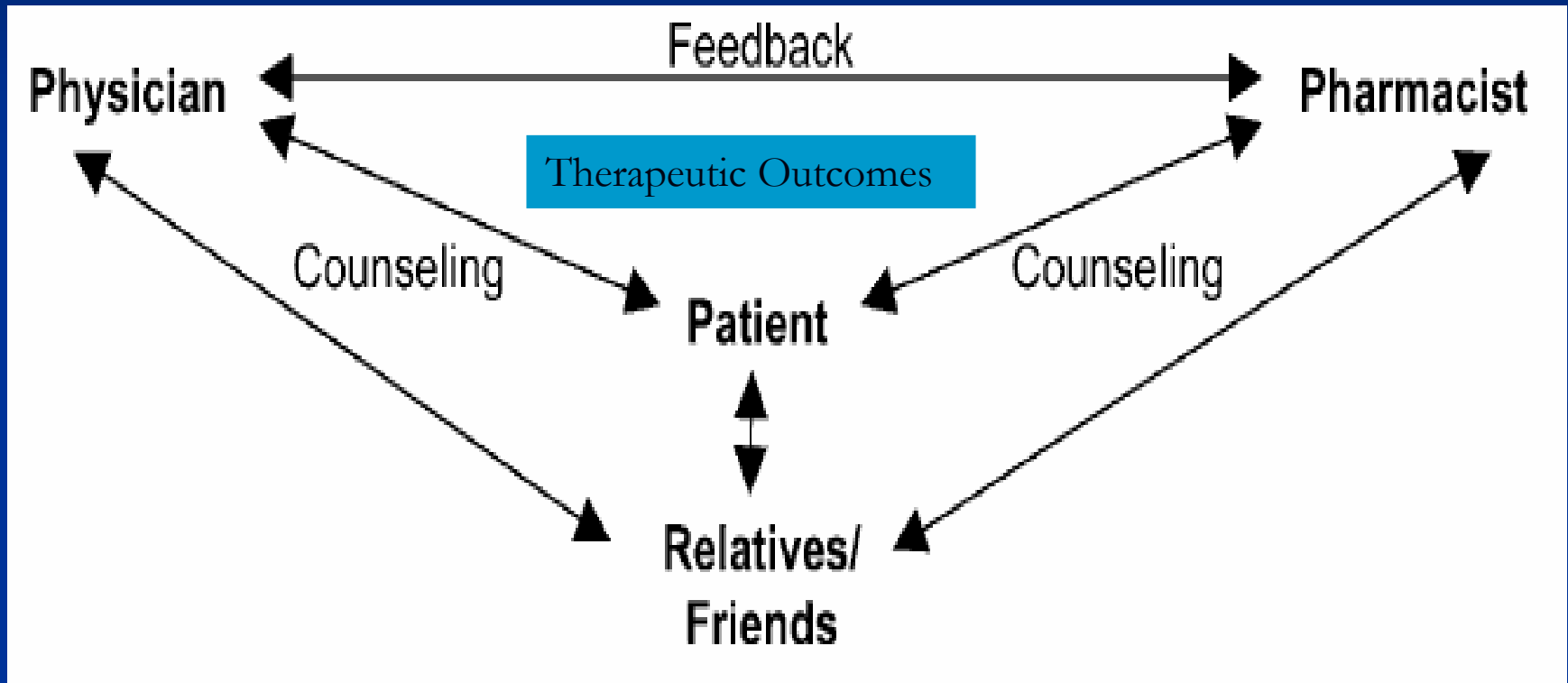


Pharmaceutical Care

- Definition and philosophy
 - Hepler and strand 1990

“The responsible provision o drug therapy for the purpose of achieving definite outcomes that improve a patient quality of life”

Collaboration in Pharmaceutical care Process



Federation Internationale Pharmaceutique (FIP) 1998

American Society of Health System Pharmacy 1996

Pharmaceutical care as a needs-base approach

- For pharmaceutical care providers
 - The main focus is the drug related needs of individual patients
 - When drug related needs are not met, resulted in a variety of drug-related problem

From Drug-related needs to Drug-related problems

Drug-related needs

Drug-related problems

Indication



Additional drug therapy
Unnecessary drug therapy

Effectiveness

Wrong drug for the indication
Dose too low

Safety

Adverse drug reaction
Dose too high

Compliance

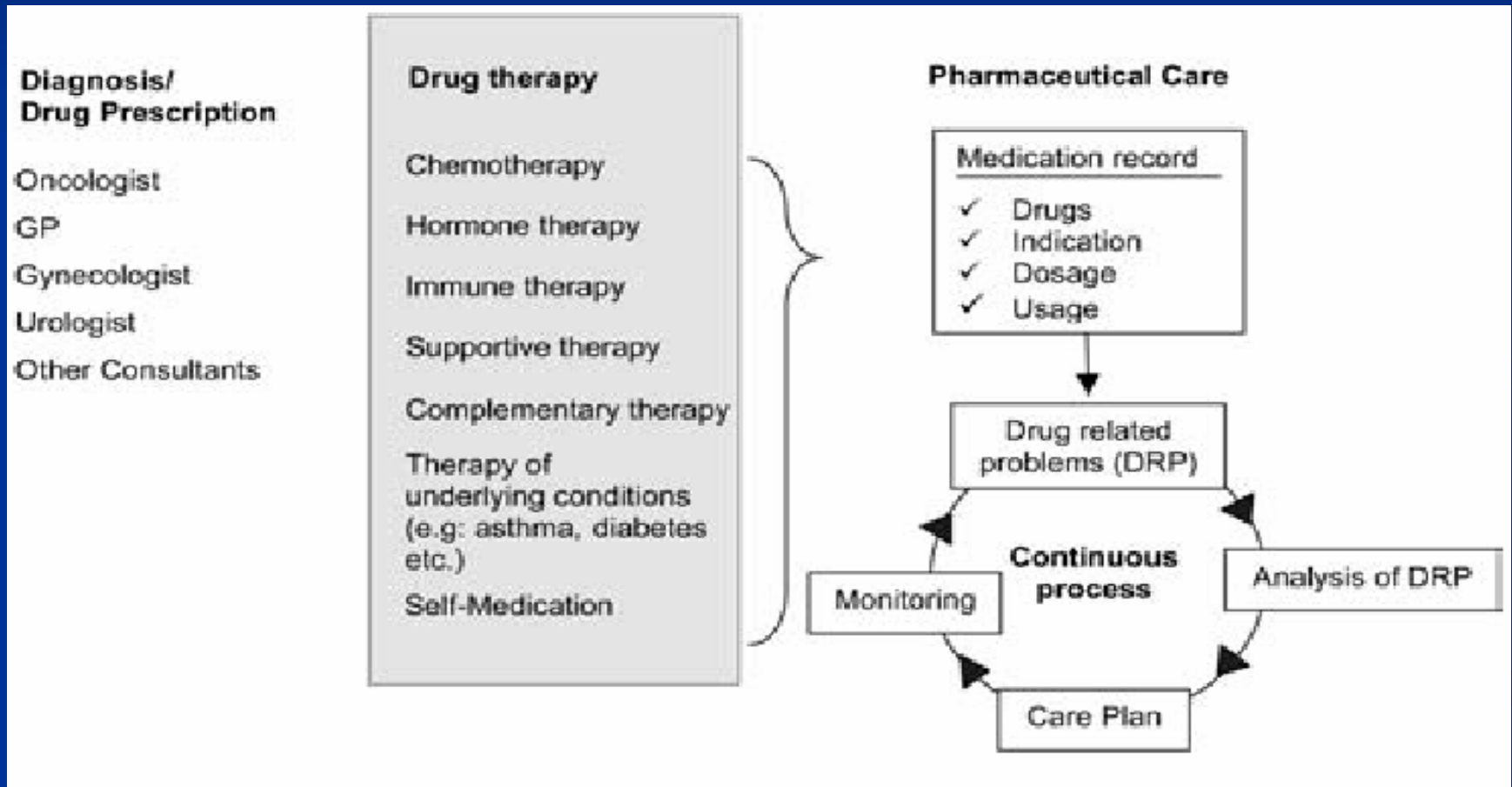
Noncompliance

The care process

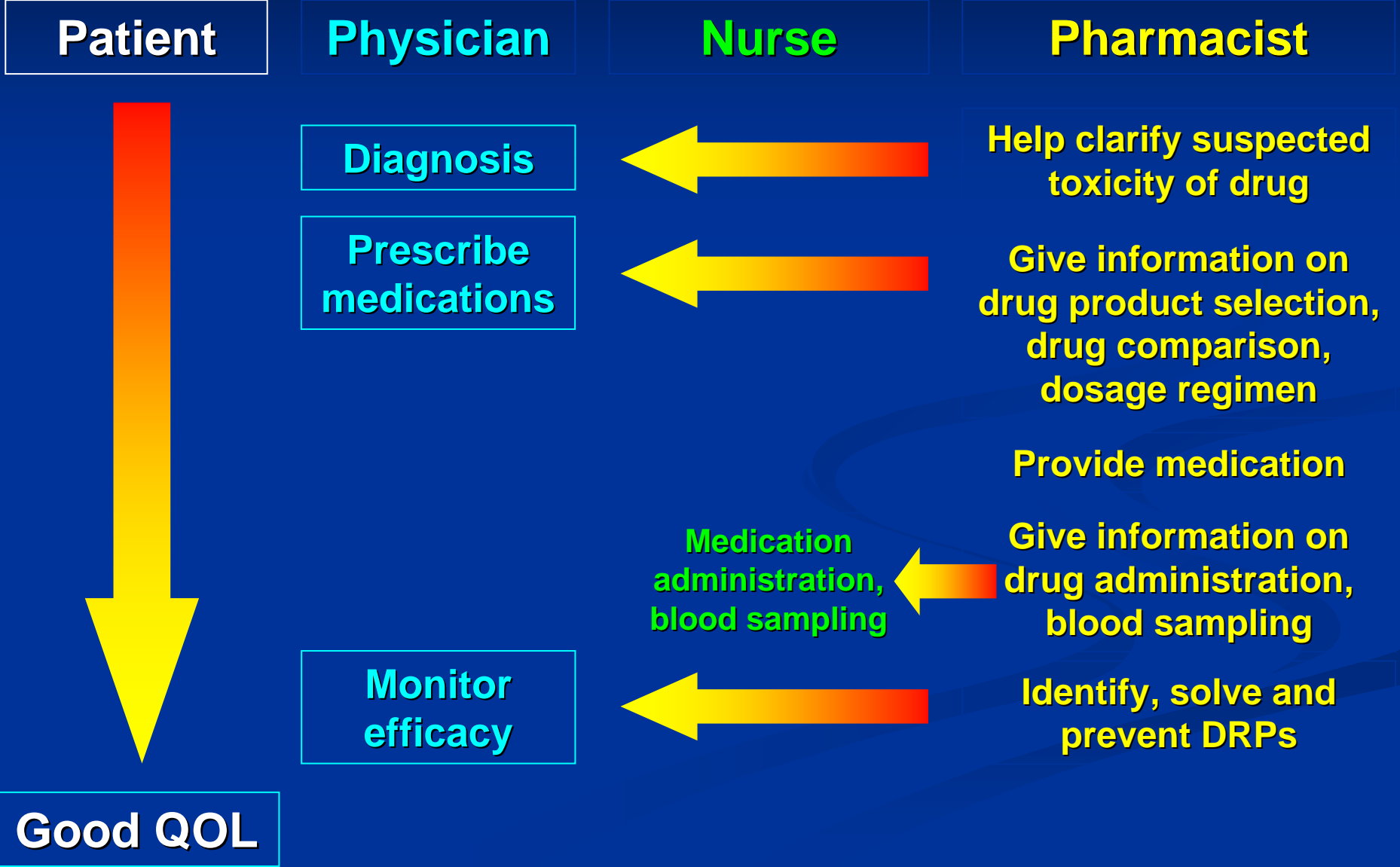
- A continuous process structured according to the SOAP



Pharmaceutical Care in Oncology



Drug Use Process



Patient

Physician

Nurse

Pharmacist

Diagnosis

Prescribe medications



Help clarify suspected toxicity of drug

Give information on drug product selection, drug comparison, dosage regimen

Provide medication

Medication administration, blood sampling



Give information on drug administration, blood sampling

Monitor efficacy



Identify, solve and prevent DRPs



Good QOL

Pharmaceutical aspects of supportive care

- Nutritional support
- Pain Management
- Mucositis prophylaxis and therapy
- Antiemetic prophylaxis



Implementing Pharmaceutical Care

- Before therapy
- During therapy
- After therapy
- Supportive Care in all phases



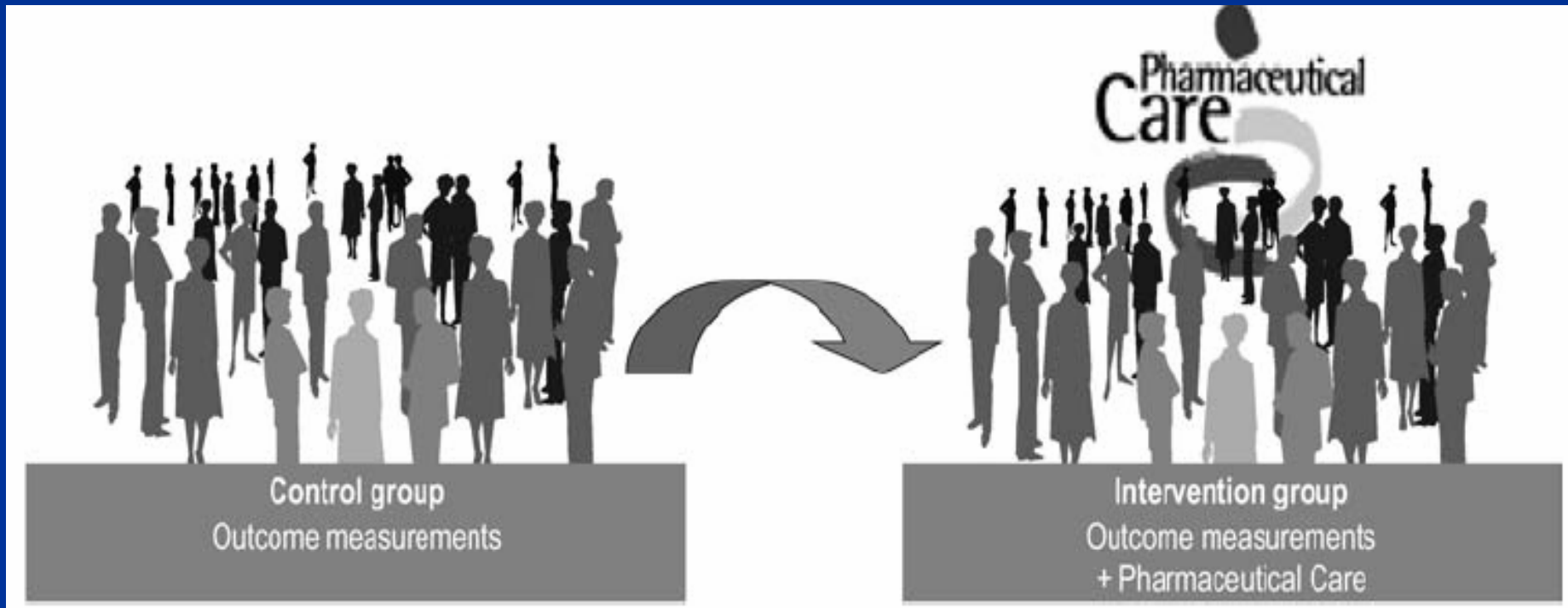
Patient perceptions of the most severe side-effects of cancer chemotherapy

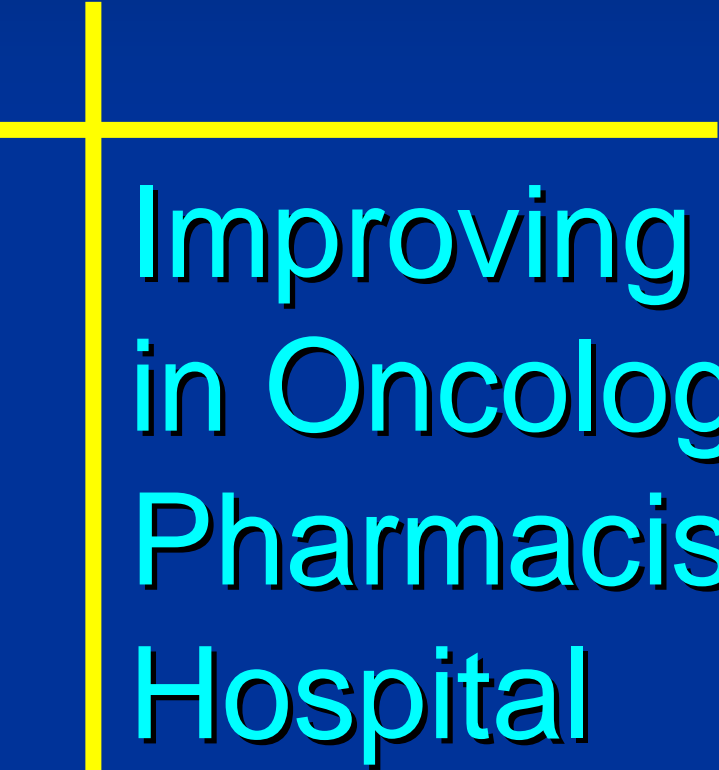
| Rank | 1983 | 1993 | 1995 |
|------|--|------------------|-----------------------------|
| 1 | Vomiting | Nausea | Nausea |
| 2 | Nausea | Constantly tired | Loss of hair |
| 3 | Loss of hair | Loss of hair | Vomiting |
| 4 | Thought of coming for treatment | Effect on family | Constantly tired |
| 5 | Length of time treatment takes at clinic | Vomiting | Having to have an injection |

Example of Documentation

| เดือน | จำนวน (คน) | CMT counseling (ครั้ง) | D/C counseling (ครั้ง) | Total (ครั้ง) | เฉลี่ย ครั้ง/คน |
|--------------|---------------|------------------------------|------------------------------|------------------|--------------------|
| ก.ค. | 51 | 52 | 14 | 66 | 1.29 |
| ส.ค. | 56 | 90 | 34 | 124 | 2.21 |
| ก.ย. | 49 | 82 | 33 | 115 | 2.35 |
| ต.ค. | 37 | 46 | 16 | 62 | 1.68 |
| total | 193 | 270 | 97 | 367 | 1.90 |
| X/mo | 55.14 | 77.14 | 27.71 | 104.86 | 9.43 |

Pharmaceutical Care Research





Improving Pain Management in Oncology Ward by Pharmacists at Srinagarind Hospital

Undertreatment of Pain

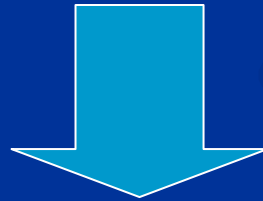


- 12 surveys, n = 2,600 Patients
- > 50 % of patients suffered unrelieved cancer pain
- Pain control > 90 % following basic principle of pain management

Cancer Pain Management

Consists of

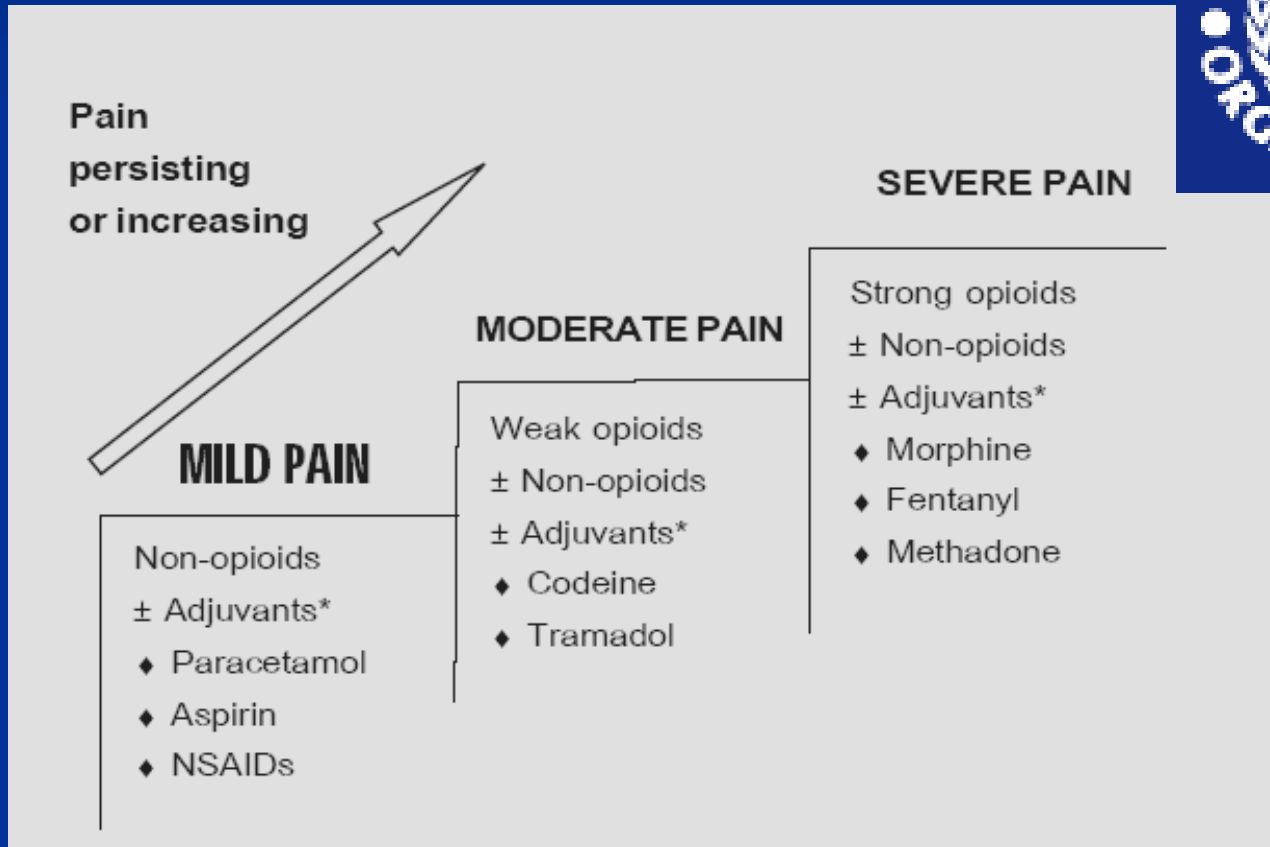
1. Pain assessment
2. Pharmacological treatment
3. Non-Pharmacological treatment



Multi-Disciplinary Team

Pain Management by WHO

Analgesic Ladder



Review Literature

“Irene and Julie,2004”

- Studying in Pain incidence of pt. With metastatic cancer in United Kingdom
- Cancer pt. with pain around 695 pt.



6 units in Ireland

6 units in the South
of England

Outcome

Intensity of pain at Referral and
After 2 Weeks in Care ($N = 358$)

| Pain Level | At Referral | | 2 week after Referral | |
|--------------|-------------|--------|-----------------------|-------|
| | N (%) | 95% CI | N (%) | 95%CI |
| None | 104 (29) | 24-34 | 163 (46) | 40-51 |
| Mild | 86 (24) | 20-28 | 109 (30) | 26-35 |
| Moderate | 117 (33) | 28-38 | 73 (20) | 16-25 |
| Severe | 41 (11) | 8-15 | 13 (4) | 2-6 |
| Overwhelming | 10 (3) | 1-5 | 0 | - |

Procedure

Ward 5E

Group A: Pre-NRS



Intervention by Pharmacist
utilizing pain management
protocol



Post-NRS



Compare Pre & Post-NRS
Pain control

Group B: Pre-NRS



Normal Practice



Post-NRS



Compare Pre & Post-NRS
Pain control



Compare decreased of NRS
between Group A&B



Summary

- Integrating Pharmaceutical Care into Oncology Pharmacy Practice
 - New contributions to multidisciplinary cancer care
 - Professional specialty development
 - Can be applied in various setting



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