

# CURRICULUM VITAE

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## RIWAYAT PENDIDIKAN:

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- Internship : Emma Children's Hospital Amsterdam and the VU Medical Center Amsterdam 1 September – 31 November 2011
- Sp2 : FK UGM Lulus tgl 10 Februari 2016

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- KPS PPDS Ilmu Kesehatan Anak FK UNS periode Juni 2015 – Juni 2018

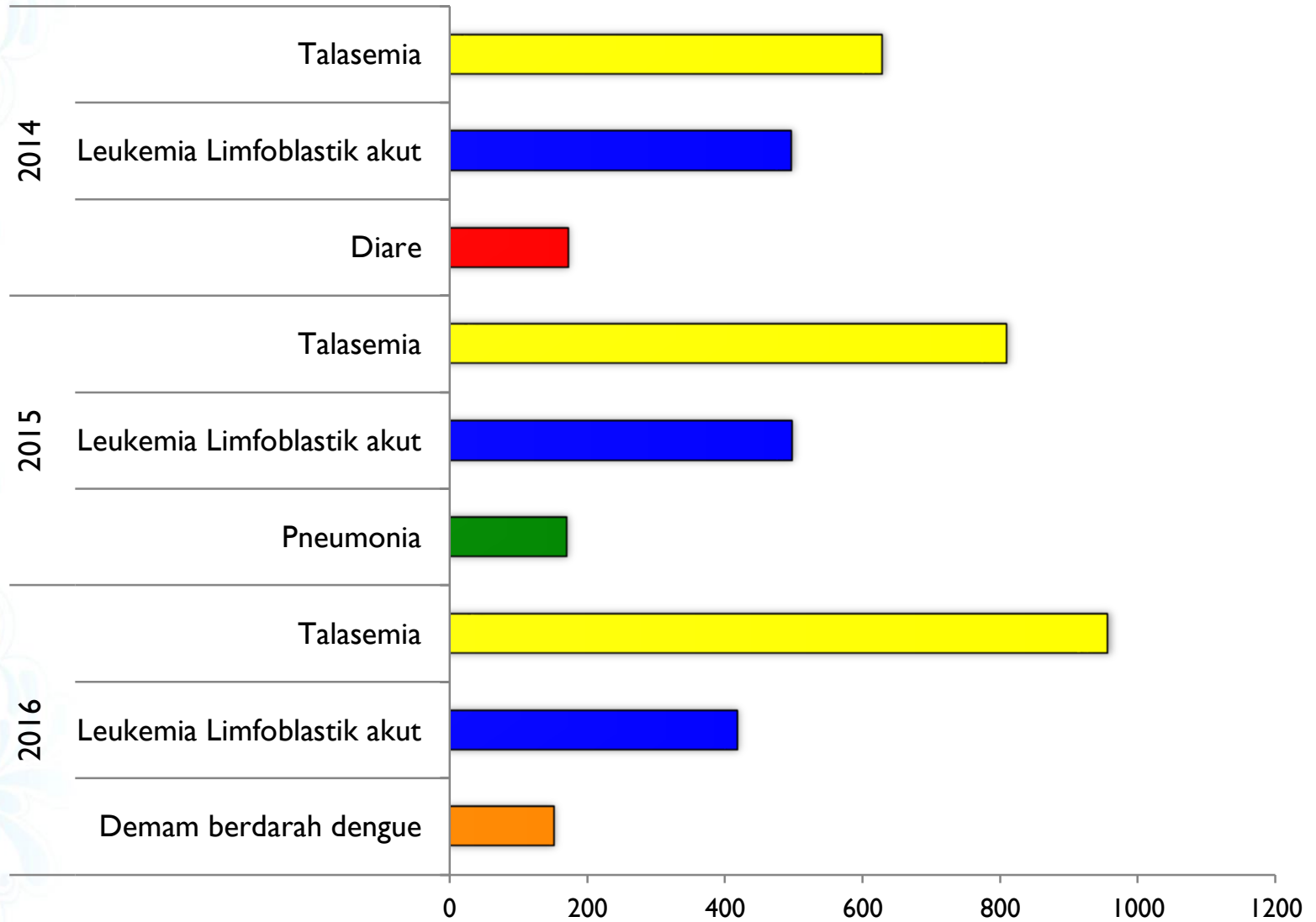




# Pengenalan Dini Tanda dan Gejala Kanker pada Anak

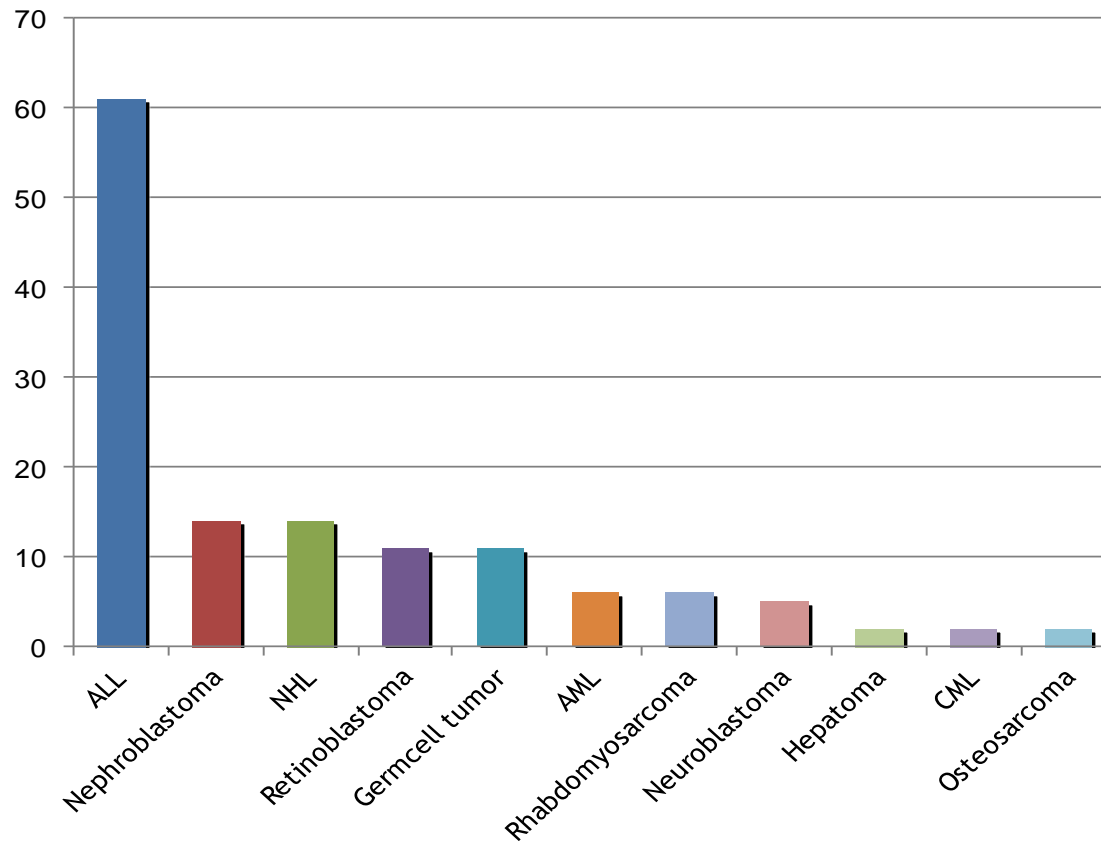
Muhammad Riza, Septin Widiretnani

Bagian Ilmu Kesehatan Anak FK UNS/ RSUD Dr. Moewardi Surakarta



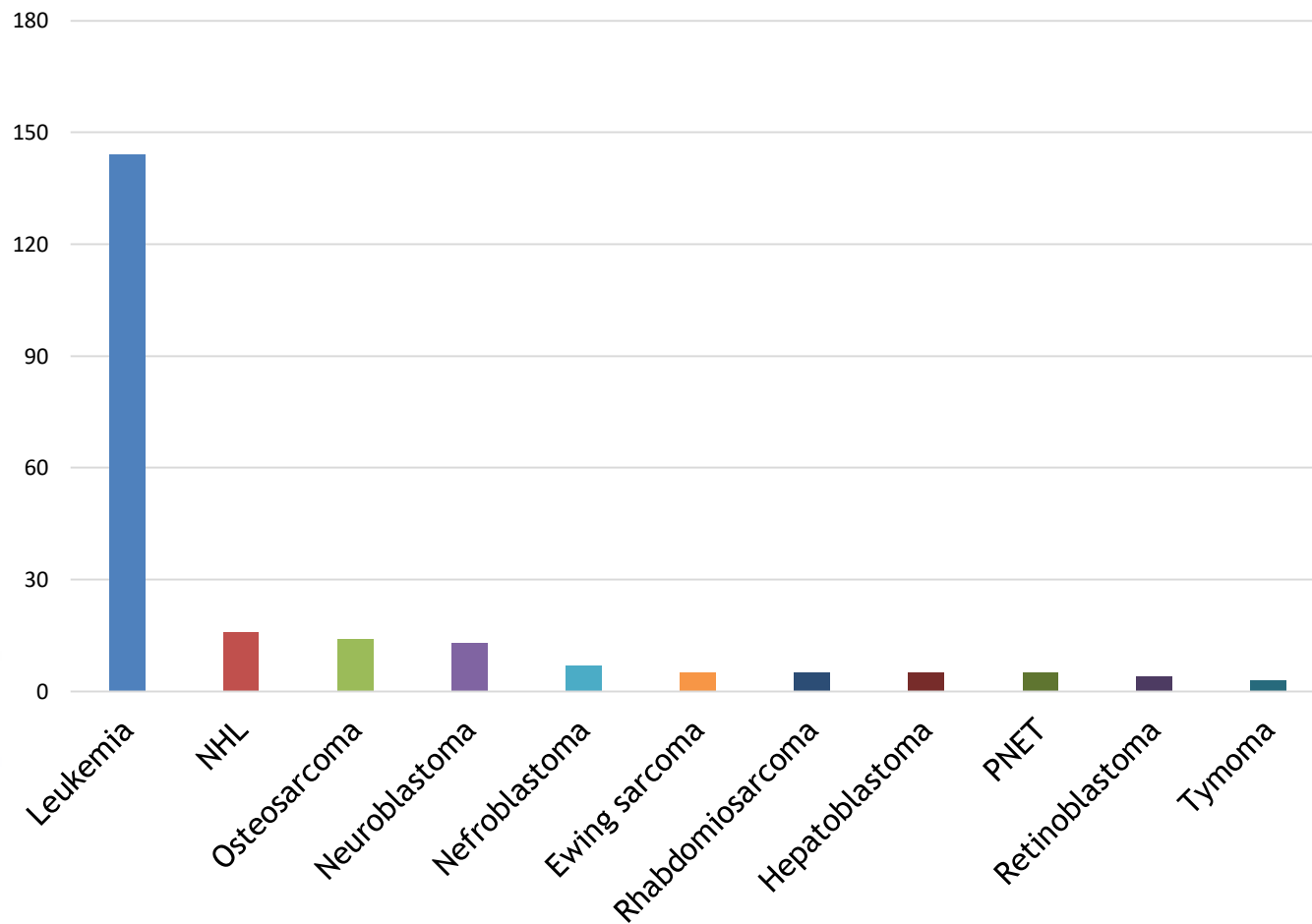


## Profiles of cancer children in Department of Child Health Moewardi Hospital between 2005- 2010





## Profiles of cancer children in Department of Child Health Moewardi Hospital between 2012- 2016





**nature**

International journal of science

**NEWS** • 13 MARCH 2019

## Nearly half of global childhood cancer cases go undiagnosed

*Tens of thousands of cancers are missed each year, particularly in countries where children have poor access to health care.*

# ScienceDaily®

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## Worldwide estimates suggest that nearly 1 in 2 children with cancer are left undiagnosed and untreated



Cari Berita..



# MEDIA INDONESIA

## ***Kanker pada Anak Tersulit Terdeteksi***

Penulis: **Putri Rosmalia Octaviyani**

[putri@mediaindonesia.com](mailto:putri@mediaindonesia.com)

Pada: Rabu, 22 Feb 2017, 07:00 WIB

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## **Kanker pada Anak Belum Bisa Dicegah, Kenali Gejalanya**

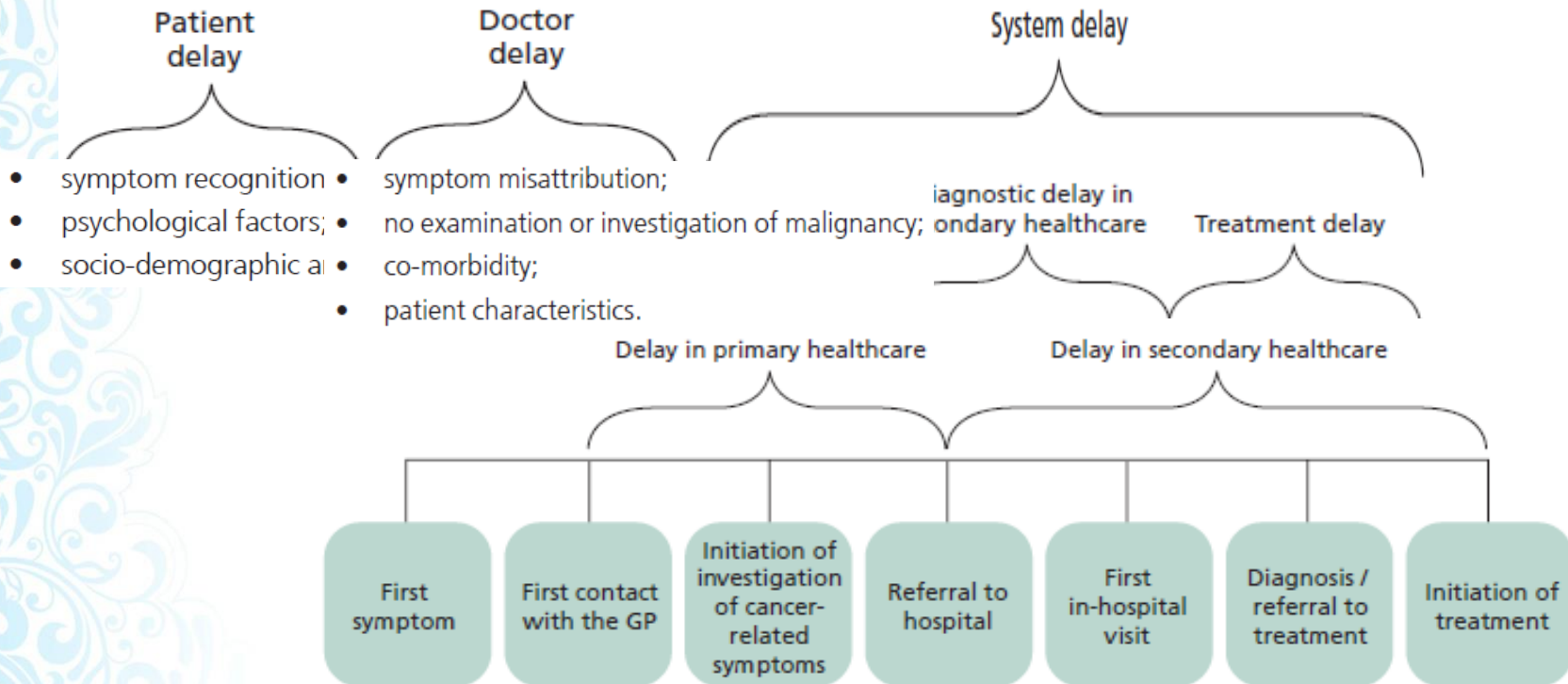
Kompas.com - 19/03/2015, 10:00 WIB



## Pediatric VS Adult

|                  | Pediatric            | Adult                       |
|------------------|----------------------|-----------------------------|
| Etiology         | Not environmental    | Important environmental     |
| Screening        | Minimal or no impact | Critical importance         |
| Chemosensitivity | Very high            | limited                     |
| Outcome          | Most patients cured  | Most patients are incurable |

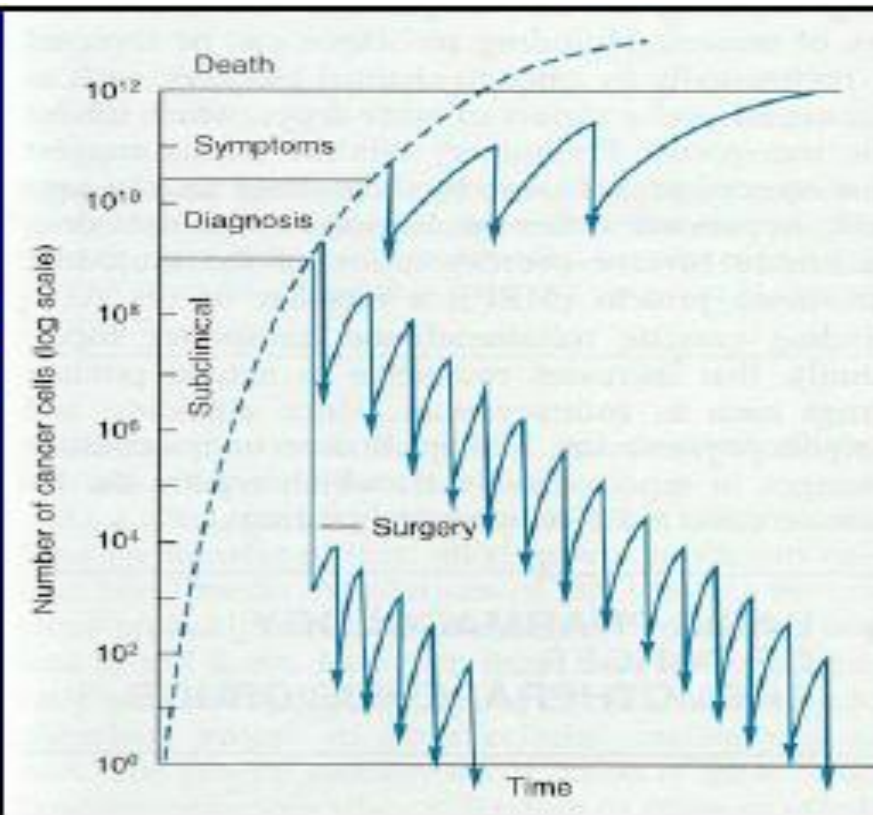
## Categorisation of diagnostic delay



## Why is early diagnosis important?

### Cancer Cell Number and Response to Treatment

Figure 55-1, Page 925  
Bertram G. Katzung  
Basic & Clinical  
Pharmacology





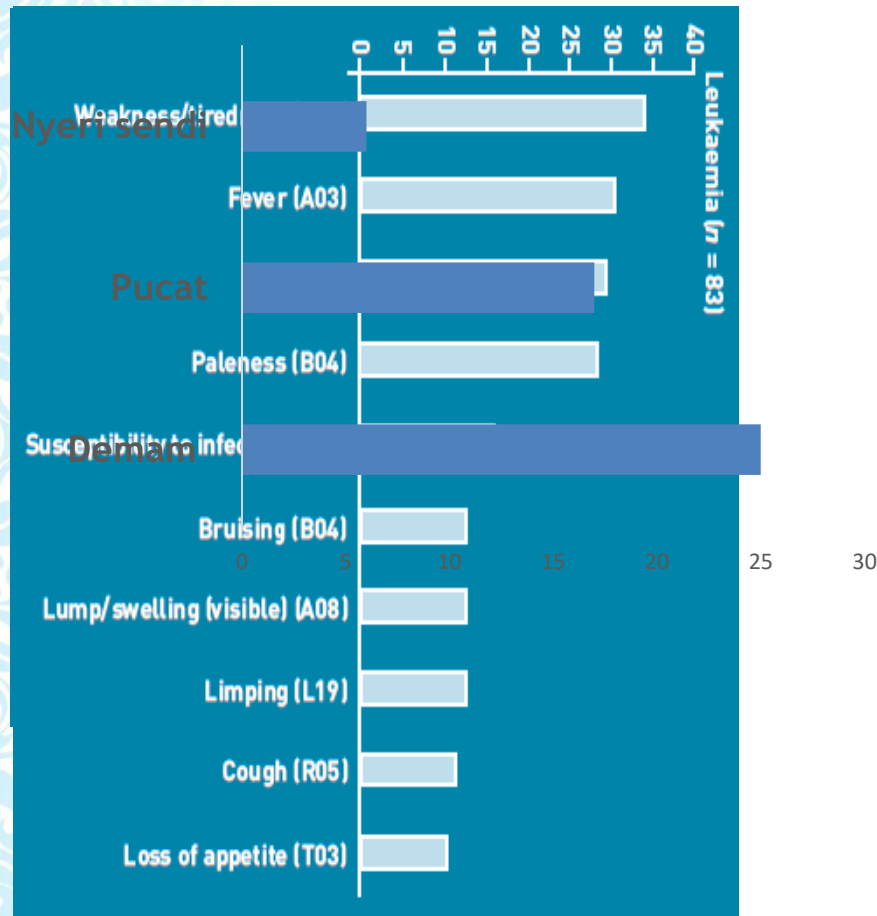
## Signs and Symptoms of Childhood Cancers That Can Mimic These Cancers

| Sign or symptom     | Type of cancer                      | Common conditions in the differential diagnosis                 |
|---------------------|-------------------------------------|---|
| Fever               | Leukemia, lymphoma                  | Infection   |
| Vomiting            | Abdominal mass, brain tumor         | Infection, gastroesophageal reflux                              |
| Constipation        | Abdominal mass                      | Poor diet   |
| Cough               | Mediastinal mass                    | Upper respiratory infection, reactive airway disease, pneumonia |
| Bone or muscle pain | Leukemia, bone tumor, neuroblastoma | Musculoskeletal injury, viral infection                         |



## Signs and Symptoms of Childhood Cancers That Can Mimic These Cancers

| Sign or symptom          | Type of cancer                         | Common conditions in the differential diagnosis              |
|--------------------------|--|--|
| Headache                 | Brain tumor                            | Tension headache, migraine, infection                        |
| Lymphadenopathy (> 2 cm) | Leukemia, lymphoma, metastatic disease | Lymphadenitis, systemic infection, collagen vascular disease |
| Hematuria                | Wilms' tumor                           | Urinary tract infection, glomerulonephritis                  |
| Voiding difficulty       | Rhabdomyosarcoma                       | Congenital urinary tract abnormalities                       |



***Related to bone marrow infiltration***

- Fatigue
- Pallor secondary to anemia
- Secondary to thrombocytopenia
- Signs of infection secondary to neutropenia
- Bone pain secondary to marrow hyperplasia.



## Diagnostic criteria for neoplastic fever

- Lack of evidence of infection on:
  - physical examination
  - laboratory examinations eg sputum smears or cultures, cultures of blood, urine, stool, bone marrow, spinal fluid, pleural fluid and discharge from local lesions
  - imaging studies eg chest radiograph and CT scans of the head, abdomen, and pelvis.
- Duration of fever over two weeks.
- Temperature over 37.8° C at least once each day.
- Lack of response of fever to an empiric, adequate antibiotic therapy for at least seven days.
- Prompt, complete lysis of fever by the naproxen test
  - \* naproxen 375 mg (by mouth) every 12 hours for three days.



## Mechanisms of Fever in Cancer Patients

### Cytokine release by tumor

- Tumor necrosis factor (TNF) and Interleukins (e.g., IL- 1, 2, 6)

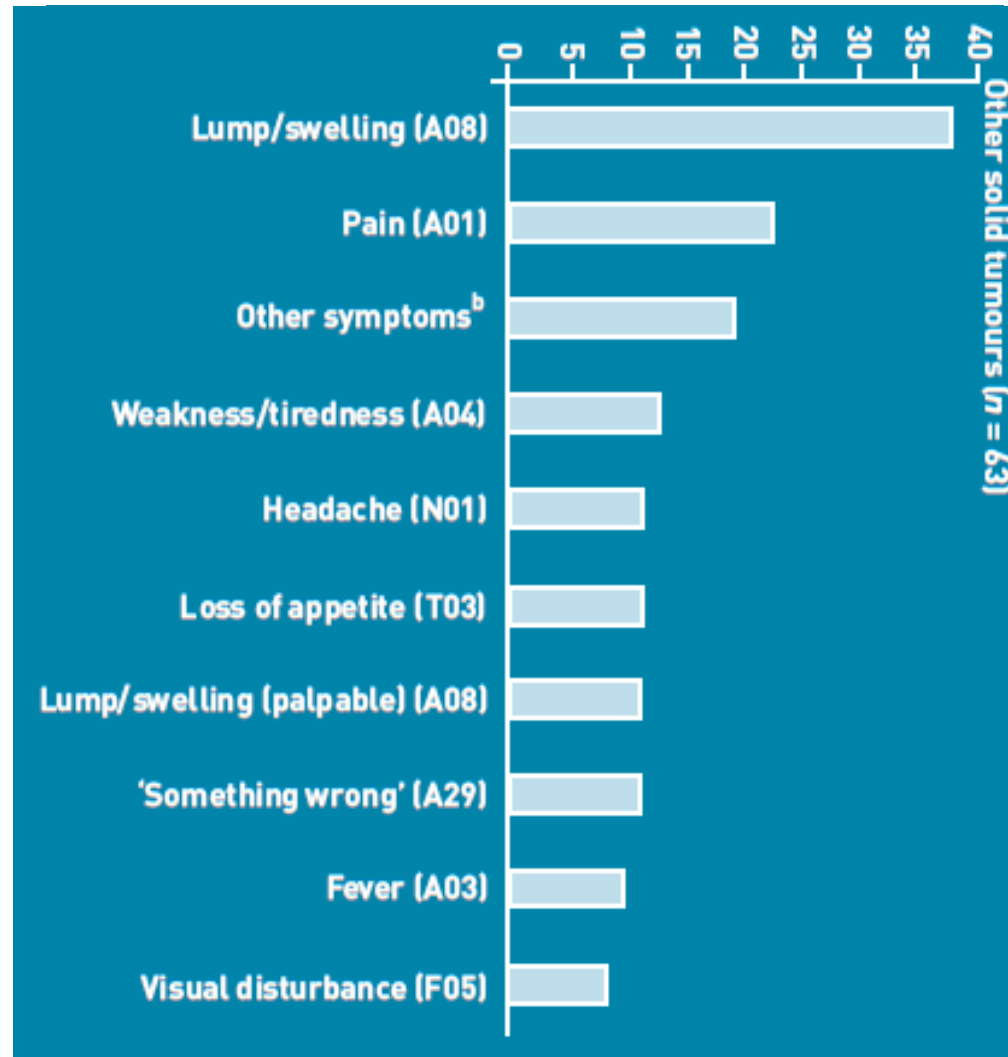
### Tumor obstruction of tubular or hollow structure and subsequent infection

- Bronchus: post-obstructive pneumonia
- Eustacian tube: otitis media
- Hepatobiliary system: cholangitis

### Hypothalamic metastases (altered thermoregulation)

### Medications

- Allergic reaction
- Idiosyncratic reaction

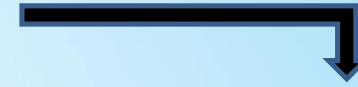
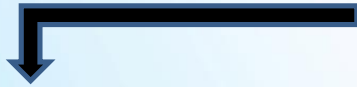


# Lymphadenopathy

History  
(fever, weight loss, night sweats )



Examination (distribution)

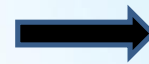


Generalized adenopathy ( $\geq 2$ )  $\rightarrow$  systemic disease

Localized adenopathy



High risk for malignancy (abnormal CBC, LDH, bone marrow involvement)



- for malignancy



Infection or other inflammatory state likely



Observation with/ out antibiotics 2-4 weeks

+ for malignancy

- Hodgkin disease
- Non-Hodgkin lymphoma
- Leukemia
- Neuroblastoma
- Rhabdomyosarcoma
- Histiocytic disorders





## Curiga Kanker (Limfoma) ?

- Multipel tidak diketahui sebabnya
- KGB supraklavikula atau popliteal
- Gejala sistemik yang bermakna
- Hepatomegali atau splenomegali
- KGB mediastinum membesar
- Anemia atau perdarahan
- Antibiotik → respon negatif
- Ukuran tidak mengecil , bahkan membesar



# Peran Ultrasonografi

- Aman
- Dapat membedakan keganasan vs proses reaktif
  - **Reaktif**
    - <1cm, normal, oval, hipervaskuler, aliran darah meningkat
  - **Kanker**
    - >1cm, bulat, no echogenic hillus, necrosis (+), low blood flow, extracapsular spread
- Sensitivitas 95% dan Spesifitas 83%



## When and How to Evaluate Signs and Symptoms for Cancer

| Symptom             | When to evaluate   | Test  |
|---------------------|--|---|
| Fever               | Fever lasts <b>longer than 14 days</b> with no identifiable cause.   | CBC with differential                         |
| Vomiting            | Vomiting lasts <b>longer than 7 days</b> with no identifiable cause.<br>Vomiting is associated with headache during sleep. | Abdominal and head CT scans<br>Head CT scan   |
| Constipation        | Constipation is <b>prolonged (&gt; 1 month)</b> and does not respond to conventional measures.                             | Abdominal and pelvic CT scans                 |
| Cough               | Cough is <b>prolonged (&gt; 2 weeks)</b> and has no identifiable cause.  | Chest radiograph                              |
| Bone or muscle pain | Pain is <b>prolonged (&gt; 2 weeks)</b> and has no identifiable cause.   | Plain-film radiograph, bone and CT scans, CBC |



## *...When and How to Evaluate Signs and Symptoms for Cancer*

| Symptom                  | When to evaluate  | Test   |
|--------------------------|---|--|
| Headache                 | Headache occurs during sleep, is associated with neurologic signs and vomiting, or occurs in the absence of a family history of migraine. | Head CT scan                                       |
| Hematuria                | Evaluate <b>immediately</b> if hematuria has no identifiable cause.   | Abdominal ultrasound examination                   |
| Voiding difficulty       | Evaluate immediately if voiding difficulty has no identifiable cause.   | Abdominal ultrasound examination                   |
| Lymphadenopathy (> 2 cm) | Evaluate if lymphadenopathy <b>does not respond to a 7-day course of antibiotic.</b>  | CBC with differential, lactate dehydrogenase level |



DRAFT II

PEDOMAN PENEMUAN DINI  
KANKER PADA ANAK



KEMENTERIAN KESEHATAN RI  
DIREKTORAT JENDERAL PP & PL  
DIREKTORAT PENGENDALIAN  
PENYAKIT TIDAK MENULAR  
2011

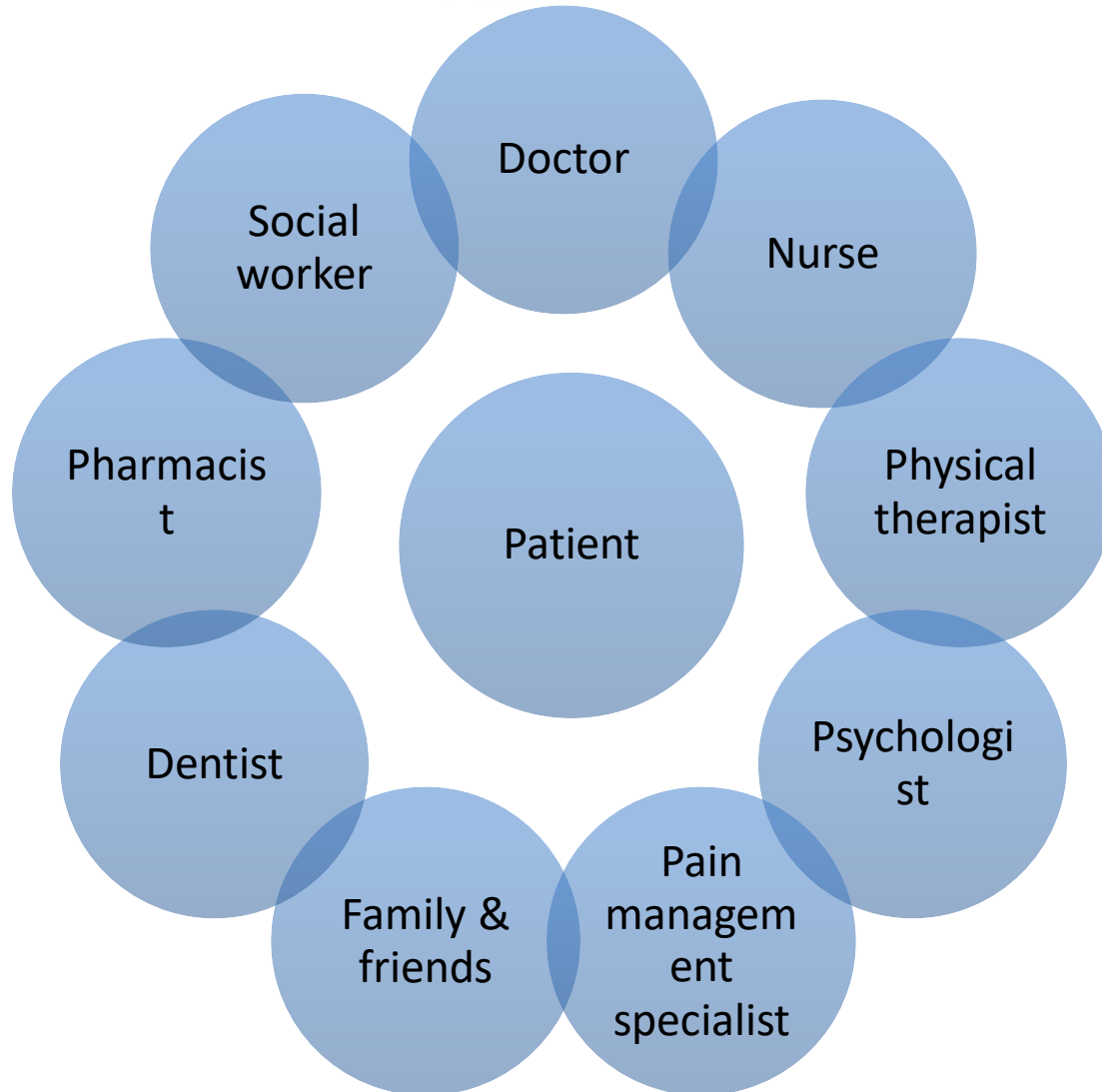



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PEDOMAN  
PENEMUAN DINI  
KANKER  
PADA ANAK



KEMENTERIAN KESEHATAN RI  
DIREKTORAT JENDERAL PENGENDALIAN PENYAKIT DAN PENYEHATAN LINGKUNGAN  
DIREKTORAT PENGENDALIAN PENYAKIT TIDAK MENULAR  
2015





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# Terima Kasih

