STRATEGIC AND TACTICAL HOSPITAL BED MANAGEMENT

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Agenda

- Introduction
- Hospitals visits
- Principal statement of facts
- Synthesis of issues and discussion
- Conclusion

Introduction

- **Hospital bed management**
  - Critical resource through the patient flow
  - Direct impact on occupation rates
  - Bed allocation to elective patients or nonelective patients while taking into account specific constraints
  - Hard to manage due to uncertainty and numerous constraints
- **Costly resource**
- **Necessary but limited resource whose use is planned or not**

Estimated length of stay

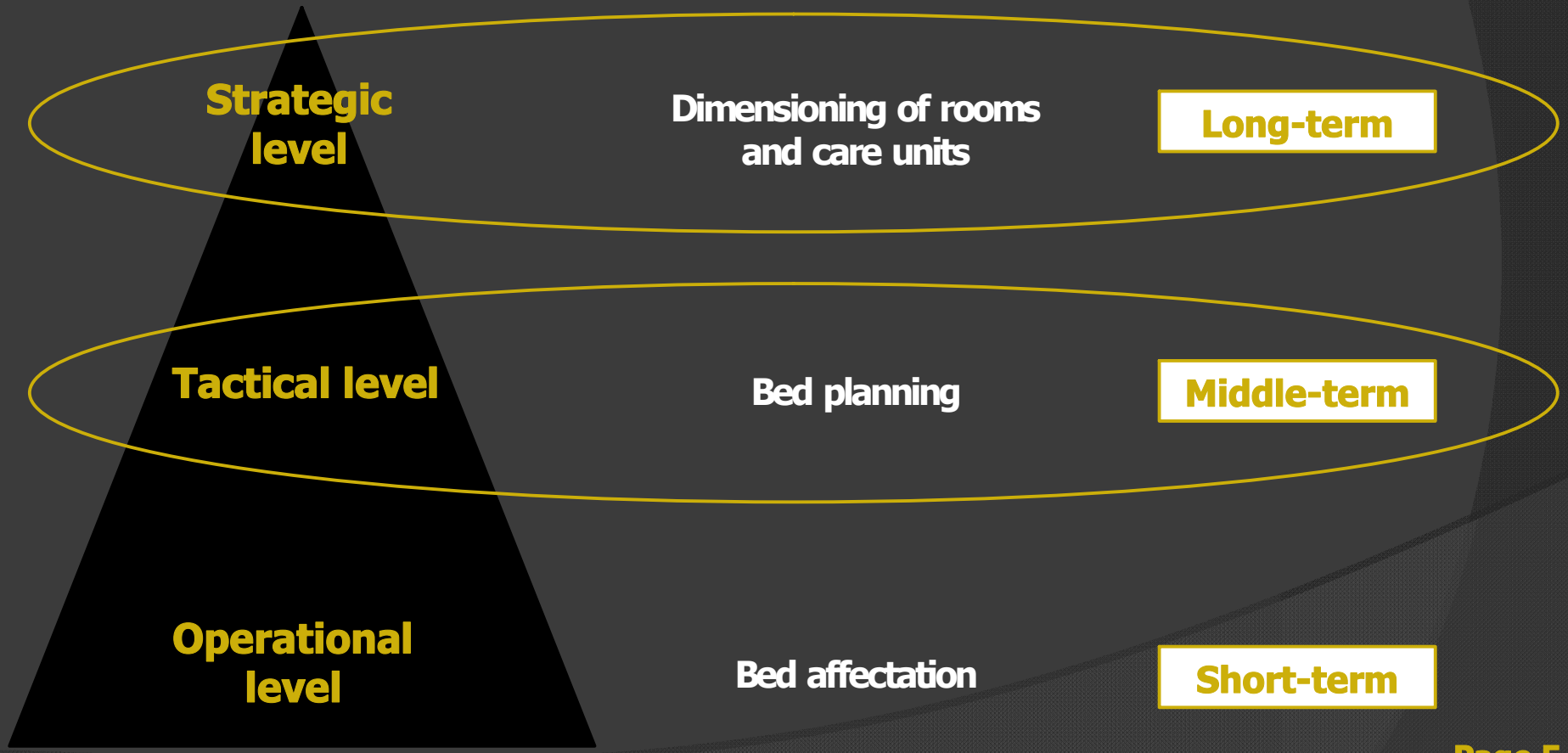
Planning perturbation

Introduction

- **Constraints to be taken into account:**
  - single-sex rooms
  - length of stay to be estimated
  - preferences in terms of room type
  - notion of asepsis
  - social isolation
  - etc.
- **Constraints specific to paediatrics:**
  - what is the age limit for a single-sex room?
  - constraints linked to adults accompanying the child

Introduction

- Three hierarchical levels (*Roth and Van Dierdonck, 1995*)



Introduction

- **Objectives of the project**

  - Optimize the hospital bed management under constraints
  - Strategic and tactical levels

  - First step: hospitals visits – qualitative approach
  - Second step: collecting data based on quantitative questionnaires administered to patients leaving the hospital (internal medicine unit)
  - Strategies evaluation based on financial, human, etc. aspects.

Hospital visits

- About fifteen hospitals were visited
  - Size
  - Private vs. Public
  - Mono vs. Multi sites
  - Hospital type (university, general, etc.)
  - % emergencies vs. % planned cases
- Different types of unit care management (*Ben Bachouch et al., 2007*)
  - By specialty
  - By length of stay
  - By group of specialties

But….

Sometimes, several types of management exist inside the same structure

Hospital visits

- Different types of collaboration
  - Multi site structures
  - Collaboration between two hospitals from different networks
  - Collaboration with other structures
  - Collaboration with two cross-border hospitals
  - Collaboration with GPs

Hospital visits

Hospital	Country	Size	Site(s)	Hospital type	a)	b)	c)	d)	e)	f)	g)	h)	i)	j)	k)	l)
1	Belgium	Big	Multi	General with univ... acter							X	X				
2	Belgium	Big	Multi													
3																X
4																
5																
6															X	X
7																X
8																
9	Belgium	Medium	Multi	General	X	X	X		X	X	X	X	X	X		X
10	Belgium	Medium	Mono	General	X	X		X	X		X	X		X		
11	Belgium	Medium	Mono	General	X	X	X	X				X	X	X	X	
12	Belgium	Small	Mono	University	X		X			X			X	X	X	
13	France	Big	Multi	Hospital center		X	X	X			X		X	X	X	
14	France	Medium	Mono	Regional hospital center				X		X						
15	France	Medium	Mono	Hospital center							X	X				
16	France	Big	Mono	University hospital center	X	X	X	X	X		X	X	X			
Number of occurrences					9	11	9	8	8	3	10	9	8	11	4	4

Late exits imply that the next patient needs to wait for his room

Statement of facts

Introduction – Visits – **Facts** – Discussion – Conclusion

- Patient in the "wrong" care unit
  - Physician's visits
  - Nursing staff competencies
  - Consequences due to transfers
- Type of room not in adequacy with initial choice
- Obstructions upwards and downwards
  - Emergencies
  - Temporary emergency service
  - Rest home, rehabilitation center, etc.
- Costly internal and external transfers
- Problems linked to late exits → Operational level

Discussion

- Next step: collecting data

  → Creation of a quantitative questionnaire oriented « bed management »

  → Questionnaire administered in care units – internal medicine

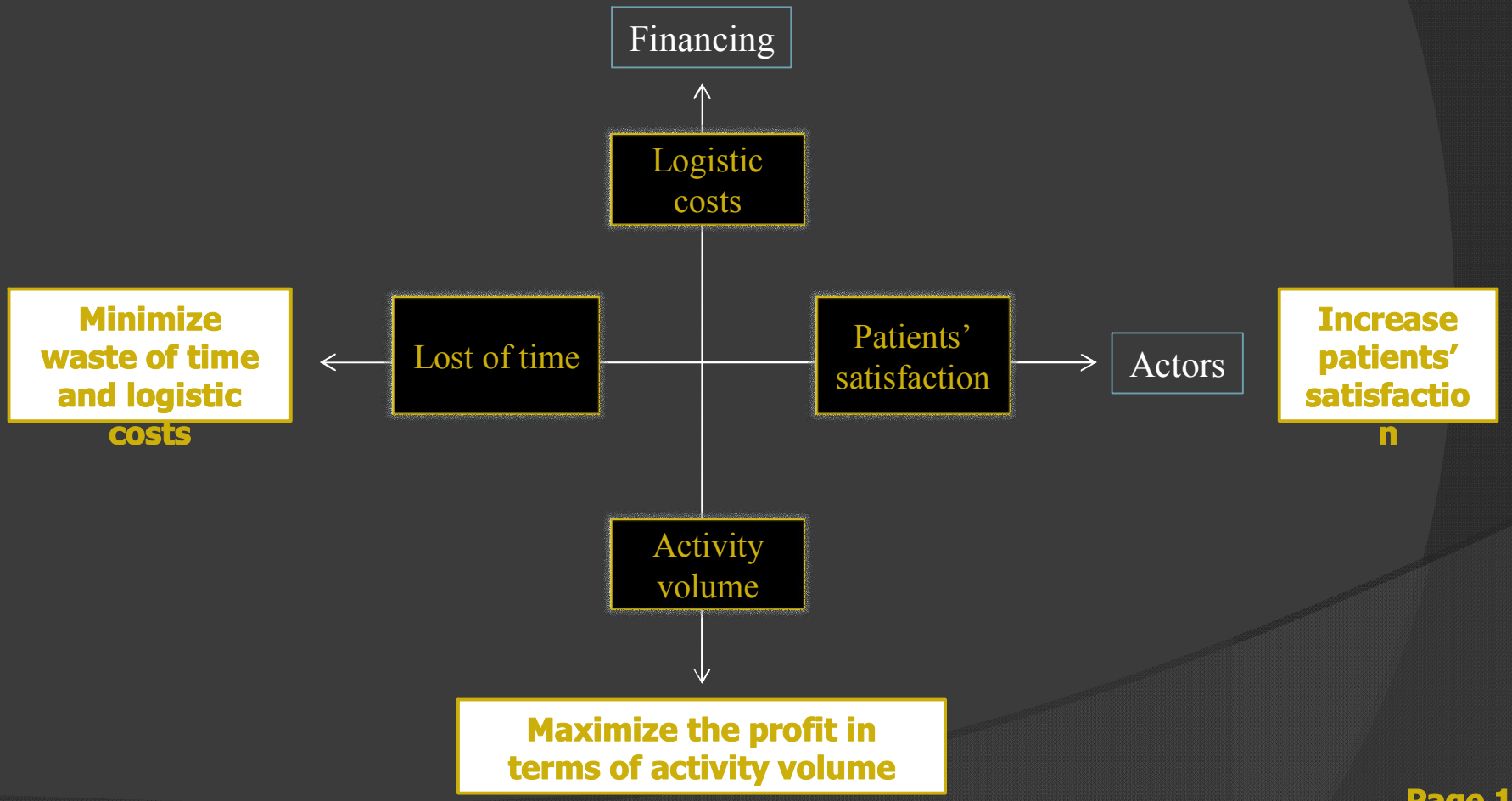
  → Collecting data in two times

Discussion

- **Principal sections of the questionnaire**

  - General description of the patient
    - Dates and time + hours of exit
    - Pathology
    - Length of stay
    - Hospitalisation insurance
    - Previous experience in hospital and feeling about it
    - Emergencies or planned cases?
  - Pre-admission (if existing)
  - Admission and welcome
    - Room type given
  - Internal transfers
  - Exit and end of hospitalisation
    - After the hospitalisation
    - Social service

Reformulation of the problem



Discussion

- Model the different issues
- Develop an optimization tool in order to reorganize the structure of care units
- Modulate care units in terms of infrastructure and management
- Impact on corollary costs
- Different scenarios need to be chosen and refined
  - Lack of beds downwards → work on patients' pathways
  - Grouped bed management for multi sites hospitals

Conclusion

- Lots of constraints need to be taken into account, without forgetting the possible perturbations

- Lots of routes of improvement in the near future

Thank you for your attention