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PLATINEA

A platform for innovation of
existing antibiotics

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Topics

1. Why Platinea? Addressing a societal challenge
2. A collaboration platform: partners and workflow model
3. Six work-packages...
4. Focus on WP4: Availability (shortages)
5. Problems and reflections

Resistance is only part of the problem

1. Lack of R&D of new antibiotics
2. Access to existing antibiotics (shortages): challenge nr 1
3. Overuse and misuse of antibiotics: challenge nr 2
4. Knowledge gaps on how existing antibiotics should be used
 - Optimal dosing and treatment duration
 - Which antibiotics are ecologically favourable?
 - Combination therapy – when and how?
 - Risk factors for resistance and treatment failure
 - Which stewardship interventions are effective?

PLATINEA

A platform for innovation of existing antibiotics

- 21 partners from academia, health care, public authorities, and industry
- Funded by Vinnova – Sweden’s Innovation Agency 2017-2026 (first 10 MSEK, now 40 MSEK)

”...to preserve and enhance the value of existing antibiotics by improving access and precision in antibiotic use”



Solutions

A NEEDS-DRIVEN APPROACH

- Systematic selection of research projects based on medical needs
- Implementation in health care
- Ensuring access to antibiotics
- Increased dialogue and interaction

Moving from “one size fits all” to precision medicine.

The right antibiotic, to the right patient, at the right time and dose

PLATINEA'S 10 PRIORITY SOLUTIONS AGAINST ANTIBIOTIC SHORTAGES

1. INCREASED SECURITY STOCKS
2. CENTRAL COORDINATION OF PROCUREMENT
3. INTEGRATED IT SYSTEM
4. REWARDING SUSTAINABILITY AND PRECISION
5. TENDERS WITH PARALLEL SOURCING
6. HIGHER PRICES FOR SELECTED ANTIBIOTICS
7. DELINKED YEARLY PAYMENT
8. SIMPLIFIED REGISTRATION OF OLD ANTIBIOTICS
9. ORDERLY AND PLANNED DEREGISTRATION
10. NORDIC AND INTERNATIONAL COLLABORATION



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Strama



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**AKADEMISKA
SJUKHUSET**

**region
västerbotten**

Recipharm
good for business

**REGION
SKÅNE**

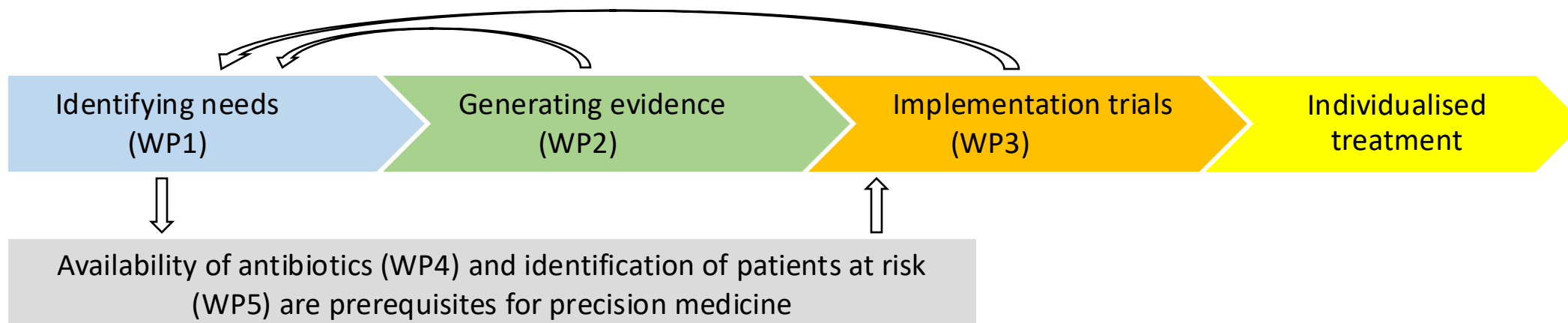


LIF – de forskande
läkemedelsföretagen

Partners

- Academia/Research
 - Uppsala Universitet
 - Linköpings Universitet
 - Karolinska Institutet
 - Göteborgs Universitet
 - Umeå Universitet
 - RISE
- Public authorities
 - Folkhälsomyndigheten (PHA of Sweden)
- Others
 - Apotekarsocieteten (National Pharmacists Association)
- Healthcare providers
 - Akademiska Sjukhuset
 - Skånes Universitetssjukhus
 - Strama
 - Karolinska Sjukhuset
 - Region Västerbotten
- Industry
 - Viatrix
 - MSD
 - Pfizer
 - Recipharm
 - Tamro/Drug distributors association
 - Karo Pharma
 - CortexLS
 - LIF (Swedish Association of Pharmaceutical Companies)

Organisation and workplan



Transparency and communication between sectors is key
Research and implementation is based on medical needs

WP1: Inventory of needs

- Orient optimization studies: national survey on **knowledge gaps in collaboration with the PHA and the Swedish research council**
- Updated list of **critical antibiotics with supply risk**
- **Shortages and de-registrations:** open webinars with representatives from health care and industry, critical events analyses and actions

WP2: Optimisation studies; clinical and preclinical

RCTs and observational studies

- Treatment of UTI caused ESBL producing E. coli
- **Combination therapy**
- Pharmacokinetic studies and interventions to **optimise and individualize dosing**
- Impact of antibiotics on the **intestinal microbiome**
- A nationwide study on **how recently introduced antibiotics are used**, to guide future interventions for responsible use

In collaboration with a new clinical research network for acute infections funded by the Swedish research council – ACTION Sweden

WP3: Implementation

- Antibiotic stewardship rounds implemented and evaluated at all hospitals in Sweden
- Building network for surveillance and interventions in paediatric clinics
- Software-guided dosing of vancomycin
- National use of recently marketed antibiotics

WP5: Identifying patients at risk

- Using AI and machine learning to analyse big health datasets from the electronic medical systems
- Building algorithms to **identify patients at risk of worse outcomes**, or drug-bug mismatch
- Finding **low-risk patients where antibiotics can be avoided**
- Registry-based studies on antibiotic exposure vs. outcomes in different patient populations

WP4: Availability

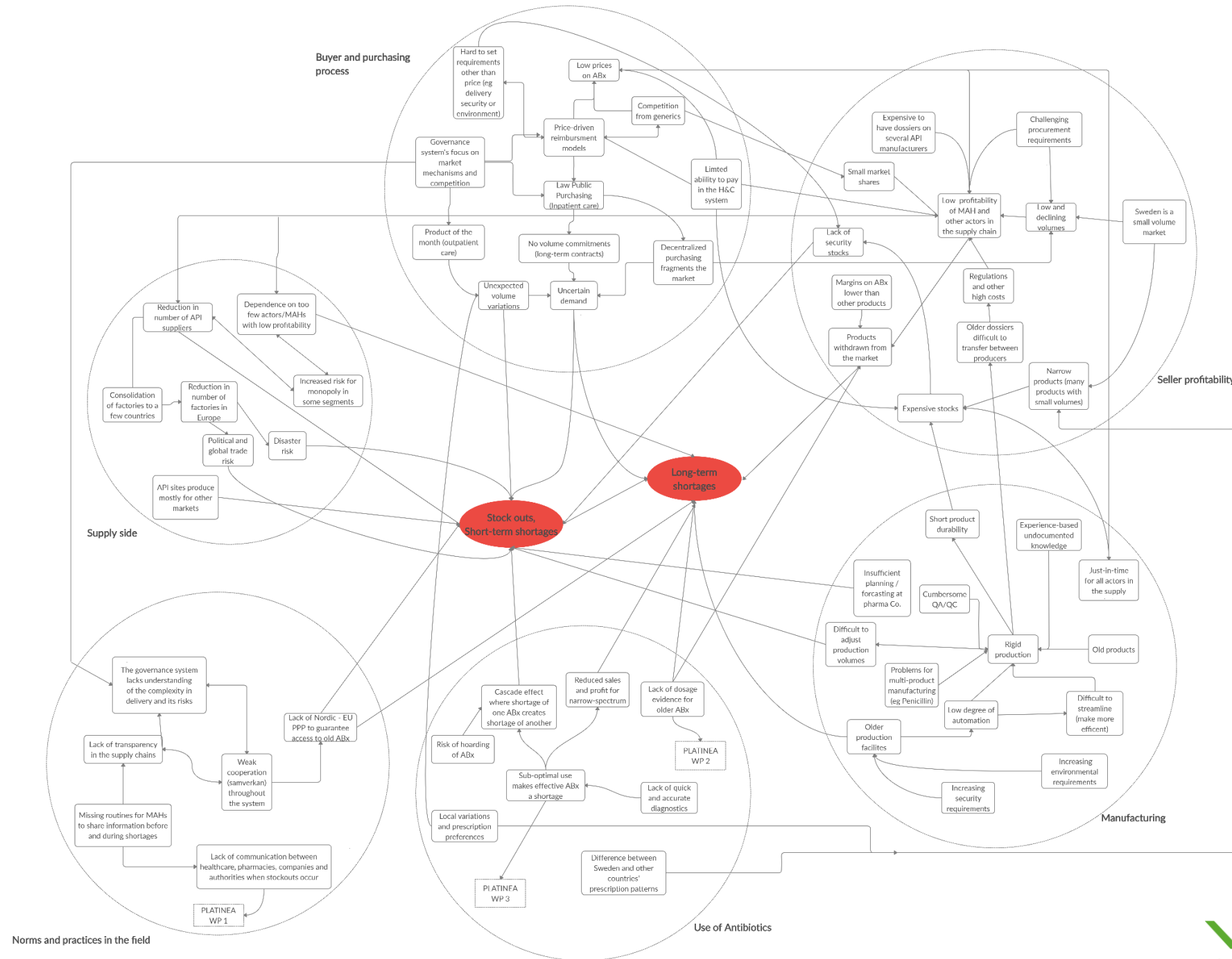
- Identify supply risk factors for specific antibiotics: weak chain, uncertain demand, lowest price focus, low profits
- Logic and elements for new valuation model
- Health economic analyses of costs of shortages (no one knows yet the actual costs)
- Modelling and simulation of supply chains
- Implementation and follow up of PLATINEA's 10 priority solutions

Availability challenged...

- Short-term: stock outs
- Long-term: withdrawals

Complex problem depending on many factors: mind-map!

...solutions to address both problems



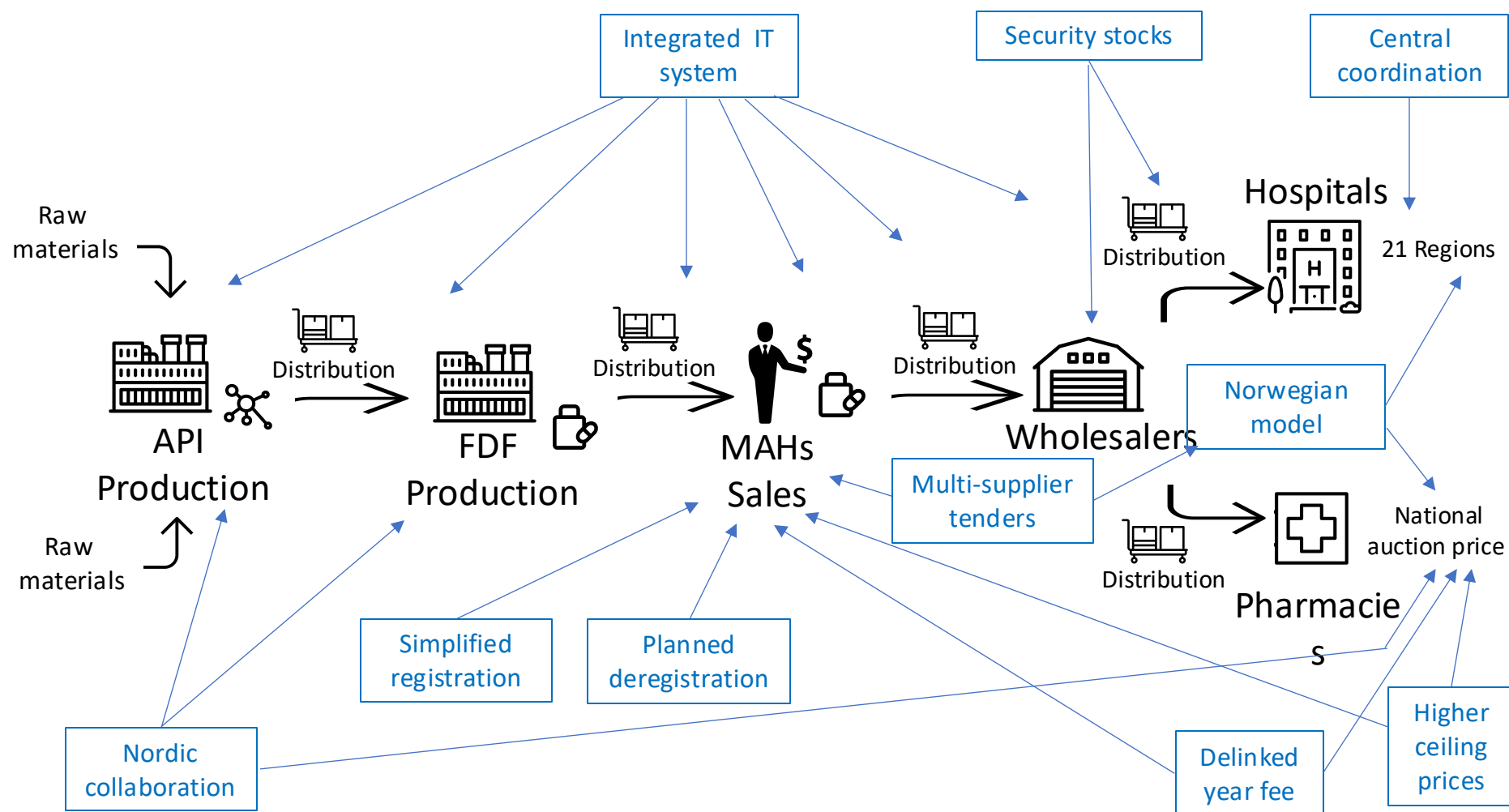
Causes of antibiotic shortages

- Many and complex...
- Low/declining profitability:
- Unique Swedish need of many narrow-spectrum antibiotics with decreasing volumes (paediatric formulations)
- Most antibiotics used in Sweden are old and unprofitable
- Disturbances in weak global supply chains
- Risk of monopoly situation when the number of suppliers and API producer declines

Platinea's 10 priority solutions

1. **Security stocks** (centrally coordinated)
2. **Central coordination** (needs, priorities, supplies)
3. **Integrated IT system** (stock levels, forecasts, AI)
4. **Norwegian model** (rewards precision/sustainability)
5. **Tenders selecting several suppliers**
6. **Higher price ceilings** in auctions with few MAHs
7. **Delinked yearly payment** for old ABx
8. **Simplified registration** of old ABx from abroad
9. **Planned deregistration** (engage alternative MAH)
10. **Nordic collaboration** (purchase and production)

Where Platinea's solutions act



Problems and reflections

1. Initial skepsis and lack of mutual understanding between sectors...
“fear” or mistrust between public and private/industry: meetings!!!
2. Conflict(s) of interest...fixing the collaboration contract
3. Continued funding: Vinnova’s various programs...but for how long?
4. Showing our unique value...do no stretch, focus...but some of our issues are being taken up by permanent actors
5. Expanding, also internationally?
6. Keeping momentum after 6 years...new focus? New actors?



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