Dealing with uncertainty the challenge of long term projections in Low data resources Countries

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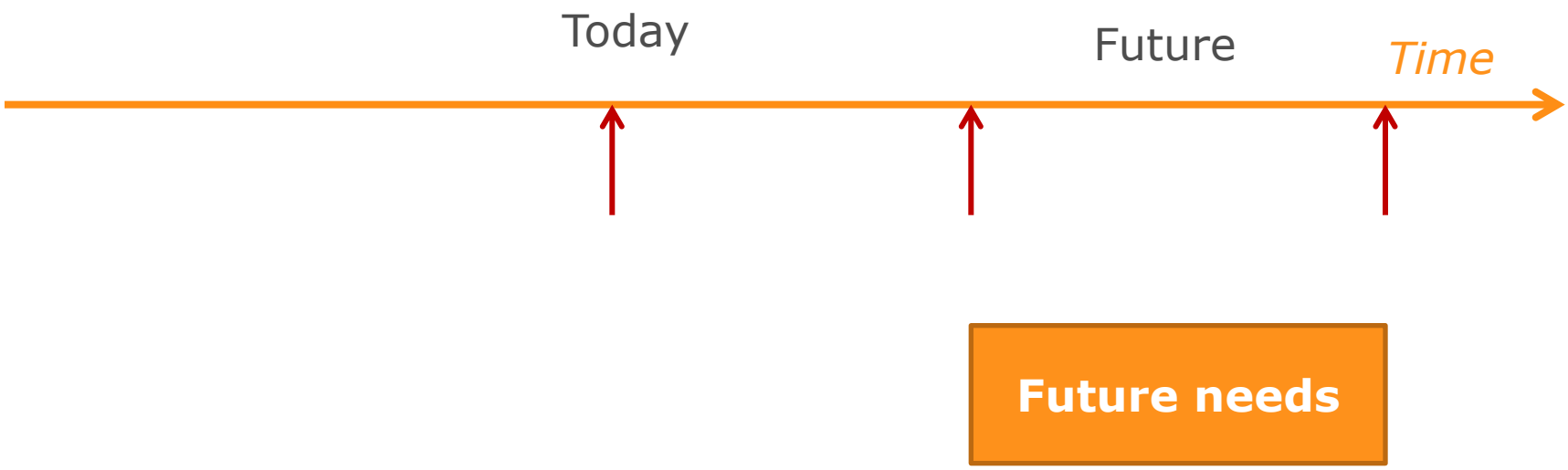
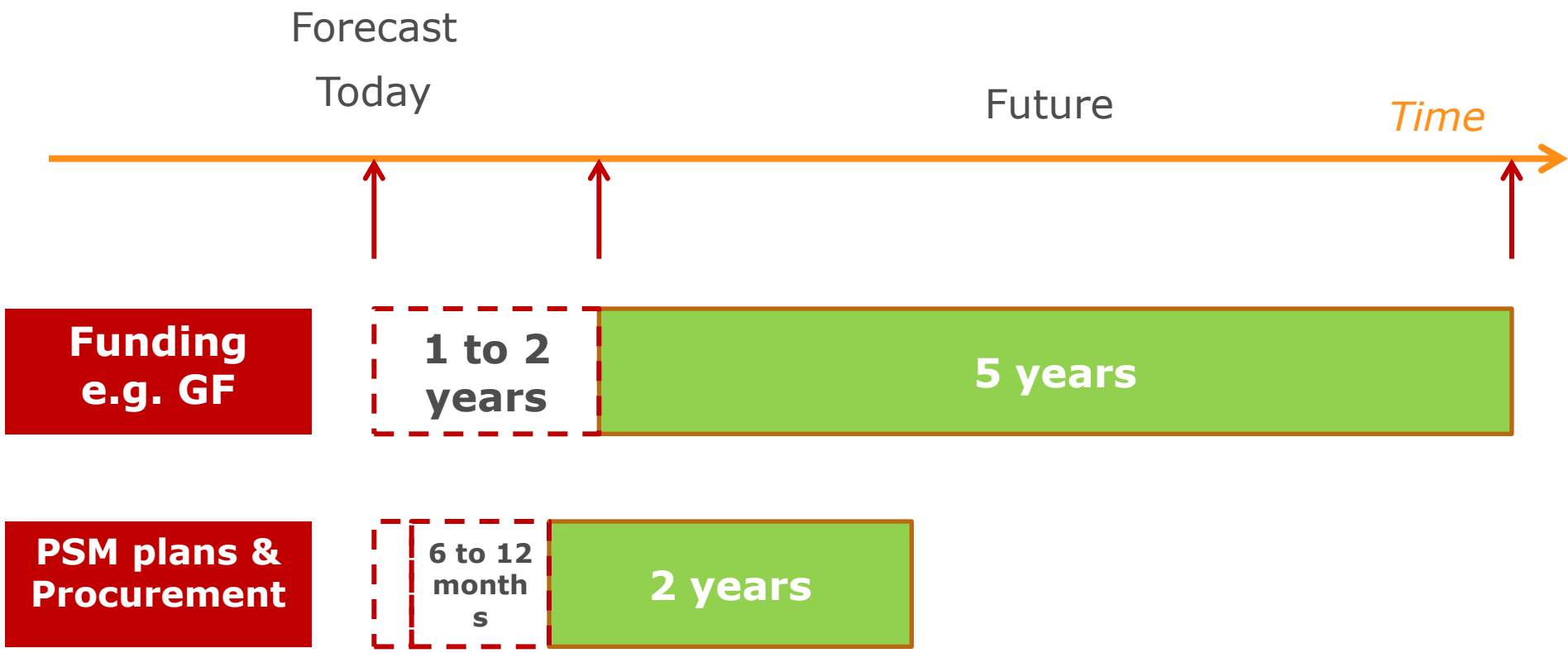
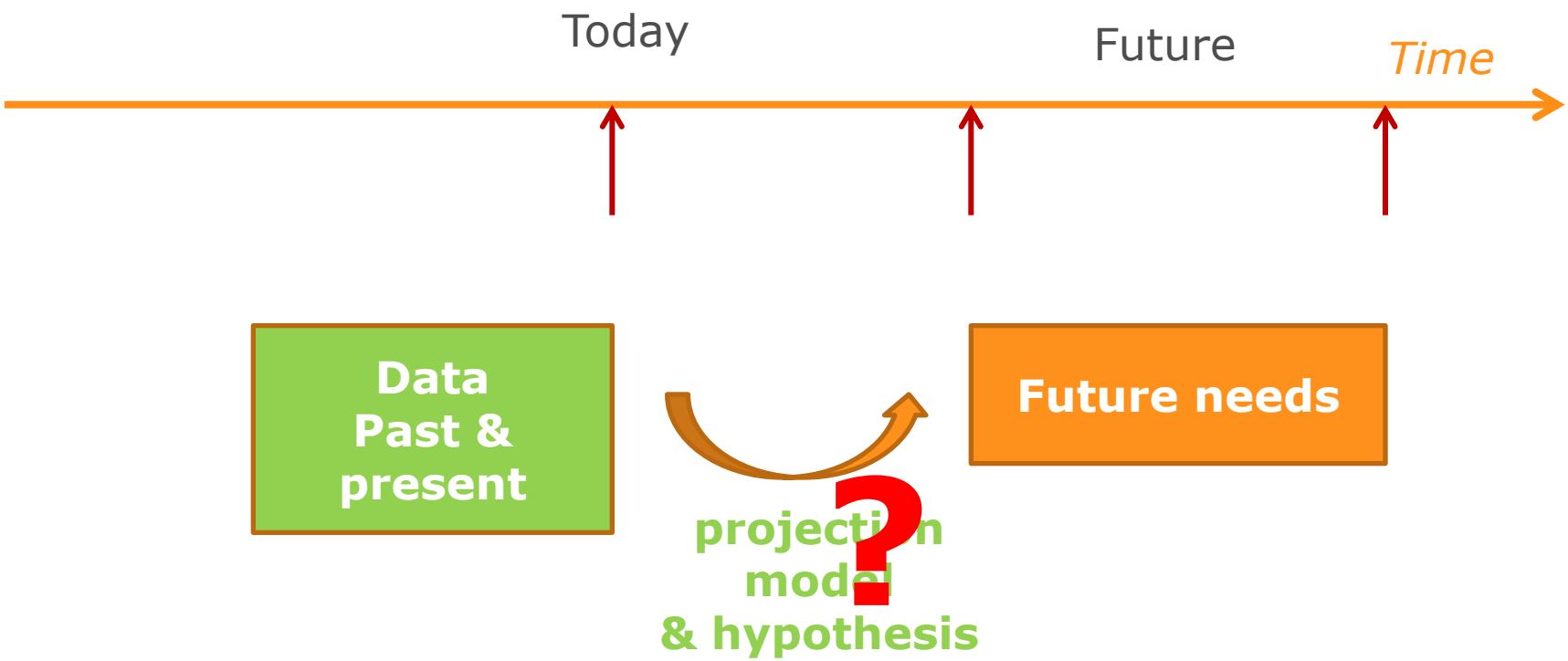
Forecasting process



Time framework

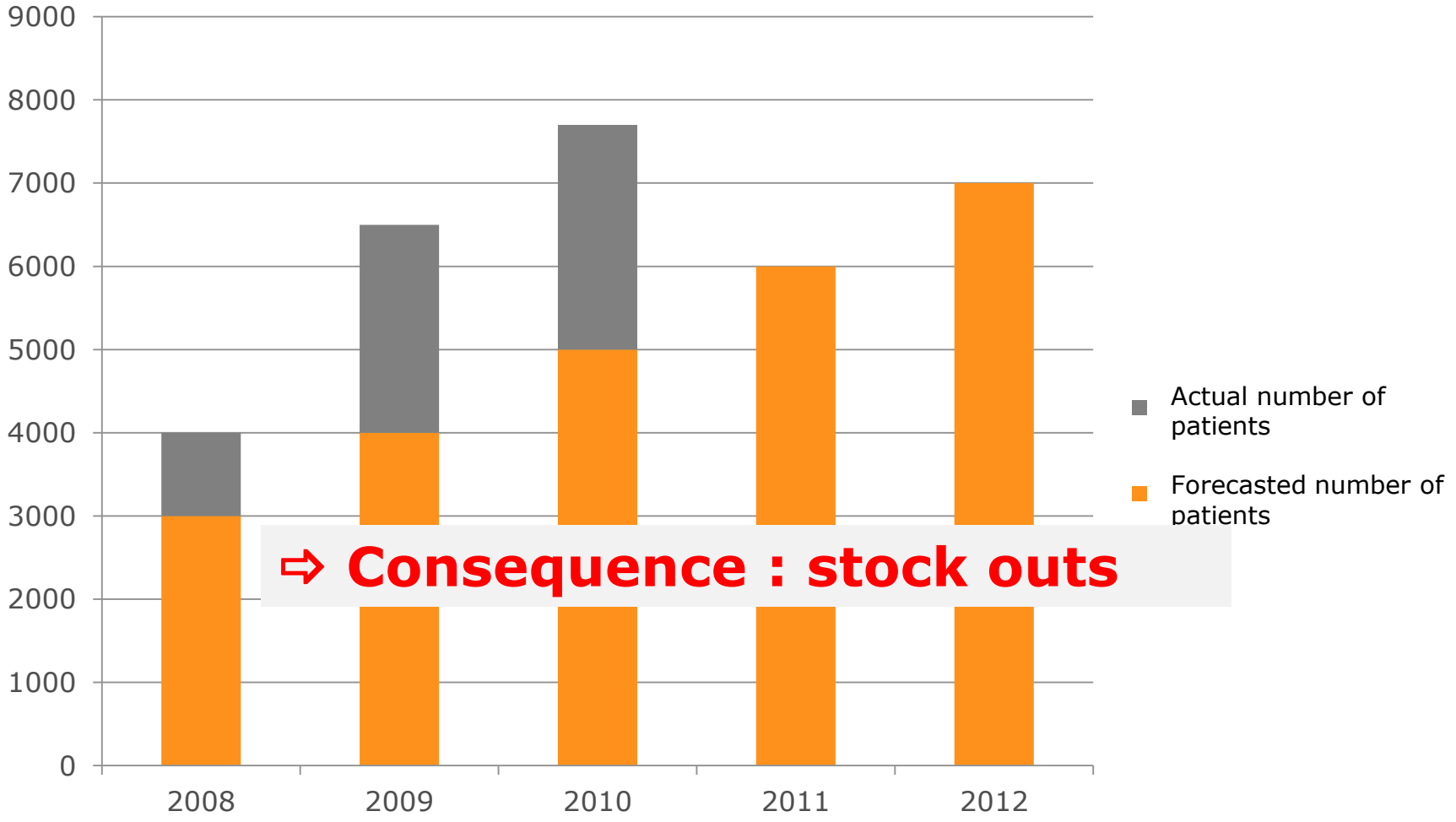


Forecasting process



Consequences of uncertain forecast

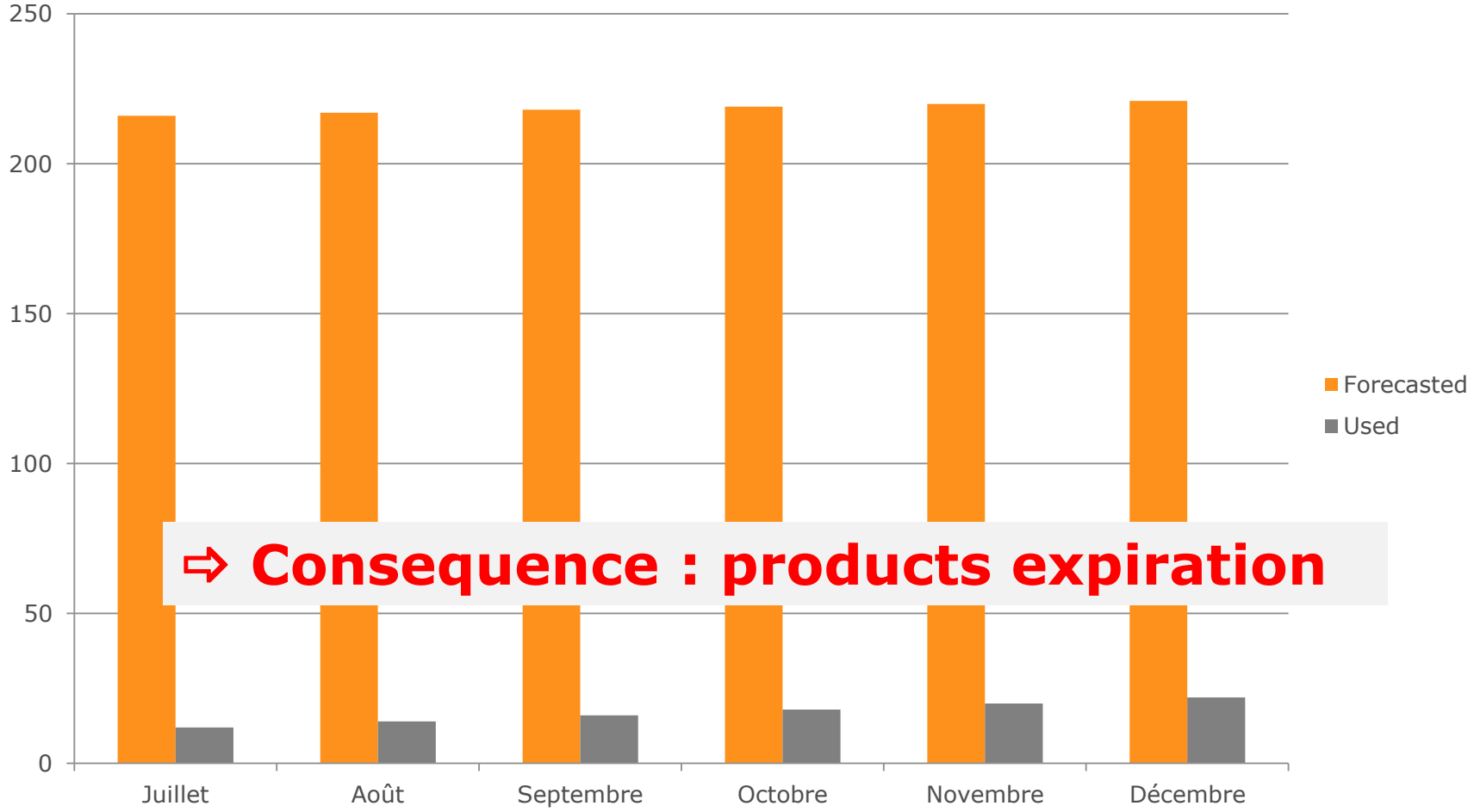
From 80 patients / month forecasted
to 150 patients / month actually



Consequences of uncertain forecast

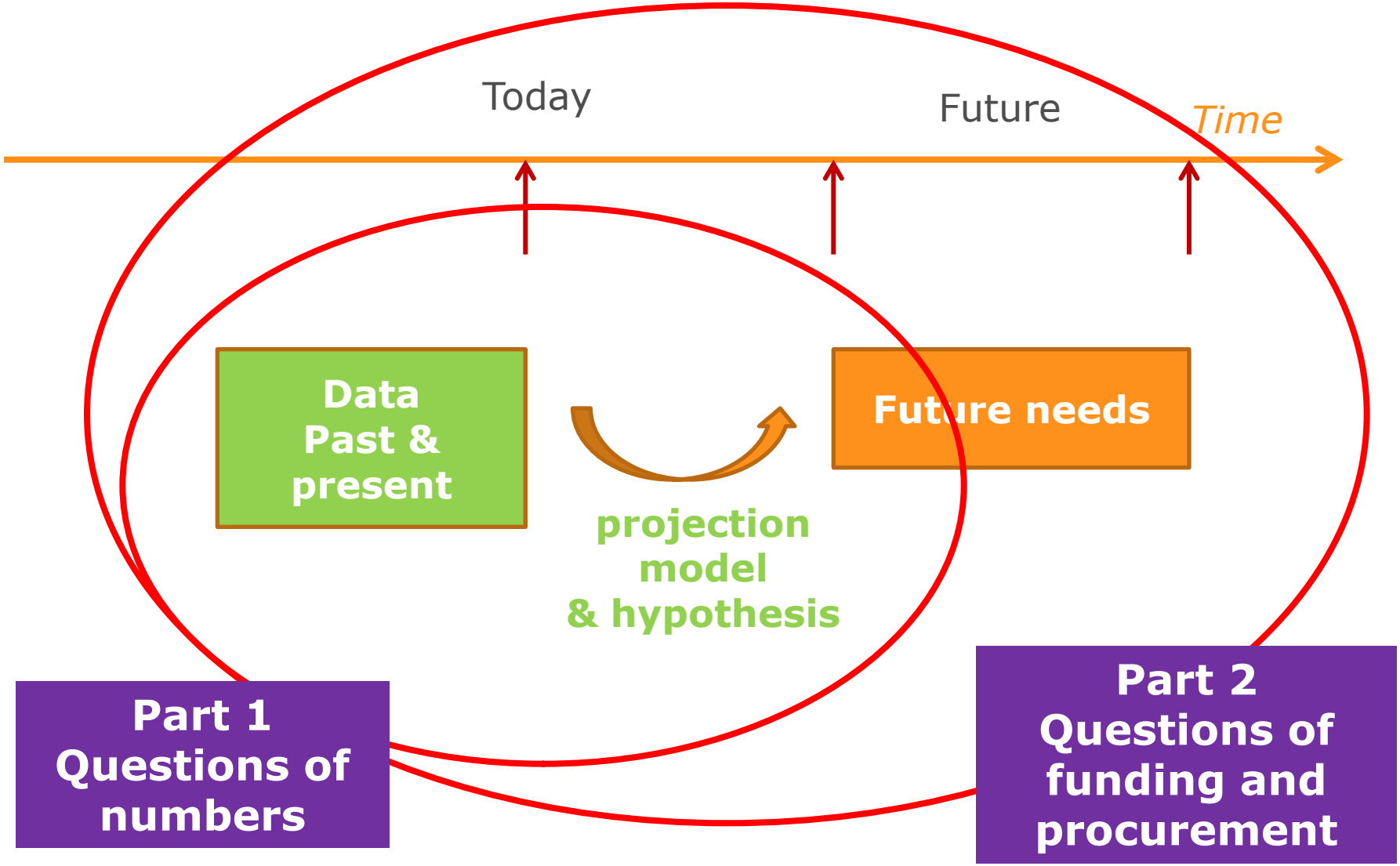
Forecasted & used quantity of TDF+3TC+EFV, 2009

Consequences of uncertain forecast



Forecasted & used quantity of D4T+3TC+NVP baby, 2009

Forecasting process



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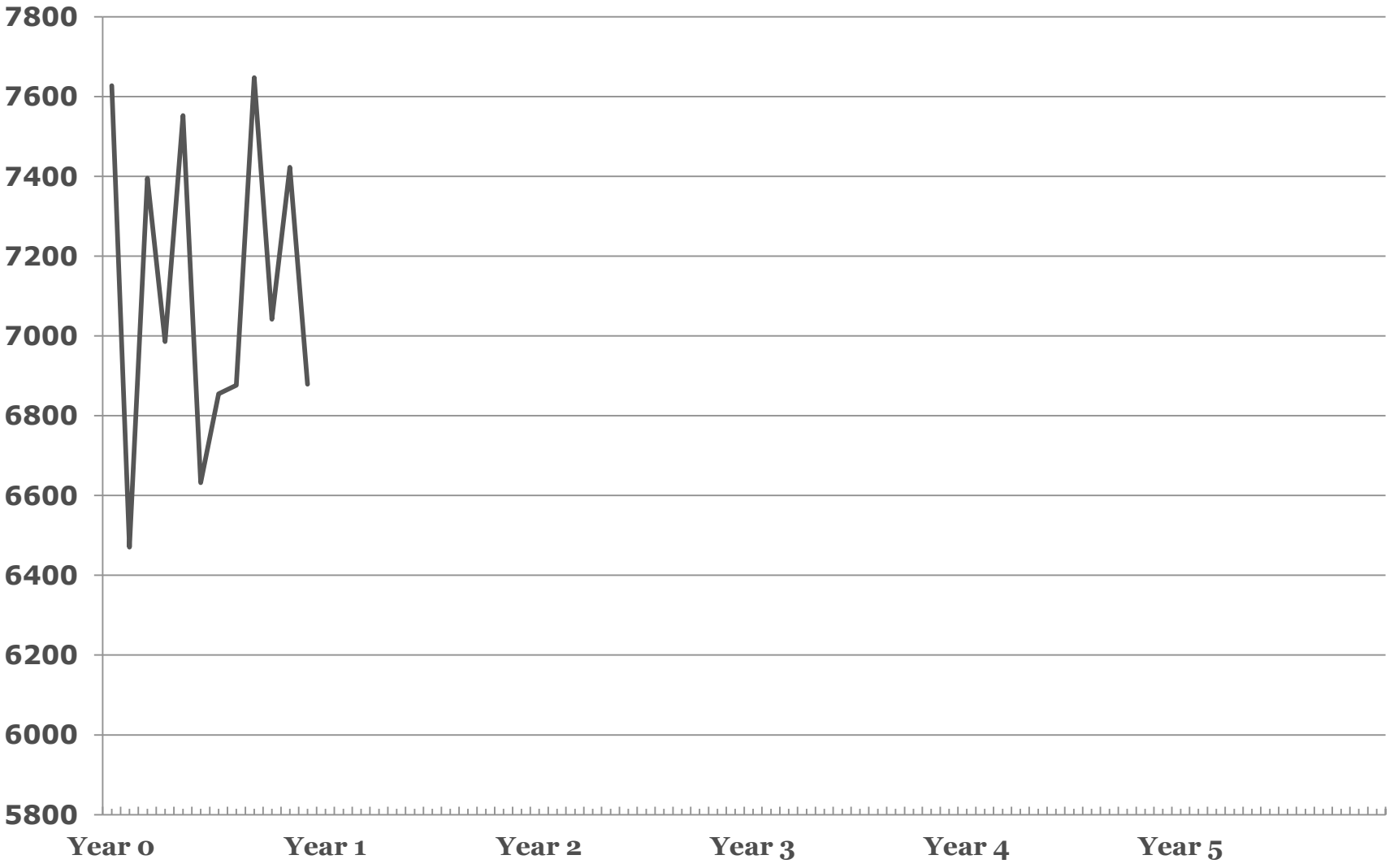
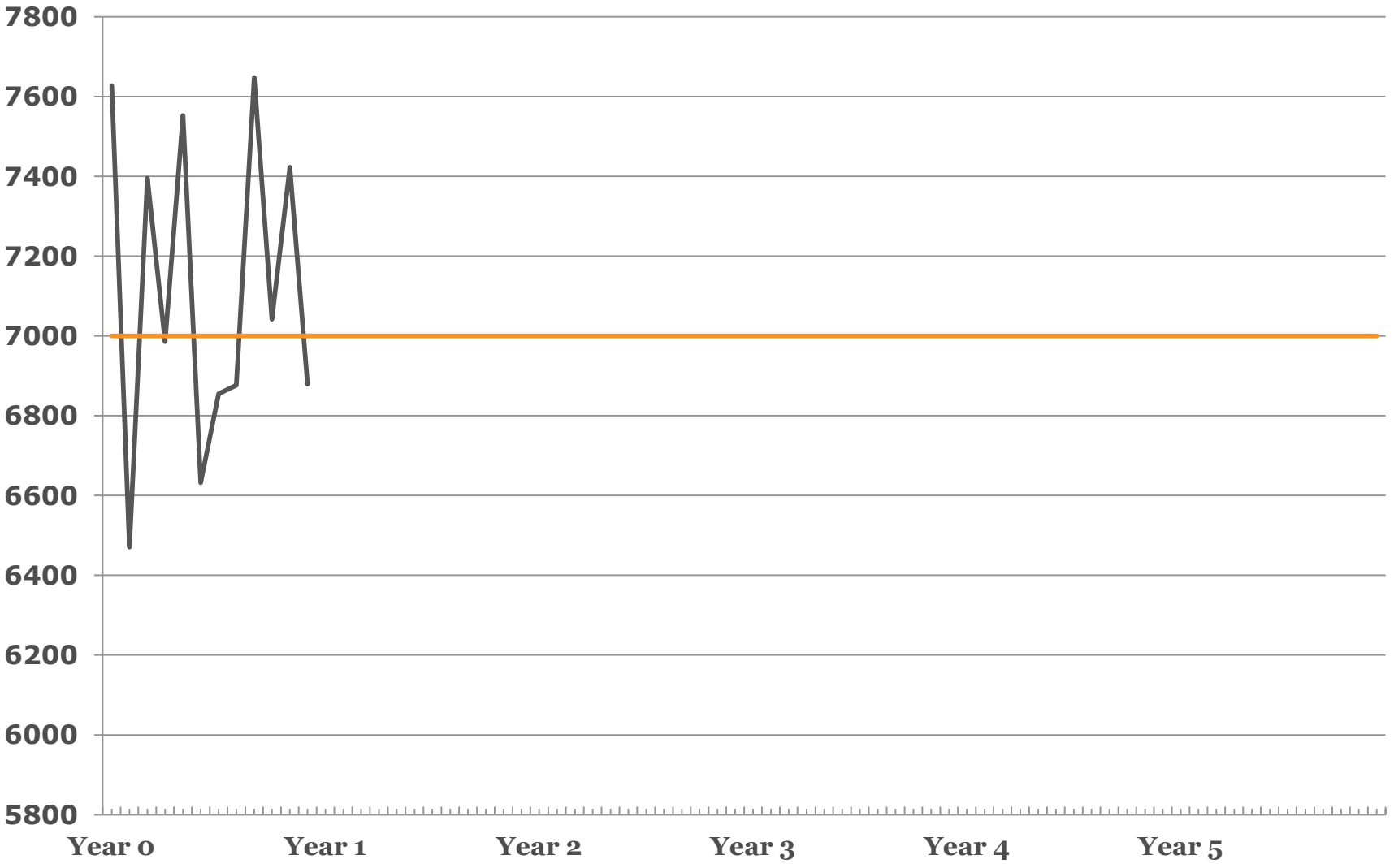
PART 1
DATA & MODELS

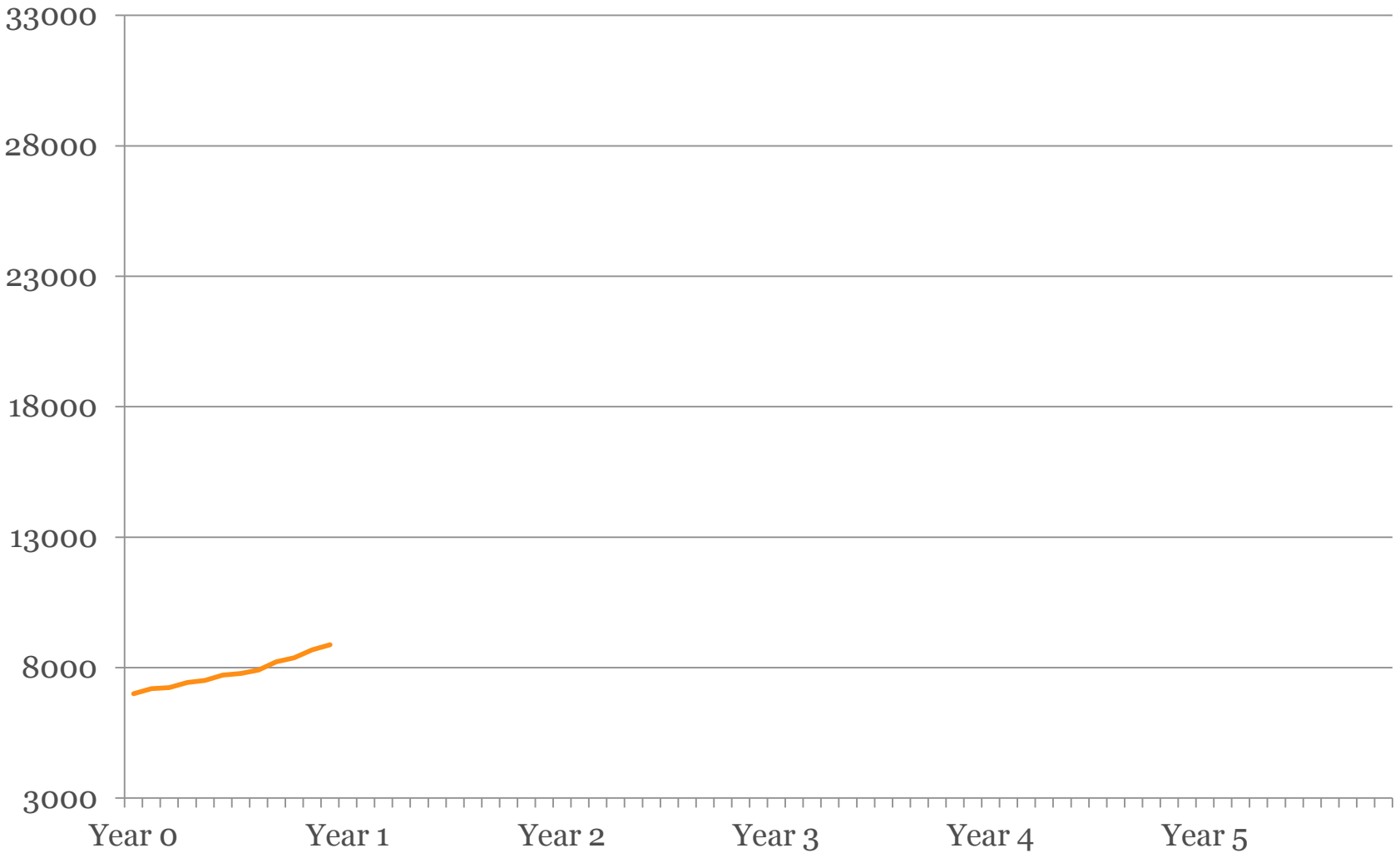
Situation 1 – Stability



Situation 1 – Stability



Situation 2 – Growth



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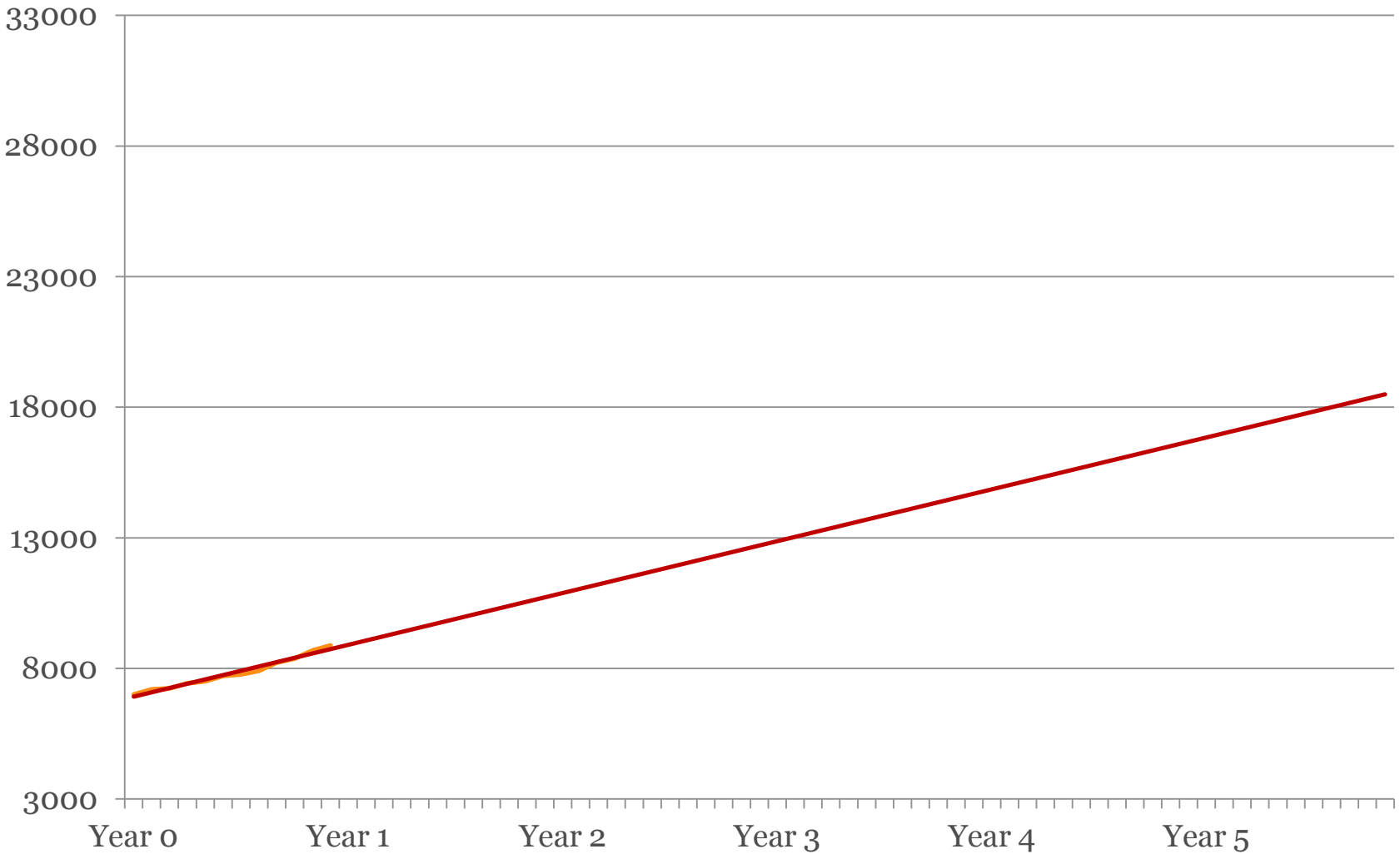

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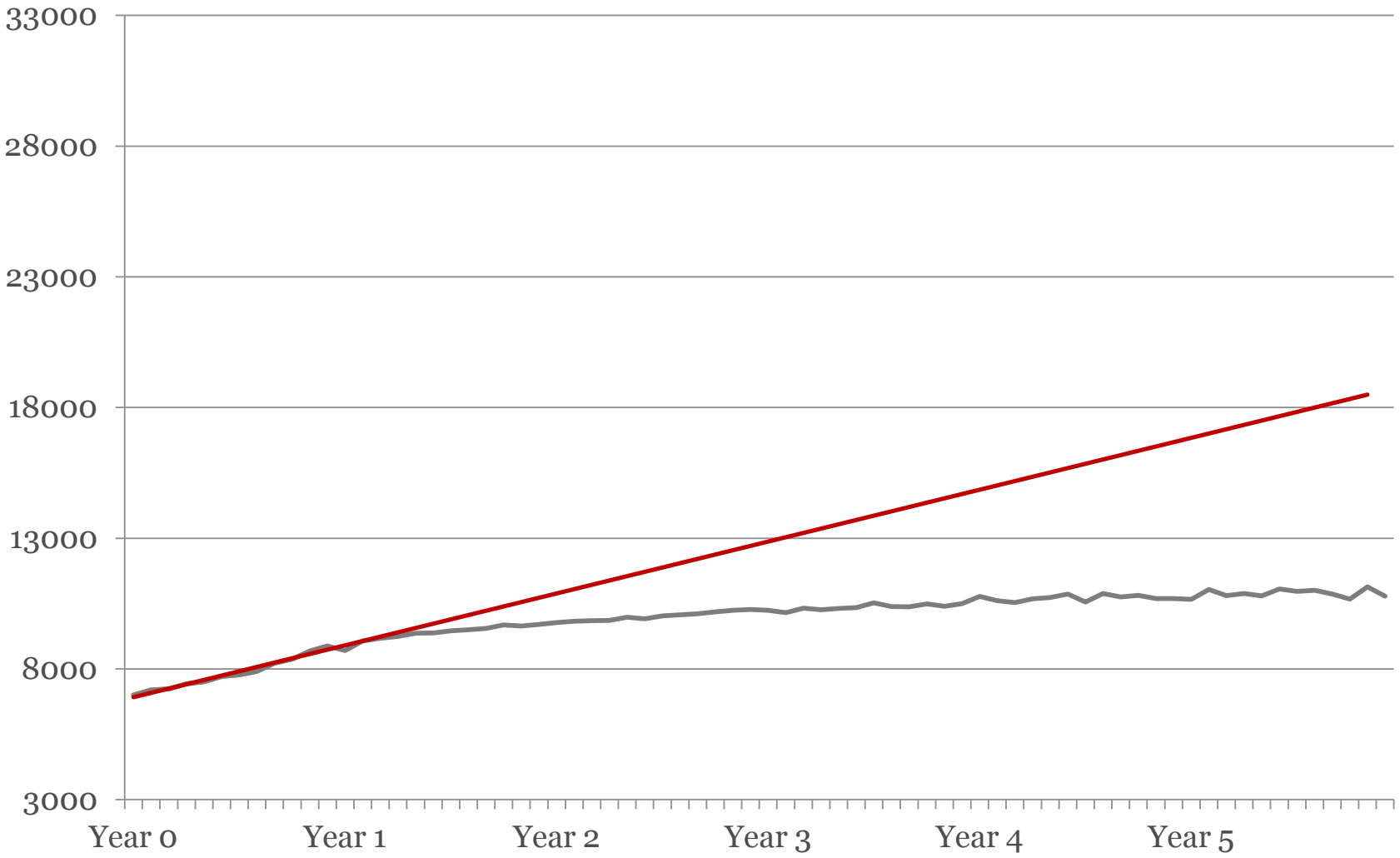
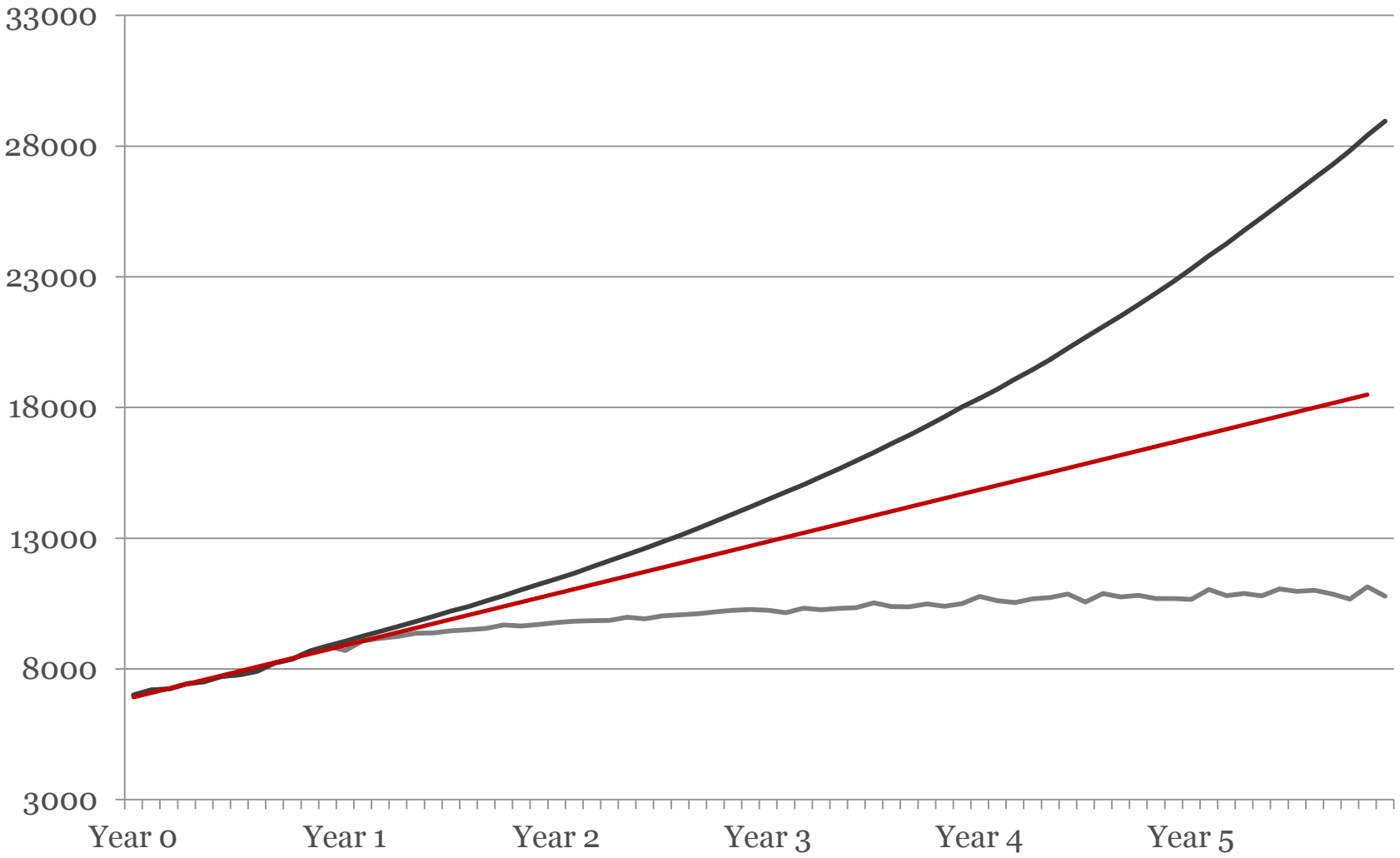


Situation 2 – Growth



What do I need to make projections

- Baselines

  Number of patients currently on treatment

- Hypotheses on my programme future performances

  Rythm for initiation of new patients

- Parameters

  Proportion of patients who should get treatment

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Type of data

- **Epidemiological data**
  - Local
    - HIV Prevalence
    - OI Incidence
  - Generic
    - Proportion of patients in need of treatment
- Programmatic data
  - Number of patients
  - ART schemes repartition

Issues

- Rarely updated
- Rarely available for target population
- Large confidence intervals

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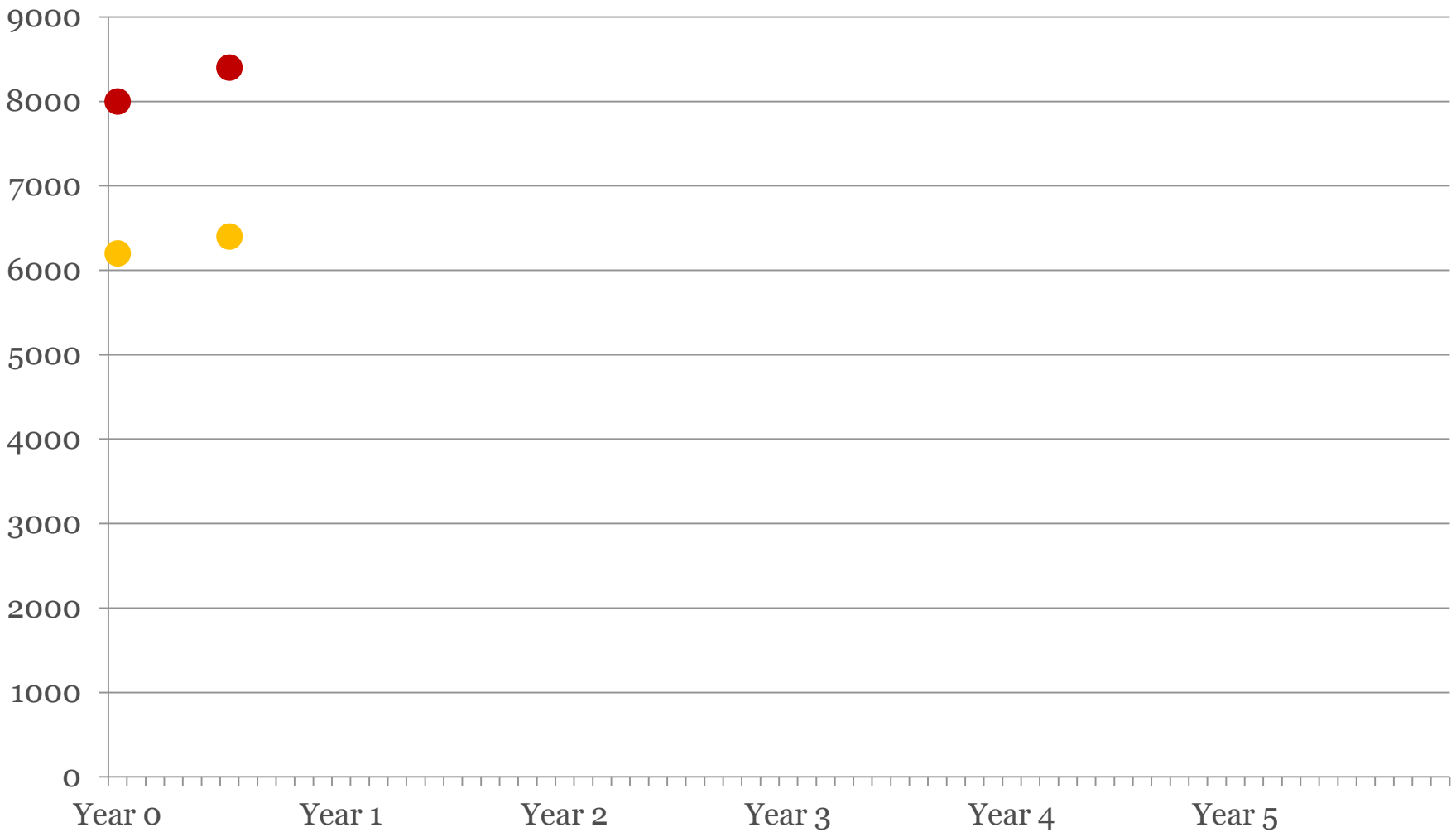
Type of data

- Epidemiological data
  - Local
    - HIV Prevalence
    - OI Incidence
  - Generic
    - Proportion of patients in need of treatment
- **Programme data**
  - Number of patients
  - ART schemes repartition

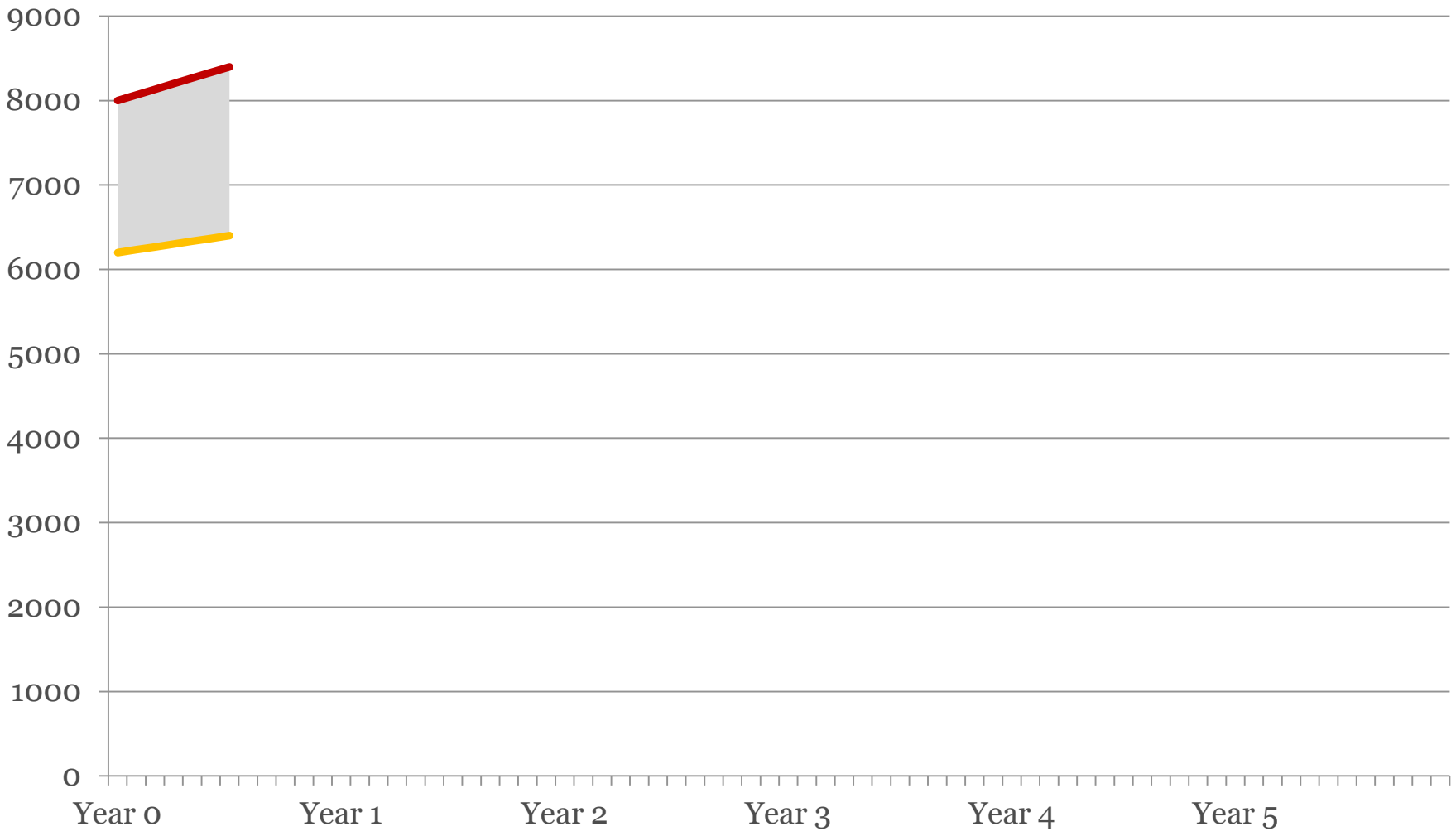
Issues

- Tendency to over / under estimate
- Very dependant on raw data

Programmatic Data



Programmatic Data



Different types of models

- **Simple models**
- A bit more complex
- Very complex

$$F_t = F_{t-1} + I_t - O_t$$

8000 patients at t=0
\+ 300 new patients at t = 1
\- 100 deaths and LTFU at t = 1

8200 followed up patients in t=1

What kind of projections

- Simple models
- **A bit more complex**
- Very complex

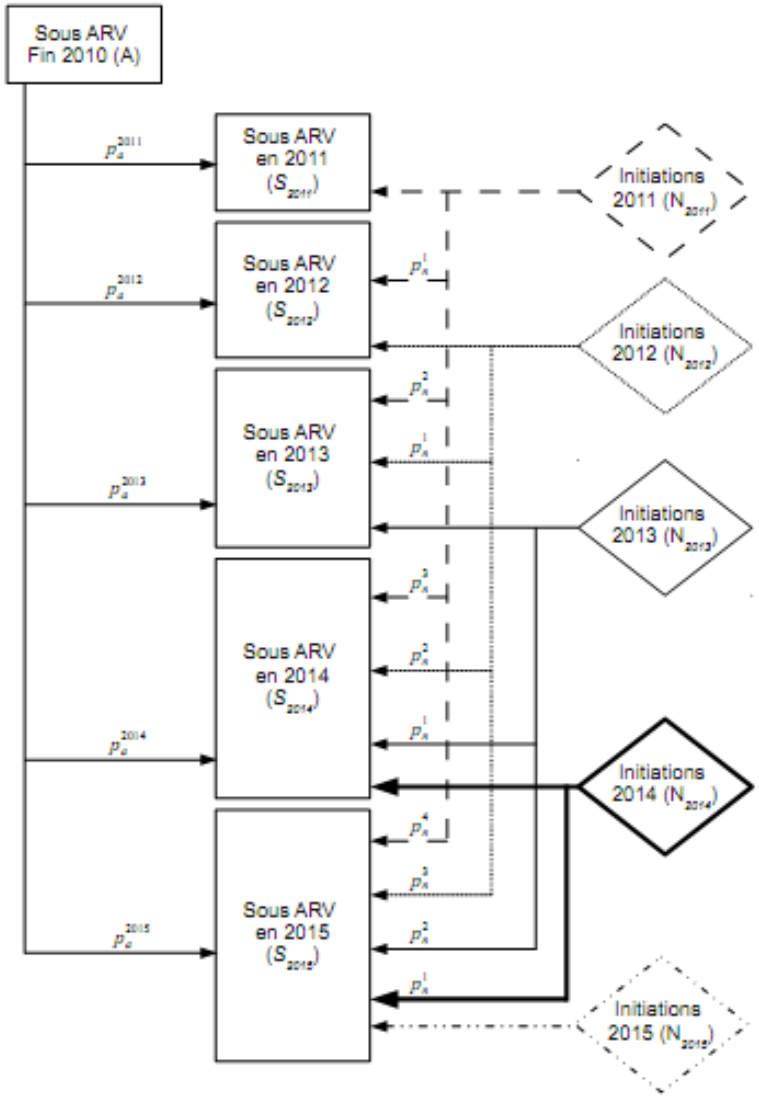
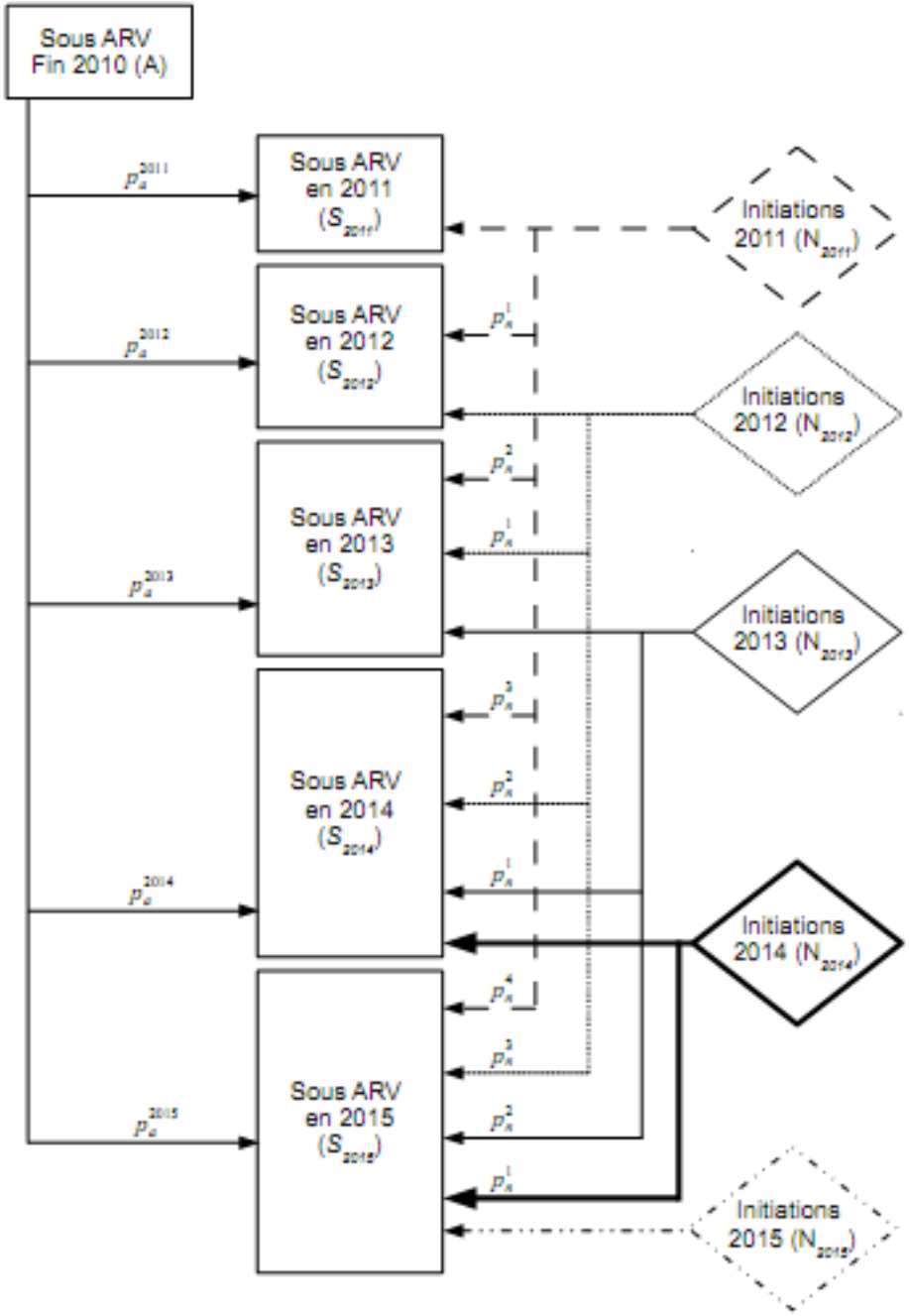


FIGURE 1 – Architecture du modèle de projection.



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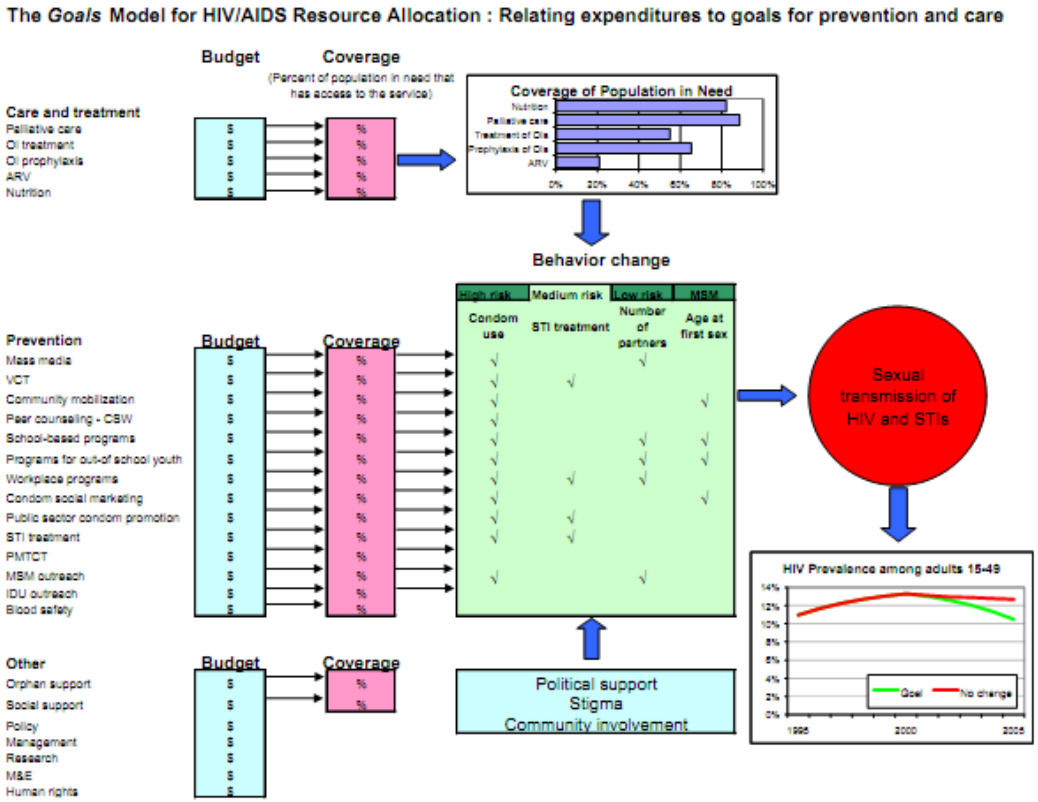
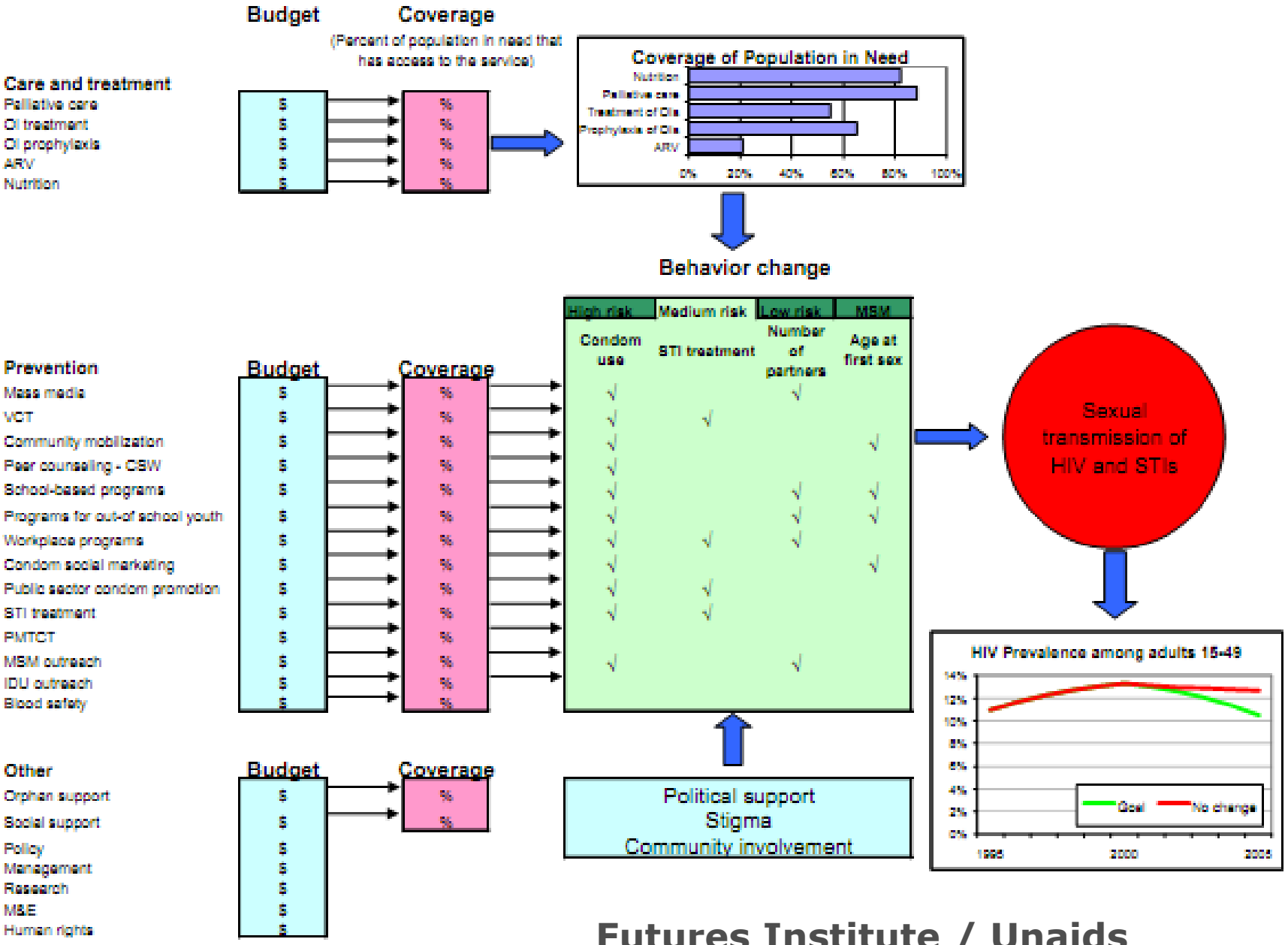


Futures Institute / Unaids

The *Goals* Model for HIV/AIDS Resource Allocation : Relating expenditures to goals for prevention and care



Futures Institute / Unaids

Which model should I use ?

- Too simple = little more than a guess
- More parameters= more uncertainty
- Need for uncertainty and sensitivity analysis
- Need to adapt model to national specificity

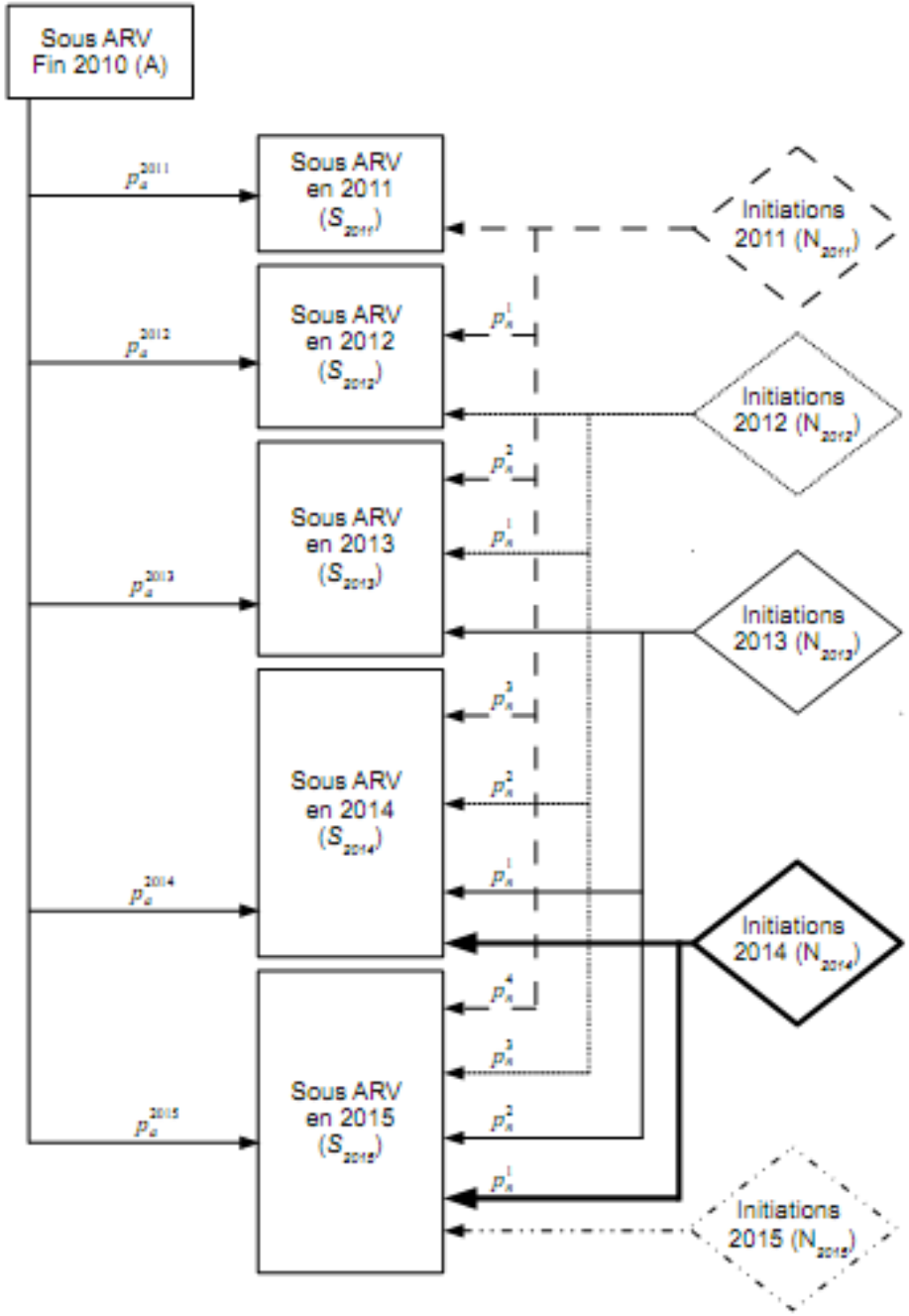
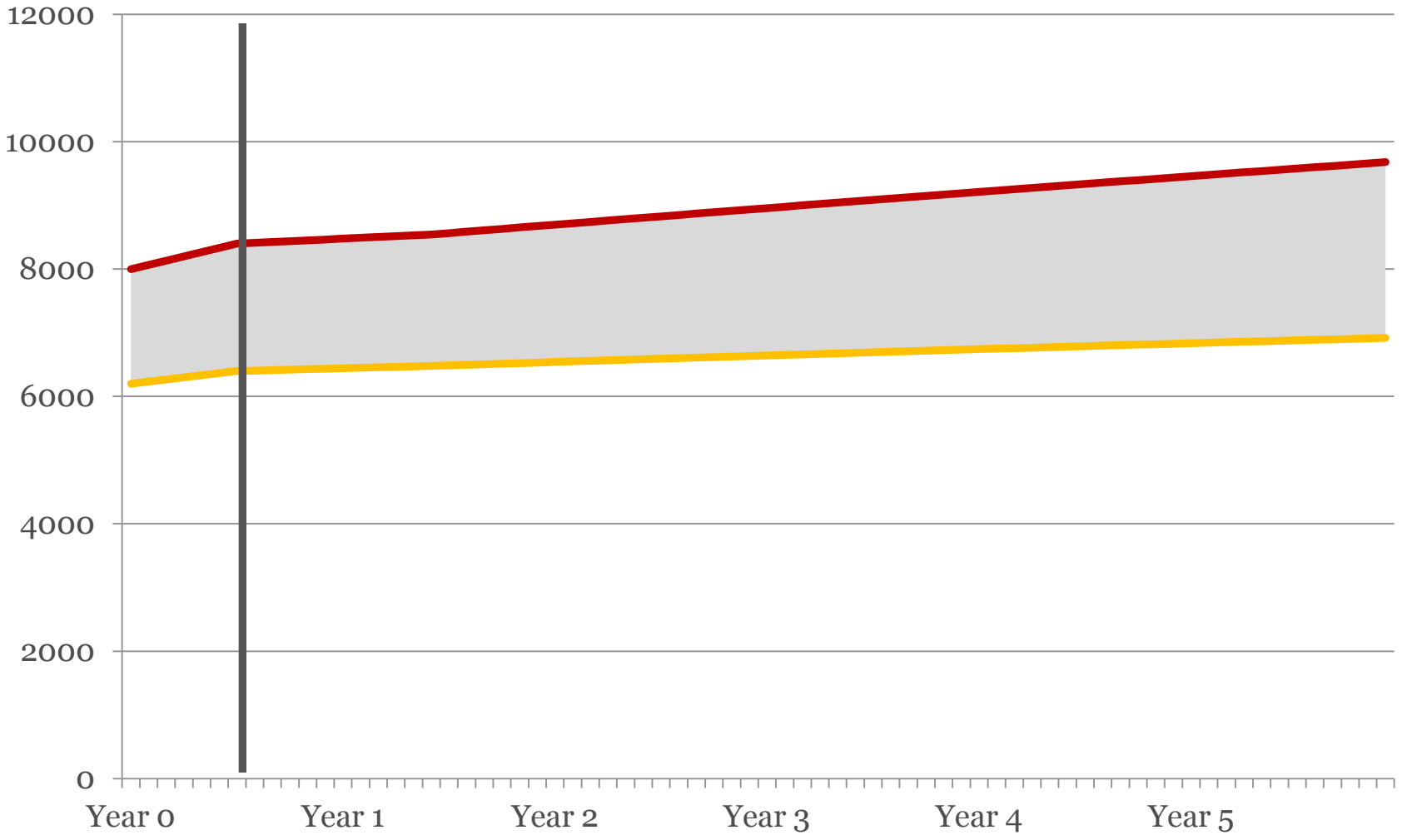


FIGURE 1 – Architecture du modèle de projection.

Programmatic Data

	High	Low
Baseline	8400	6400
Initiations	300	
Retention M6	90%	80%
Retention M6 - M12	95%	87%
Yearly retention >M12	97%	95%

Projection results



Things you can’t input in your projection

- Program hazard
- External factors

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Take away

- Improving Data availability
- Adapt model to situation
- *Point estimate is not enough*

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PART 2
FROM NUMBERS TO FUNDING & PROCUREMENT

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The question

How can procurement systems be efficient

and provide sustained access

to treatment for patients

in this context of uncertainty

Plan

How to manage uncertainty in funding & procurement systems?

1. At the step of forecasting
2. At the step of purchasing
3. At the step of implementation

At the step of forecasting

Quantifying and budgeting the needs

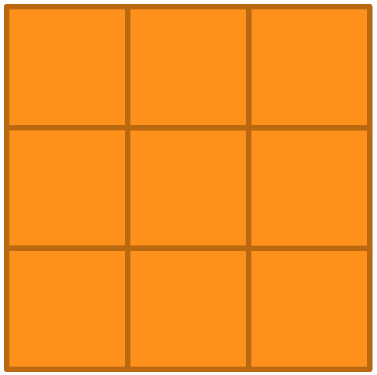
a. Define various scenarios based on estimates dispersion (low, middle & high)

The choice of the selected scenario is political

At the step of forecasting

b. take a margin into account

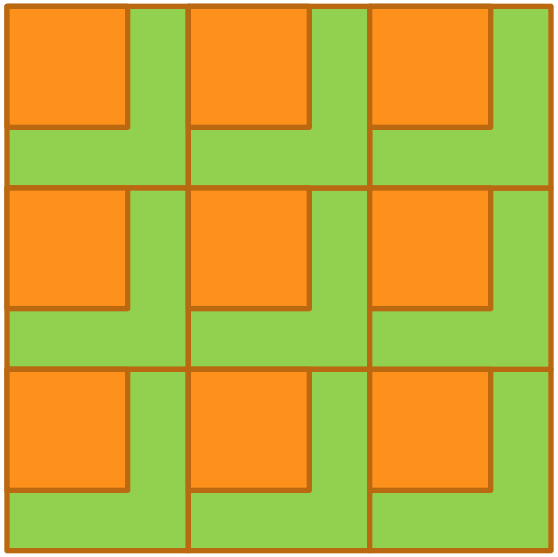
For example on various products



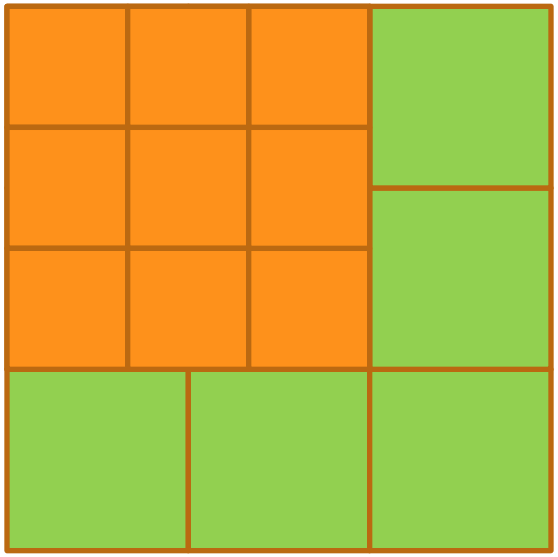
(Buffer stock is the first simple way to manage uncertainty…)

take a margin into account

Needs
+ CI x%



Take a margin into account



It is impossible to forecast
the unexpected without overestimate

and to accept the consequences
- **increased funding needs**
- **increased risk of loss by expiration**

At the step of purchasing & tendering

- **Integrate a stock option mechanism:**

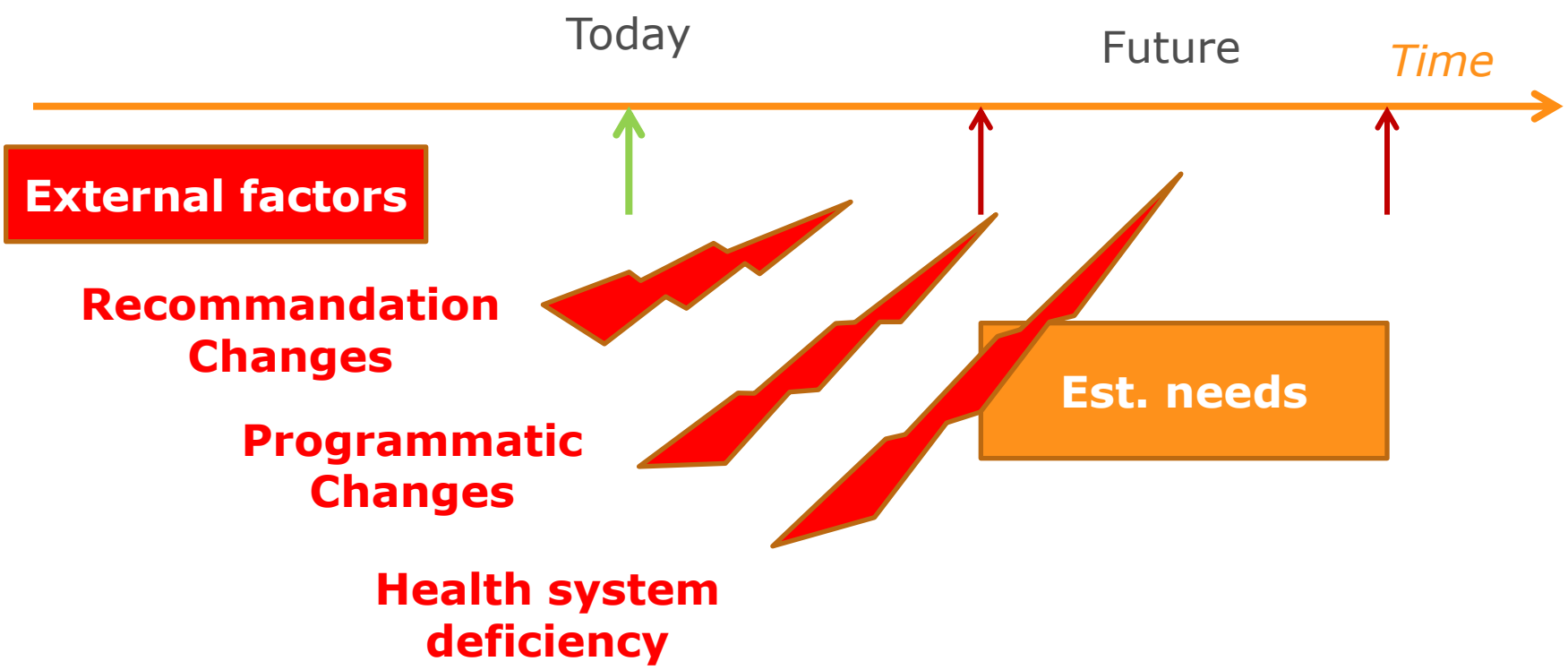
  establish contracts with suppliers based on

  minimum quantity + margin

  if necessary, margin can be ordered quickly

This option must be accepted by suppliers and donors and use sparingly

From forecast to reality



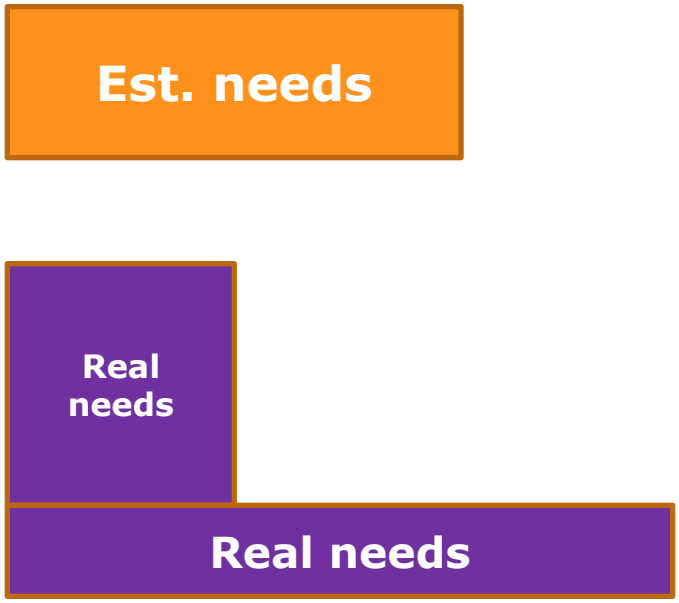
Program hazard & external factors will affect the forecasts and increase the uncertainty

From forecast to reality

To ensure and anticipate the adequacy between forecasts & real needs

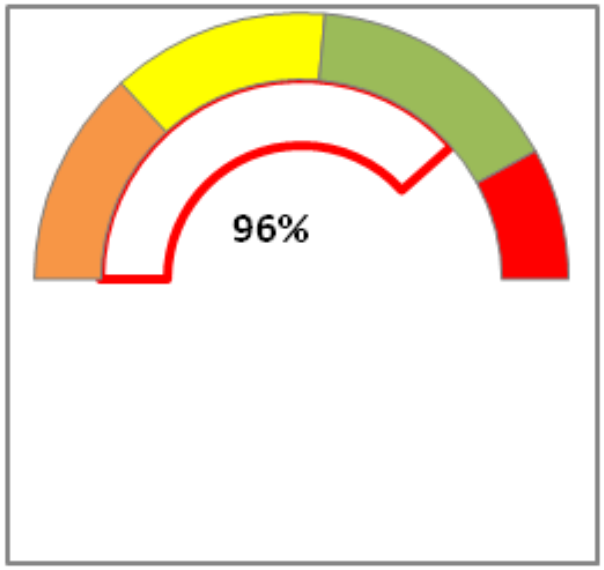
A clear view of the situation is needed (incl. data quality)

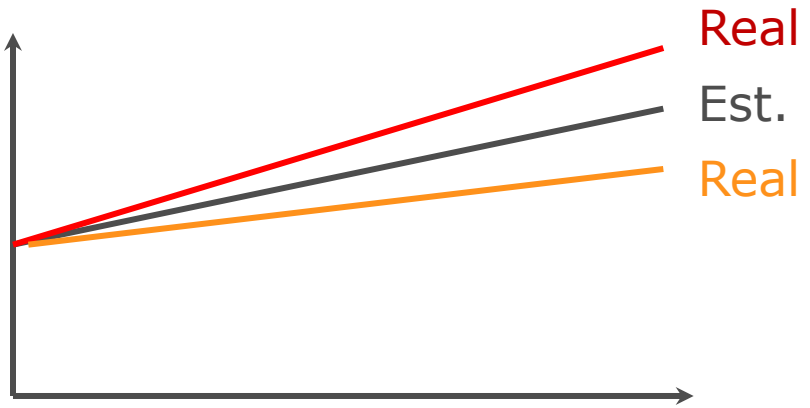
1st step : identify the risk

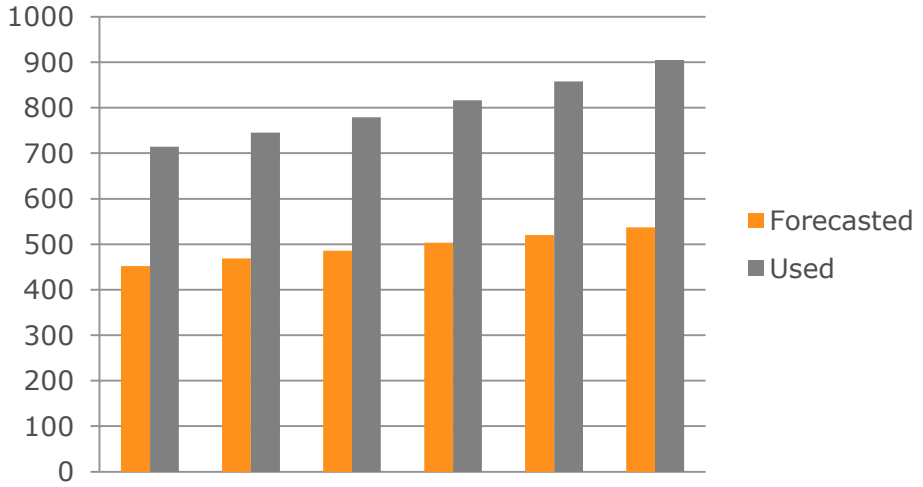


Develop warning indicators & dashboards

To ensure and anticipate the adequacy between forecasts & real needs







Estimation de la disponibilité des Comprimés

Pays et/ou structure : ***XXX***

Date de mise à jour des données : ***20/12/2010***

Méthode / type de données utilisées : ***Données suivi de file active***

Nature des stocks considérés : ***Stocks centraux & périphérique***

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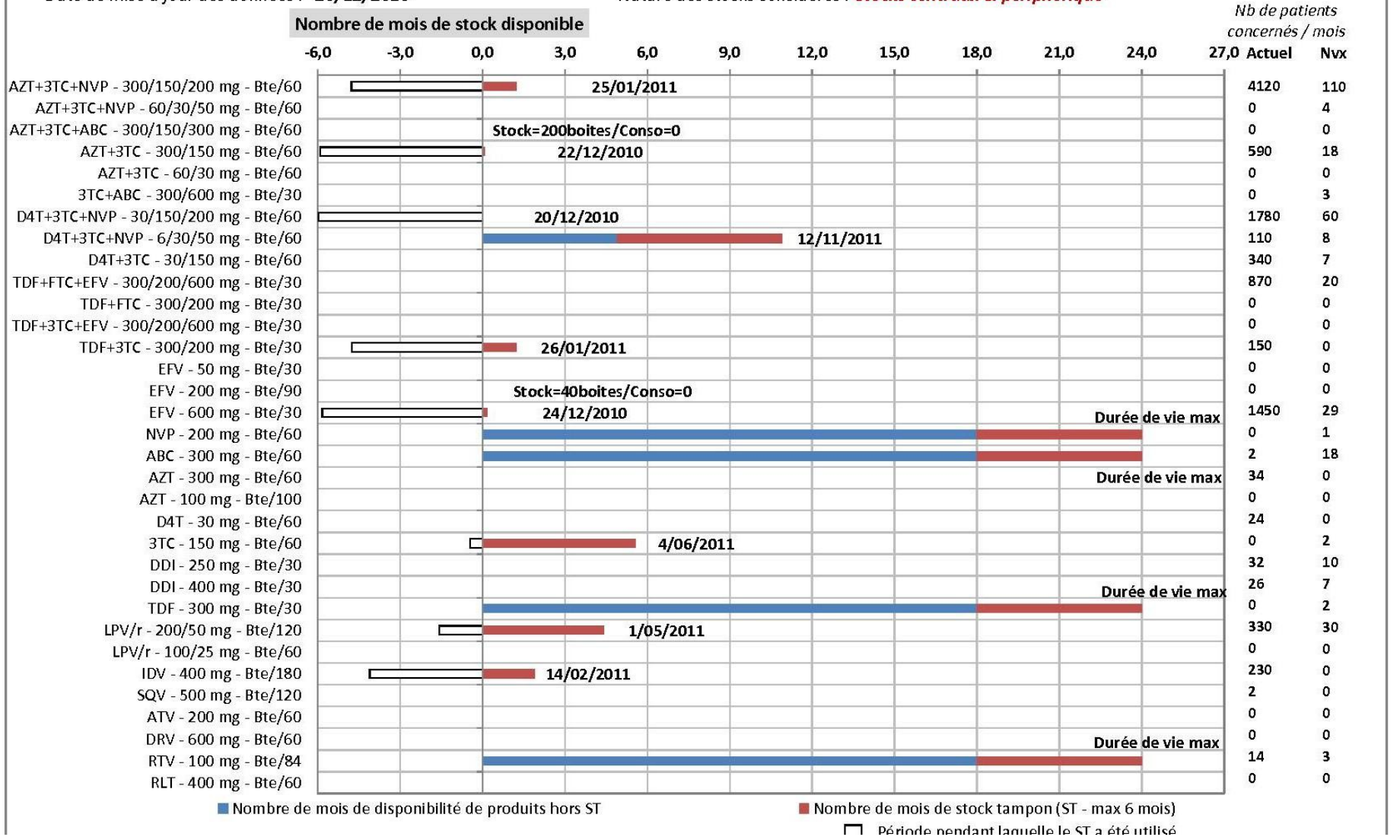

From forecast to reality

To ensure and anticipate the adequacy between forecasts & real needs

A clear view of the situation is needed (incl. data quality)

1st step : identify the risk

2nd step: take decision on rationalization

Political decision based on technic

3rd st
procu ures

But always need proactivity & quick procedure

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Discussion

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CONCLUSION

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Key points

- Health information systems have to be strengthened for data quality and not only for M&E reporting
- In low data quality settings, we need to take into account uncertainty and to integrate forecasts range into subsequent process
- Bridges have to be built between PSM systems & HIS
- Consensus and political management on
  - Validation of hypothesis and targets
  - Relay choices that have been made to field practionners

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- Harmonization of methods between stakeholders (both national and international levels)