On the Road to curing Cancer

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By implementing the BMS predictive performance model, BMS will be able to introduce Vixtocar as standard treatment and realize 5.6 bn revenue by 2033

Situation	Question	Strategy	Impact

1) Bristol Myers Squibb (BMS) is one of the largest pharmaceutical in the world, **continuously working towards curing serious diseases**

2) They are looking to introduce Vixtocar, a new **ground-breaking cancer treatment**, into the Danish market

3) However, BMS are **facing reluctance from national health authorities to be willing to pay** for the revolutionary treatment

4) Furthermore, Vixtocar has only been tested tested for 36 months and therefore the **long-term effectiveness and effects are unkown**

> *How can BMS get Vixtocar adopted as standard treatment while ensuring long-term revenue maximization and save even more lives*

BMS predictive performance model
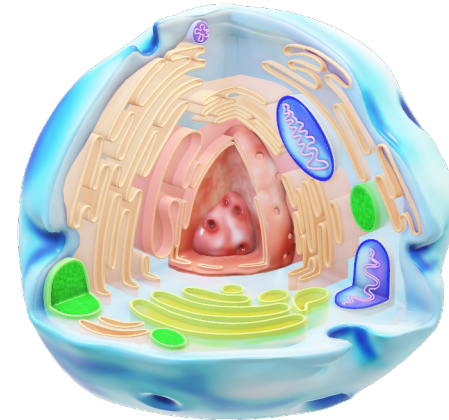
Matching willingness to pay with uncertainty by introducing a performance-based model that shares the risk between BMS and buyer

5.6 bn DKK in revenue over 12 years

Bristol Myers Squibb

105,726 DKK Treatment cost decrease per quality year

Danish Medical Council

191 patients cured Per year using Vixtocar
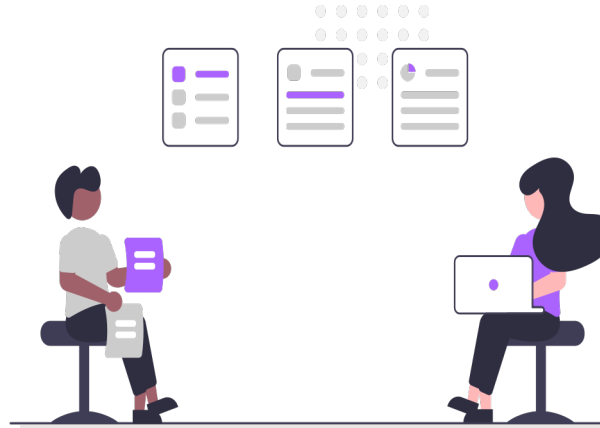
Brown's lymphoma patients

To figure out how to overcome BMS's challenge, we need to figure out what the points of commonality and difference are for the three relevant parties
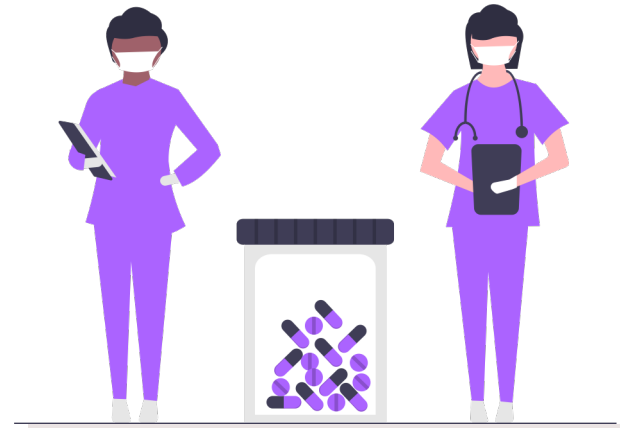
Bristol Myers Squibb

- ☐ Minimize effectiveness uncertainty
- ☐ Maximize revenue streams
- ☐ Battle Cancer and save human lives
- ☐ Medically save

Danish Medical Council

- ☐ Minimize effectiveness uncertainty
- ☐ Battle Cancer and save human lives
- ☐ Pay a cost worth the benefit
- ☐ Medically save

Brown's Lymphoma Patients

- ☐ Minimize effectiveness uncertainty
- ☐ Battle Cancer
- ☐ Medically save

Other than the obvious of battling cancer and having the already obtained medically approval, the common ground for all involved parties needs to be found in minimizing effectiveness uncertainty

Complication   **Apprehension**   Reaction   —   Timeline

Diving deeper into the lack of effectiveness certainty, it becomes clear that to reach all parties wishes all three extrapolations much be explored

FIGURE 1

KAPLAN-MEIER CURVE
VIXTOCAR V. COMPARATOR
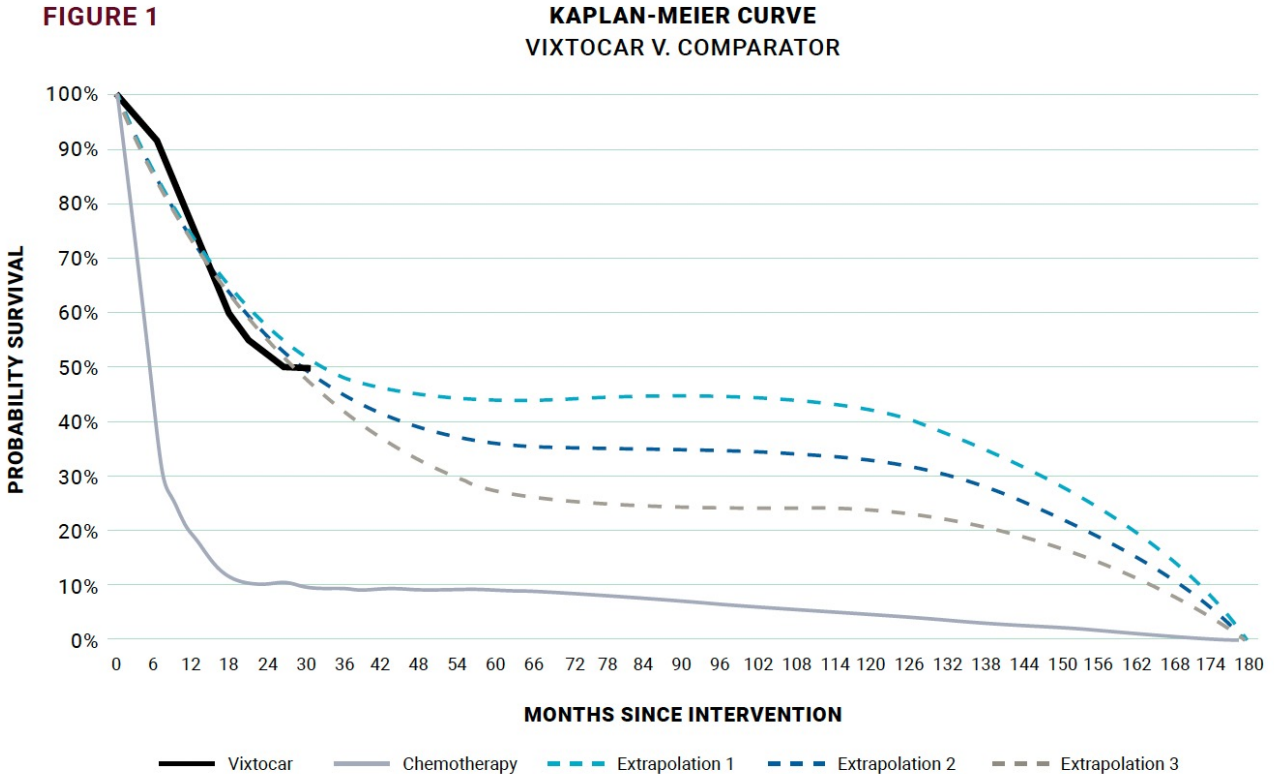
- As the lack of effectiveness certainty is the common ground pain point for alle parties, this is the issue that needs to be sovled in order to reach each parties individual players

- To give the most nuanced strategy the three extrapolation must be considered to accommodate for the current and future uncertainty

- Doing this will allow BMS to offer a flexible solution that will provide revenue based on results

- Likewise, the Danish Medical Council will pay a cost worth the benefit

Exploring all the extrapolations will allow BMS to work with the uncertainty instead of around it. Accommodating for the uncertainty in effectiveness will instead help everyone move towards their individual goals

Complication   Apprehension   Reaction   —   Timeline

4

The QALY and ICER calculations showcase that in all except the worst-case scenario Vixtocar will lead to a price reduction per quality year compared to Chemo

With Chemo the Willingness to pay is 652,000 DKK per additional quality year

Bull case:
Extrapolation 1

Average life expectancy post treatment	QALY per patient	ICER reduction compared to Chemo
6.34	5.08	-197,000

Base case:
Extrapolation 2

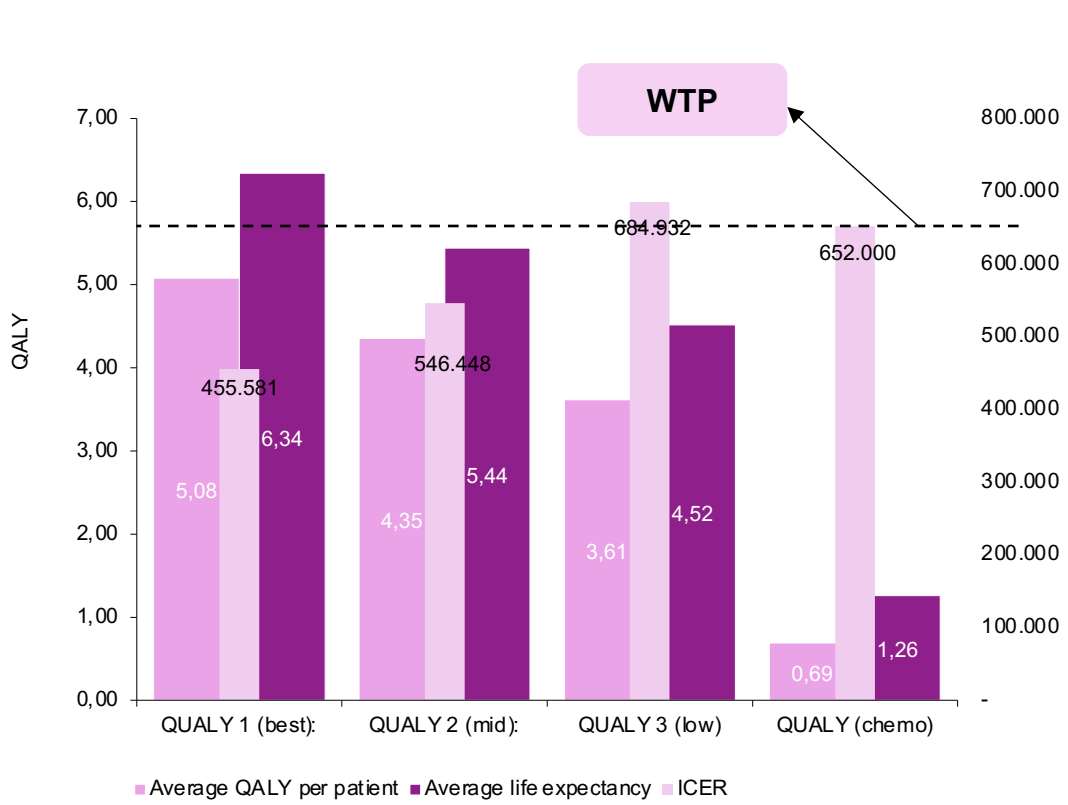| Average life expectancy post treatment	QALY per patient	Incremental cost reduction per QALY compared to chemo
5.44	4.35	-106,000

Bear case:
Extrapolation 3

Average life expectancy post treatment	QALY per patient	Incremental cost reduction per QALY compared to chemo
4.52	3.61	+33,000

WTP

Chart — QALY axis (left): 0.00 to 7.00; secondary axis (right): - to 800.000

- QUALY 1 (best): Average QALY per patient 5,08; Average life expectancy 6,34; ICER 455.581
- QUALY 2 (mid): Average QALY per patient 4,35; Average life expectancy 5,44; ICER 546.448
- QUALY 3 (low): Average QALY per patient 3,61; Average life expectancy 4,52; ICER 684.932
- QUALY (chemo): Average QALY per patient 0,69; Average life expectancy 1,26; ICER 652.000

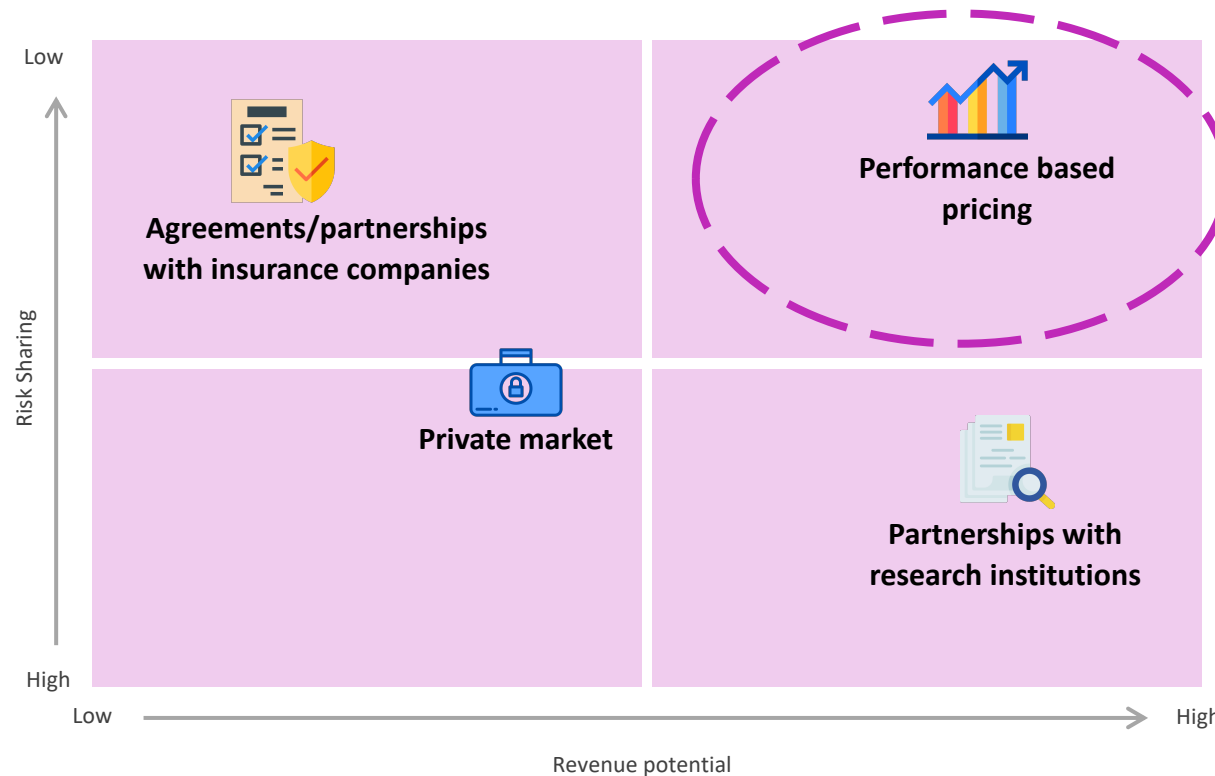Legend: ■ Average QALY per patient ■ Average life expectancy ■ ICER

List price for Vixtocar used in ICER: 2.45 m DKK

The sensitivity analysis clearly shows that all scenarios except the bear case will be above the WTP line

Bristol Myers Squibb will be able to overcome their main challenge of the uncertainty by launching the BMS predictive performance model

To figure out which

And why is this the best solutions

Risk Sharing (Low / High)

Revenue potential (Low / High)

- Agreements/partnerships with insurance companies
- **Performance based pricing**
- Private market
- Partnerships with research institutions

Getting Vixtocar as standard treatment will mean that more patients can received the treatment and be cured

The higher usage of Vixtocar will as a result over time decrease the uncertainness in effectiveness and give BMS a stronger standpoint in future countries

The BMS predictive performance model will accommodate the Danish Medical Council's hesitance and ensure they always get value=costs

Using performance based pricing will allow BMS to recognize and act upon the uncertainty, also over time.

Complication   Apprehension   **Reaction** — Timeline

The BMS predictive performance model will let the Danish Medical Council start of with a lower price, that increases as long-term effectiveness is proven

WHAT?

THE BMS PREDICTIVE PERFORMANCE MODEL

- The BMS predictive performance model is constructed to compensate the Danish Medical Council for the uncertainty that Vixtocar carries due to its short time being tested

- The model gives an initial discount to account for the uncertainty. Given that Vixtocar performs are expected it is followed up by performance-based installments

- Over time the starting discount will become smaller as more data comes in, and the effectiveness uncertainty diminishes

WHY?

"

Performance based pricing works exceptionally well with single treatments

Source: Harald Borgeke, HTA & HEOR Lear CAR-T, Nordics, BMS

Saves 698 extra quality years per year by getting Vixtocar in as standard treatment

Let's BMS **enter the market as standard treatment** without sacrificing profitability

Ensuring that the value of the treatment, taking uncertainties into account, **matches cost of treatment**

From the perspective of all three parties the BMS predictive performance model adjusts for the concerns in order to reach common and individual goals

Complication   Apprehension   **Reaction** — Timeline

Predictive Performance Pricing secures quick and sustainable penetration of Vixtocar and 53k saved per QALY

Future Payment Scheme for a typical Vixtocar Cancer Payment

	2022	2023	2024	2025	2026
Chemo	450,000				
Treatment Cost	450,000 30%		600,000 40%		450,000 30%
Hospital Costs	850,000				
All Other Costs	100,000				
Total Costs	1,400,000		600,000		2,450,000

Key assumptions and drivers

- Division of Treatment Cost secures cost of treatment to align with performance/value
- Revenue calculations based on constant market with market share converging to 40% by 2024
- COGS estimated as BSM's global of 84%

Impact based on different scenarios

	QALY	Cost per Average Treatment	Cost per QALY	Future-state QALY reduction
Chemo	0,69	450,000	652,000	0
Bear	3,61	2,450,000	685,000	+33,000
Base	4,35	2,450,000	546,000	-6,000
Bull	5,08	2,450,000	465,000	-187,000

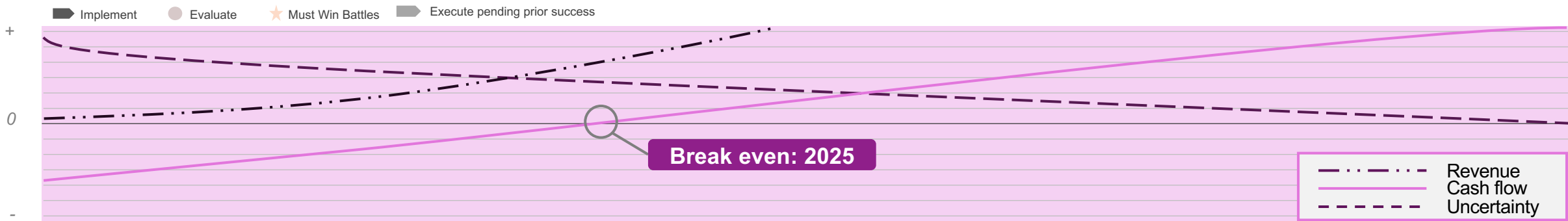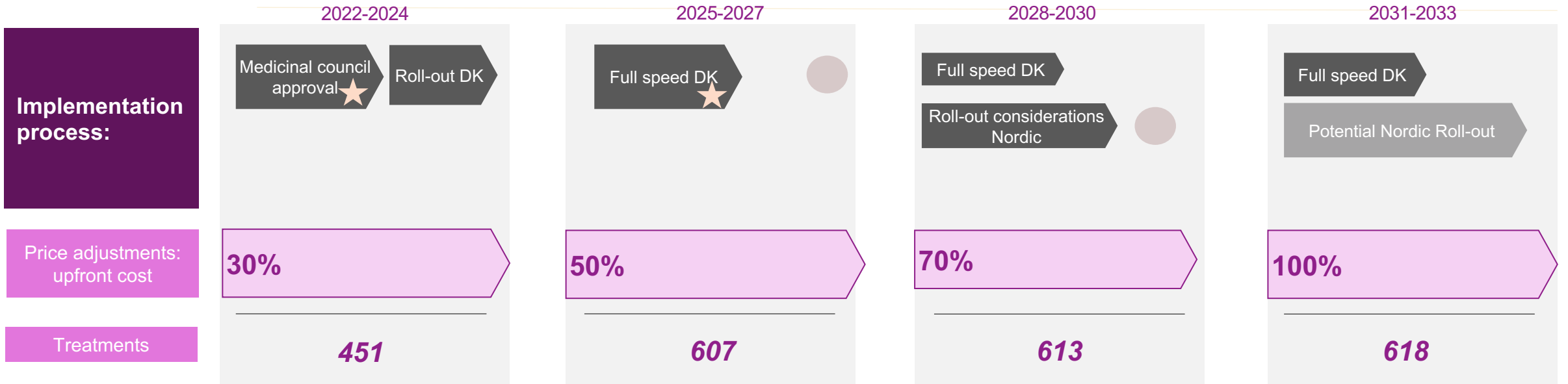✓ Future-state QALY reductions expected in two of three scenarios

✓ Average Future-state QALY reductions of 53,000 DKK

As uncertainty about performance decreases over time, Treatment Cost initial discounts and installments will be reduced to secure stable Cash Flow

Complication Apprehension **Reaction** — Timeline

The key to a successful implementation is scalability and flexibility as this is key for the model and project to work

2022-2024 **2025-2027** **2028-2030** **2031-2033**

Implementation process:

	2022-2024	2025-2027	2028-2030	2031-2033
	Medicinal council approval ★ → Roll-out DK	Full speed DK ★ ●	Full speed DK / Roll-out considerations Nordic ●	Full speed DK / Potential Nordic Roll-out

Price adjustments: upfront cost

30%	50%	70%	100%

Treatments

451	607	613	618

▶ Implement ● Evaluate ★ Must Win Battles ▶ Execute pending prior success

Break even: 2025

— · — Revenue
— Cash flow
- - - Uncertainty

The implementation plan allows for a roll-out in Denmark that is flexible due to the continuous decrease of effectiveness uncertainty as long-term effects become clear

$C_{omplication}$ $A_{pprehension}$ $R_{eaction}$ — $T_{imeline}$

The BMS predive performance model will not only get Vixtocar adopted as standard treatment and increase revenue by 5.6 bn over 12 years.

" *How can BMS get Vixtocar adopted as standard treatment while ensuring long-term revenue maximization and save even more lives*

BMS should introduce the:
THE BMS PREDICTIVE PERFORMANCE MODEL

Bristol Myers Squibb

➤ **Vixtocar entered at standard treatment**

➤ **Maximizing revenues**

Danish Medical Council

➤ **Value of treatment equal cost of treatment**

➤ **Savings per quality year compared to chemo**

Brown's lymphoma patients

➤ **More patients cured**

➤ **Increased number of quality years**

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