

## Supplementary Material

### OPT-IN; Optimized Patient Treatment Outcomes in Plaque Psoriasis: A 3-Year State-Transition Treatment-Sequencing Model in the Italian Setting

Sarah Alulis<sup>1</sup>, Nicoletta Bernardini<sup>2</sup>, Martina Burlando<sup>3</sup>, Antonio Costanzo<sup>4,5</sup>, Pier Cesare Francesca Morel<sup>6</sup>, Paolo Gisondi<sup>7</sup>, Francesco Loconsole<sup>8,9</sup>, Matteo Megna<sup>10</sup>, Giovanni Pellacani<sup>11</sup>, Stefano Piaserico<sup>12</sup>, Francesca Prignano<sup>13</sup>, Ottavio Secchi<sup>6</sup>, Nevena Skroza<sup>2</sup>, Fareen Hassan<sup>14</sup>

#### Institutions

<sup>1</sup>Janssen-Cilag A/S, Birkerød, Denmark

<sup>2</sup>Dermatology Unit “D. Innocenzi”, Department of Medical and Surgical Sciences and Biotechnologies, Sapienza University of Rome – Polo Pontino, Latina, Italy

<sup>3</sup>Clinica Dermatologica, Dissal, Ospedale Policlinico San Martino – IRCCS, Genoa, Italy

<sup>4</sup>Unit of Dermatology, IRCCS Humanitas Research Hospital, Rozzano, Milan, Italy

<sup>5</sup>Department of Biomedical Sciences, Humanitas University, Pieve Emanuele, Milan, Italy

<sup>6</sup>Janssen-Cilag, Cologno Monzese, Italy

<sup>7</sup>Section of Dermatology and Venereology, Department of Medicine, University of Verona, Verona, Italy

<sup>8</sup>Department of Biomedical Sciences and Human Oncology, University of Bari Aldo Moro, Bari, Italy

<sup>9</sup>Azienda-Ospedaliero Universitaria Consorziale Policlinico di Bari, Bari, Italy

<sup>10</sup>Section of Dermatology, Department of Clinical, Medicine and Surgery, University of Naples Federico II, Naples, Italy

<sup>11</sup>Dermatology Clinic, Department of Clinical Internal, Anesthesiologic and Cardiovascular Sciences, Sapienza Medical School, Sapienza University of Rome, Rome, Italy

<sup>12</sup>Dermatology Unit, Department of Medicine (DIMED), University of Padua, Padua, Italy

<sup>13</sup>Department of Health Sciences, Section of Dermatology, University of Florence, Florence, Italy

<sup>14</sup>Janssen-Cilag Ltd, High Wycombe, United Kingdom

#### Authors' email addresses

Sarah Alulis, MSc: [salulis@ITS.JNJ.com](mailto:salulis@ITS.JNJ.com)

Nicoletta Bernardini, MD: [nicoletta.bernardini@libero.it](mailto:nicoletta.bernardini@libero.it)

Martina Burlando, MD: [martinaburlando@hotmail.com](mailto:martinaburlando@hotmail.com)

Antonio Costanzo, MD, Prof: [antonio.costanzo@hunimed.eu](mailto:antonio.costanzo@hunimed.eu)

Pier Cesare Francesa Morel, MSc: [pfrances@its.jnj.com](mailto:pfrances@its.jnj.com)

Paolo Gisondi, MD, Prof: [paolo.gisondi@univr.it](mailto:paolo.gisondi@univr.it)

Francesco Loconsole, MD: [franciscus59@gmail.com](mailto:franciscus59@gmail.com)

Matteo Megna, MD: [mat24@libero.it](mailto:mat24@libero.it)

Giovanni Pellacani, MD, Prof: [pellacani.giovanni@gmail.com](mailto:pellacani.giovanni@gmail.com)

Stefano Piaserico, MD, Prof: [stefano.piaserico@unipd.it](mailto:stefano.piaserico@unipd.it)

Francesca Prignano, MD, Prof: [francesca.prignano@unifi.it](mailto:francesca.prignano@unifi.it)

Ottavio Secchi, MSc: [osecchi@ITS.JNJ.com](mailto:osecchi@ITS.JNJ.com)

Nevena Skroza, MD, Prof: [nevena.skroza@uniroma1.it](mailto:nevena.skroza@uniroma1.it)

Fareen Hassan, MSc: [fhassan4@ITS.JNJ.com](mailto:fhassan4@ITS.JNJ.com)

**Corresponding author**

Pier Cesare Francesa Morel

Via Michelangelo Buonarroti, 23, 20093

Cologno Monzese (MI)

3489193836

[pfrances@its.jnj.com](mailto:pfrances@its.jnj.com)

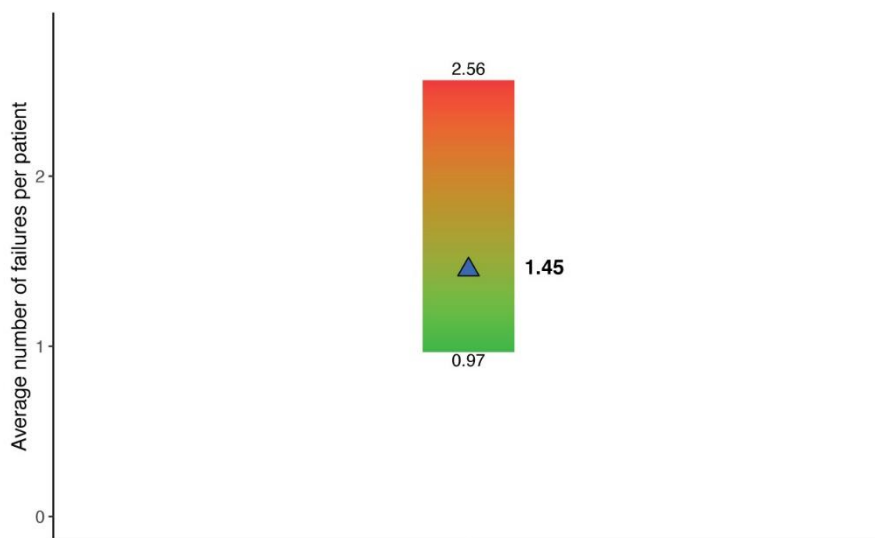


Figure S1. Average number of treatment failures from most to least effective sequences in Liguria based on a treatment target of PASI 90 response.

Red: Least efficacious sequence; green: most efficacious sequence; blue: current practice average

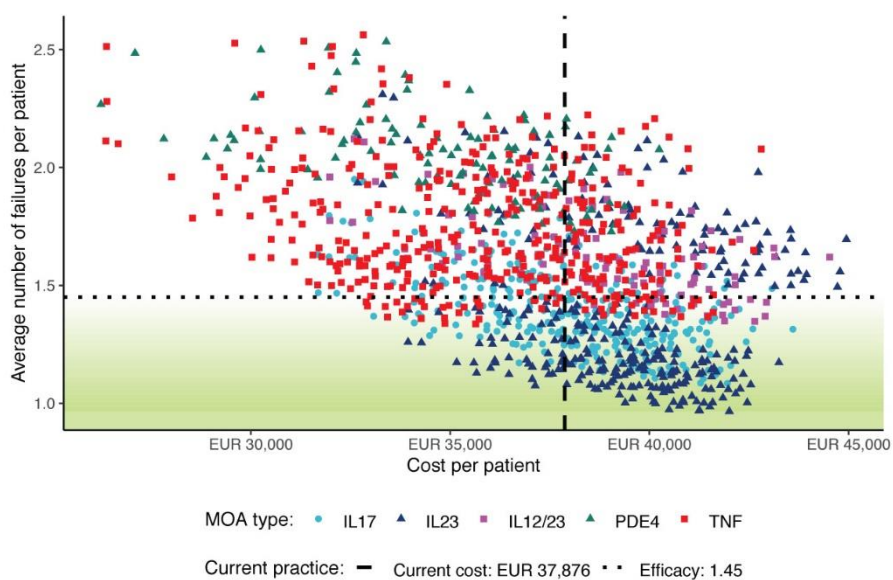


Figure S2. All possible treatment sequences plotted based on efficacy and cost, PASI 90 response in Liguria.

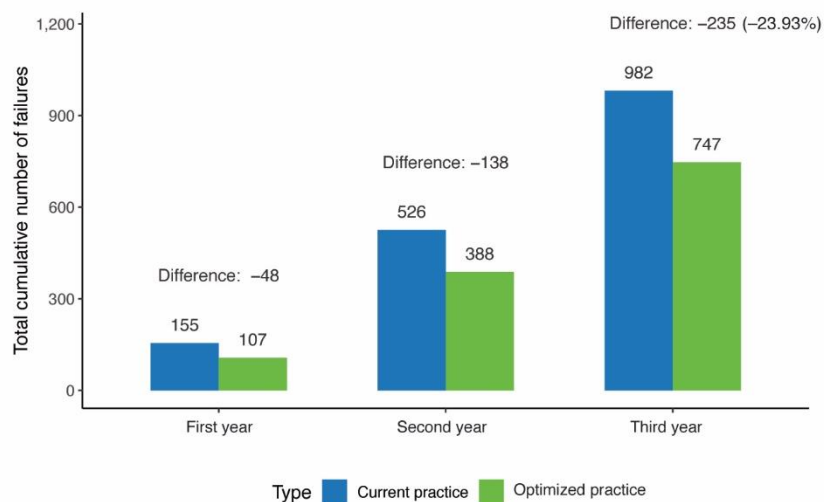


Figure S3. Cumulative difference in total number of treatment failures between current practice and optimized practice in Liguria.

	Current practice (€)	Optimized practice (€)	Impact of shifting to Optimized Practice (€, %)
Cost of treatment	30,246,349	31,165,605	919,256 (3.04%)
Cost of managing treatment failures	664,613	505,566	-159,047 (-23.93%)
Total costs	30,910,962	31,671,171	760,209 (2.46%)

Table S1. Cumulative difference in expenditure between current practice (2019–2021) and optimized practice (2022–2024) in Liguria.

# Lombardy

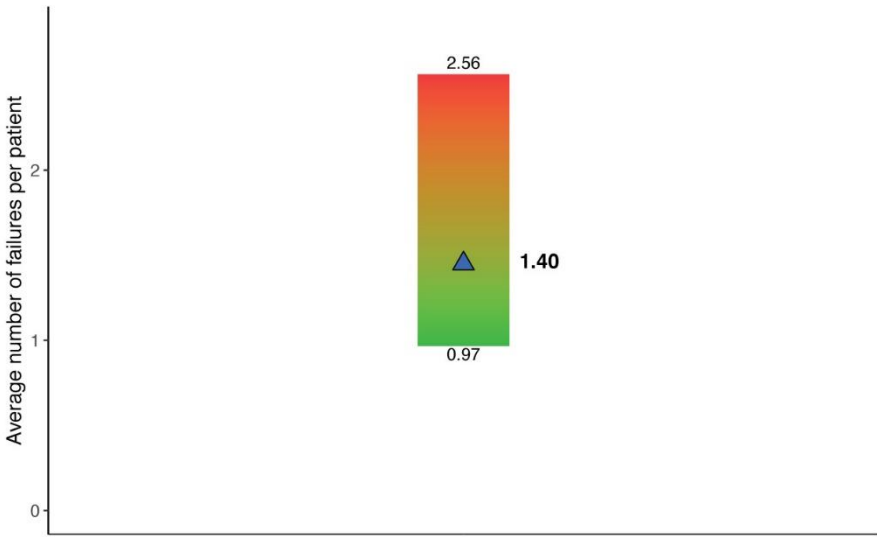


Figure S4. Average number of treatment failures from most to least effective sequences in Lombardy based on a treatment target of PASI 90 response.

Red: Least efficacious sequence; green: most efficacious sequence; blue: current practice average

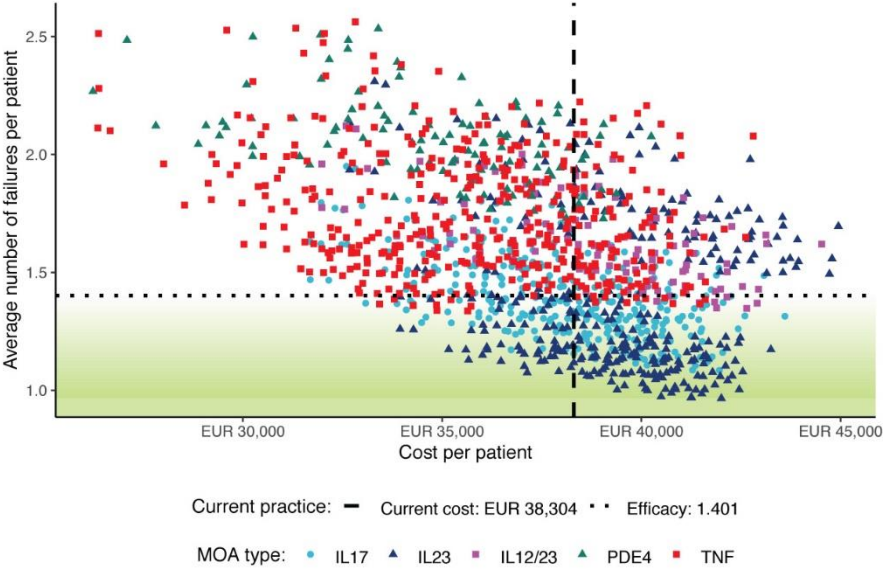


Figure S5. All possible treatment sequences plotted based on efficacy and cost, PASI 90 response in Lombardy.

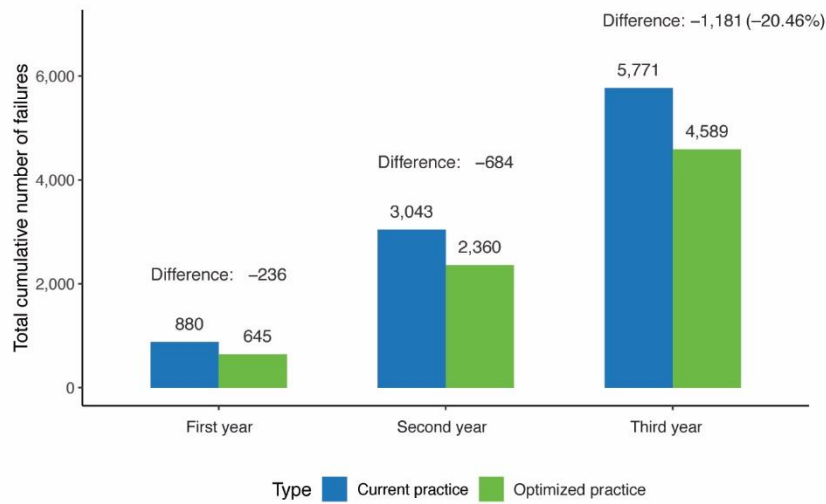


Figure S6. Cumulative difference in total number of treatment failures between current practice and optimized practice in Lombardy.

	Current practice (€)	Optimized practice (€)	Impact of shifting to Optimized Practice (€, %)
Cost of treatment	191,482,213	194,932,145	3,449,932 (1.80%)
Cost of managing treatment failures	3,905,788	3,105,815	-799,972 (-20.48%)
Total costs	195,388,001	198,037,960	2,649,960 (1.36%)

Table S2. Cumulative difference in expenditure between current practice (2019–2021) and optimized practice (2022–2024) in Lombardy.

# Veneto

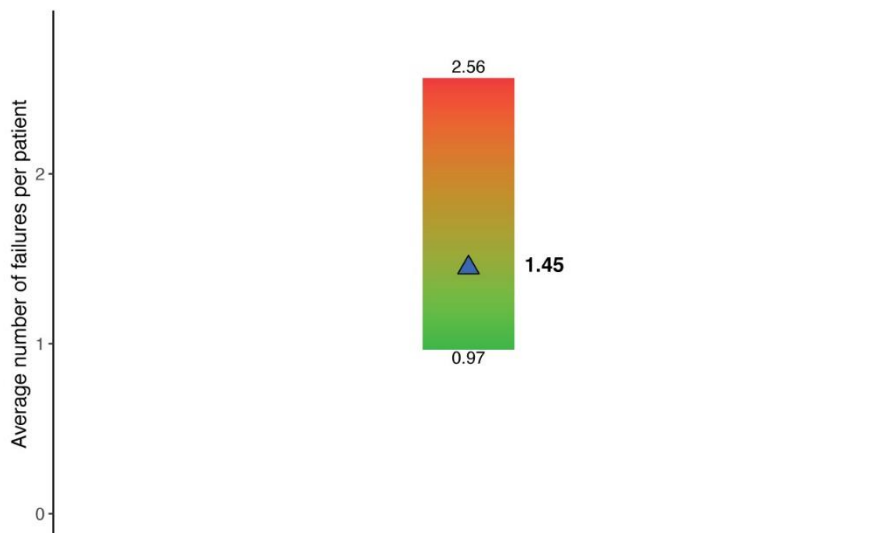


Figure S7. Average number of treatment failures from most to least effective sequences in Veneto based on a treatment target of PASI 90 response.

Red: Least efficacious sequence; green: most efficacious sequence; blue: current practice average

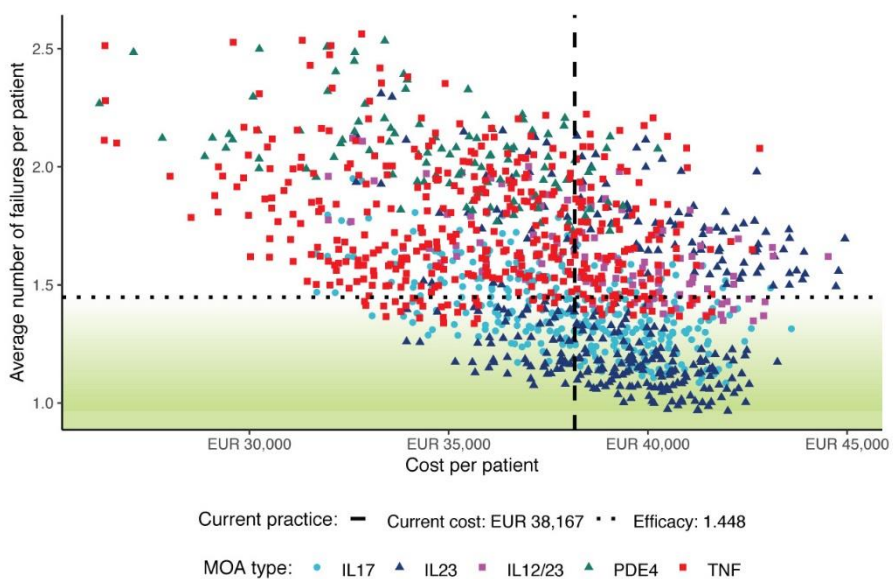


Figure S8. All possible treatment sequences plotted based on efficacy and cost, PASI 90 response in Veneto.

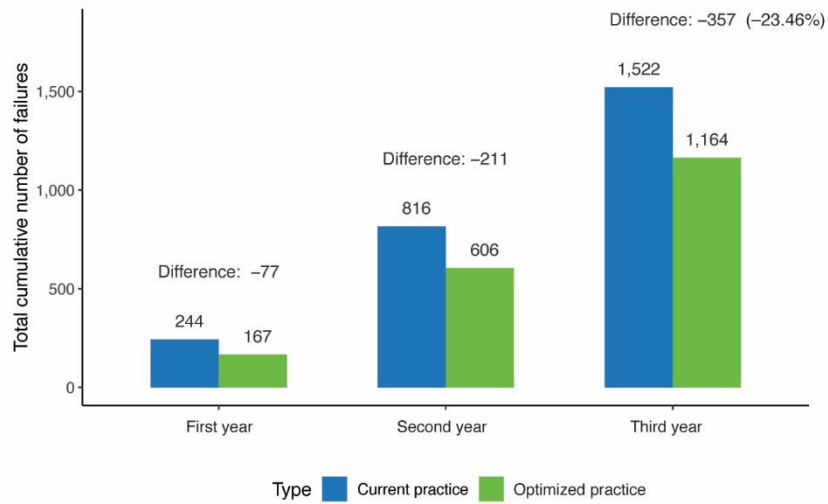


Figure S9. Cumulative difference in total number of treatment failures between current practice and optimized practice in Veneto.

	Current practice (€)	Optimized practice (€)	Impact of shifting to Optimized Practice (€, %)
Cost of treatment	47,624,779	48,624,549	999,770 (2.10%)
Cost of managing treatment failures	1,030,083	787,790	-242,293 (-23.52%)
Total costs	48,654,862	49,412,339	757,477 (1.56%)

Table S3. Cumulative difference in expenditure between current practice (2019–2021) and optimized practice (2022–2024) in Veneto.



# Tuscany

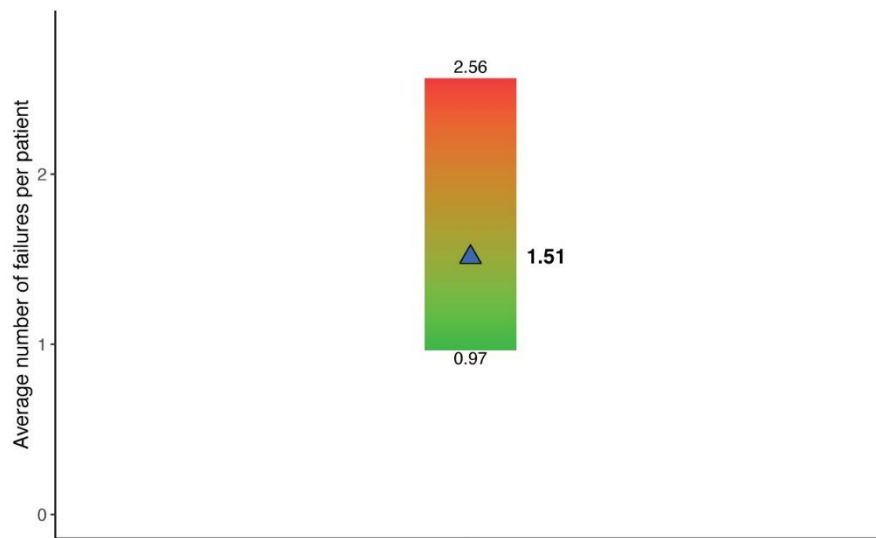


Figure S10. Average number of treatment failures from most to least effective sequences in Tuscany based on a treatment target of PASI 90 response.

Red: Least efficacious sequence; green: most efficacious sequence; blue: current practice average

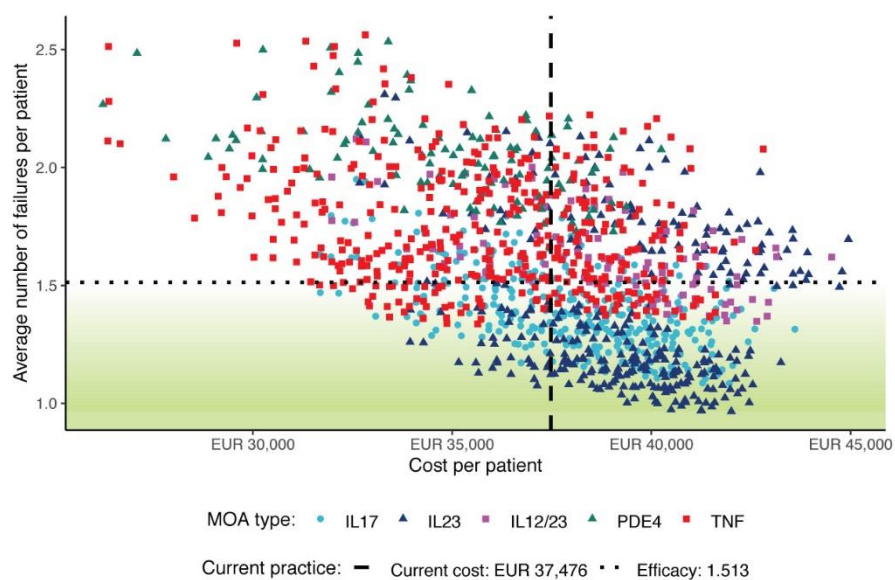


Figure S11. All possible treatment sequences plotted based on efficacy and cost, PASI 90 response in Tuscany.

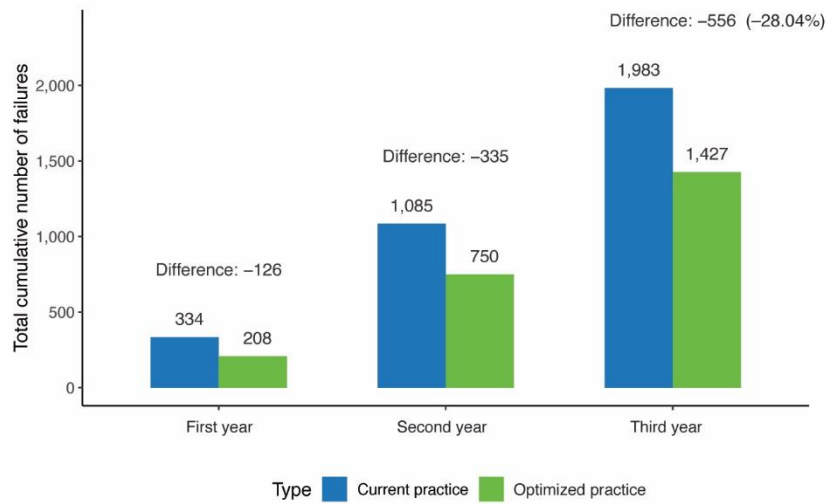


Figure S12. Cumulative difference in total number of treatment failures between current practice and optimized practice in Tuscany.

	Current practice (€)	Optimized practice (€)	Impact of shifting to Optimized Practice (€, %)
Cost of treatment	55,670,426	57,907,743	2,237,317 (4.02%)
Cost of managing treatment failures	1,342,086	965,787	-376,298 (-28.04%)
Total costs	57,012,512	58,873,530	1,861,019 (3.26%)

Table S4. Cumulative difference in expenditure between current practice (2019–2021) and optimized practice (2022–2024) in Tuscany.

Lazio

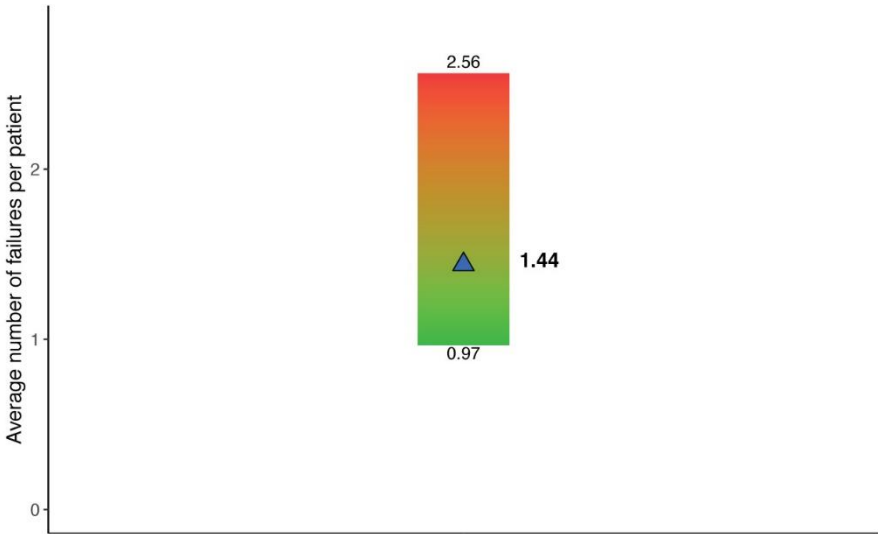


Figure S13. Average number of treatment failures from most to least effective sequences in Lazio based on a treatment target of PASI 90 response.

Red: Least efficacious sequence; green: most efficacious sequence; blue: current practice average

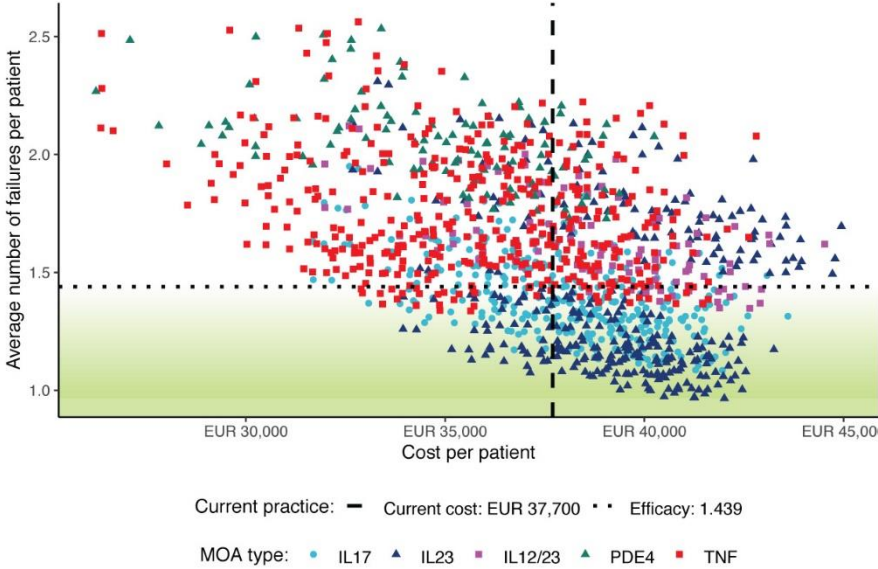


Figure S14. All possible treatment sequences plotted based on efficacy and cost, PASI 90 response in Lazio.

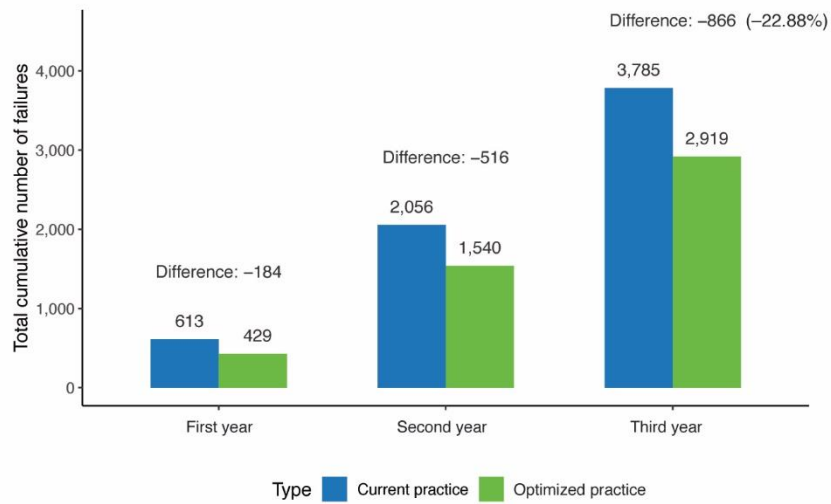


Figure S15. Cumulative difference in total number of treatment failures between current practice and optimized practice in Lazio.

	Current practice (€)	Optimized practice (€)	Impact of shifting to Optimized Practice (€, %)
Cost of treatment	99,880,732	104,059,967	4,179,235 (4.18%)
Cost of managing treatment failures	2,561,672	1,975,567	-586,105 (-22.88%)
Total costs	102,442,404	106,035,534	3,593,130 (3.51%)

Table S5. Cumulative difference in expenditure between current practice (2019–2021) and optimized practice (2022–2024) in Lazio.

## Campania

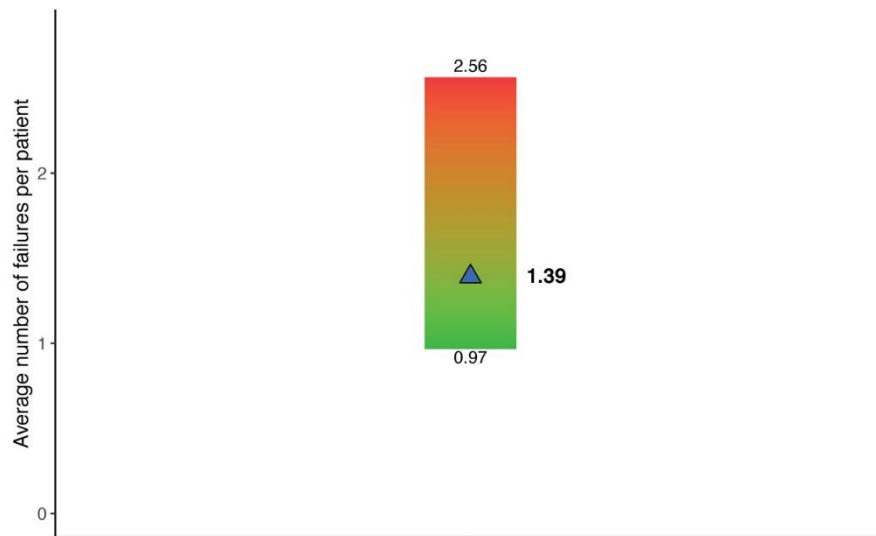


Figure S16. Average number of treatment failures from most to least effective sequences in Campania based on a treatment target of PASI 90 response.

Red: Least efficacious sequence; green: most efficacious sequence; blue: current practice average

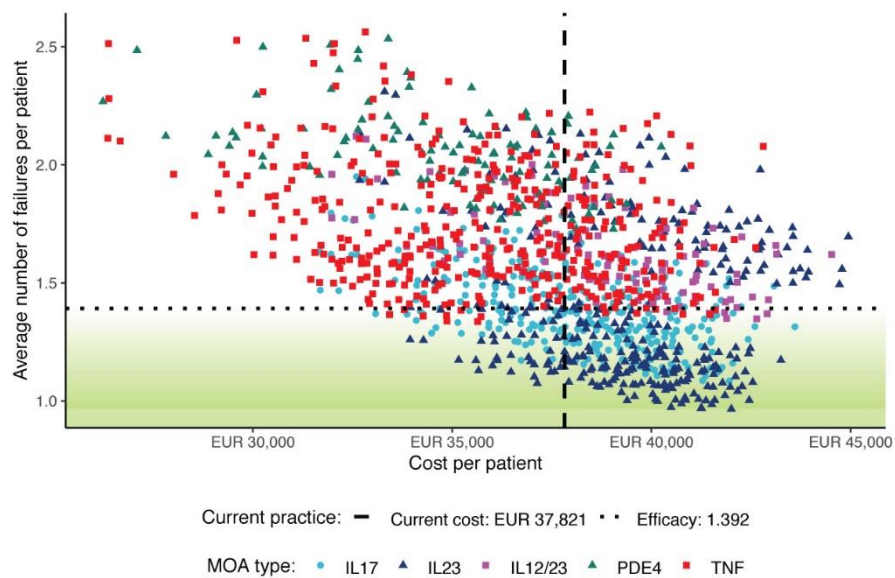


Figure S17. All possible treatment sequences plotted based on efficacy and cost, PASI 90 response in Campania.

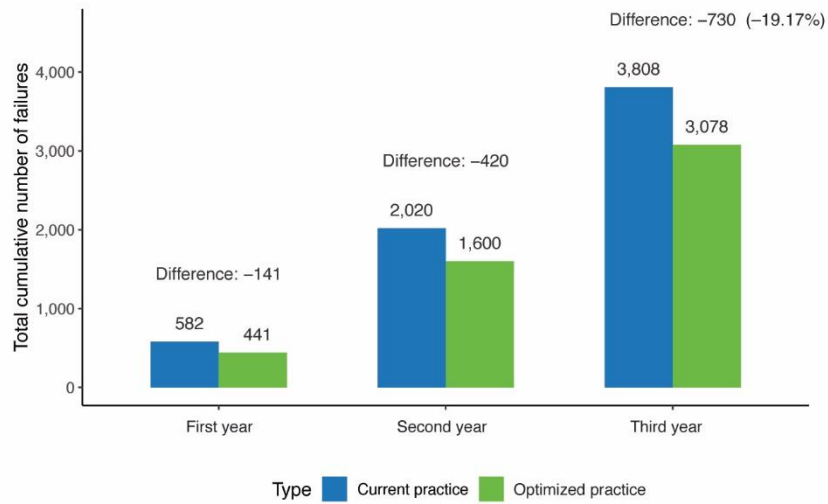


Figure S18. Cumulative difference in total number of treatment failures between current practice and optimized practice in Campania.

	Current practice (€)	Optimized practice (€)	Impact of shifting to Optimized Practice (€, %)
Cost of treatment	122,700,759	126,945,048	4,244,289 (3.46%)
Cost of managing treatment failures	2,577,238	2,083,177	-494,061 (-19.17%)
Total costs	125,277,997	129,028,225	3,750,228 (2.99%)

Table S6. Cumulative difference in expenditure between current practice (2019–2021) and optimized practice (2022–2024) in Campania.

# Apulia

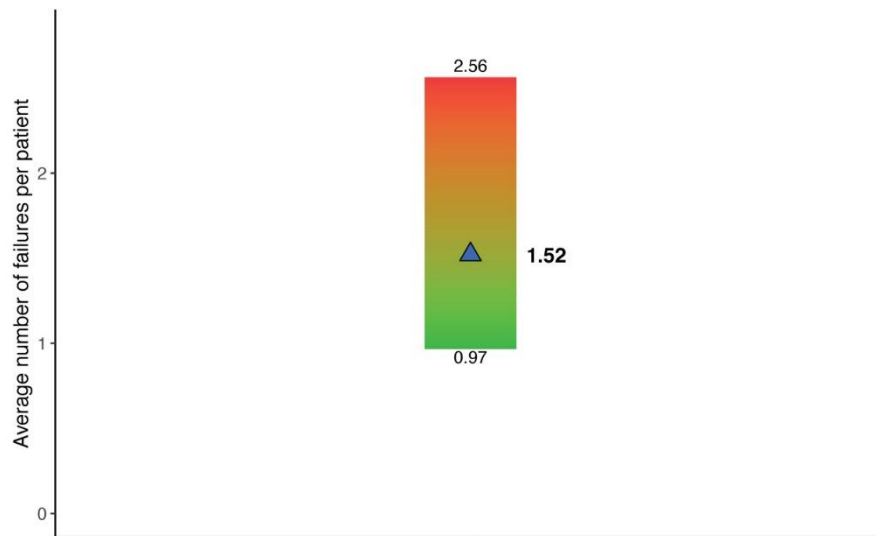


Figure S19. Average number of treatment failures from most to least effective sequences in Apulia based on a treatment target of PASI 90 response.

Red: Least efficacious sequence; green: most efficacious sequence; blue: current practice average

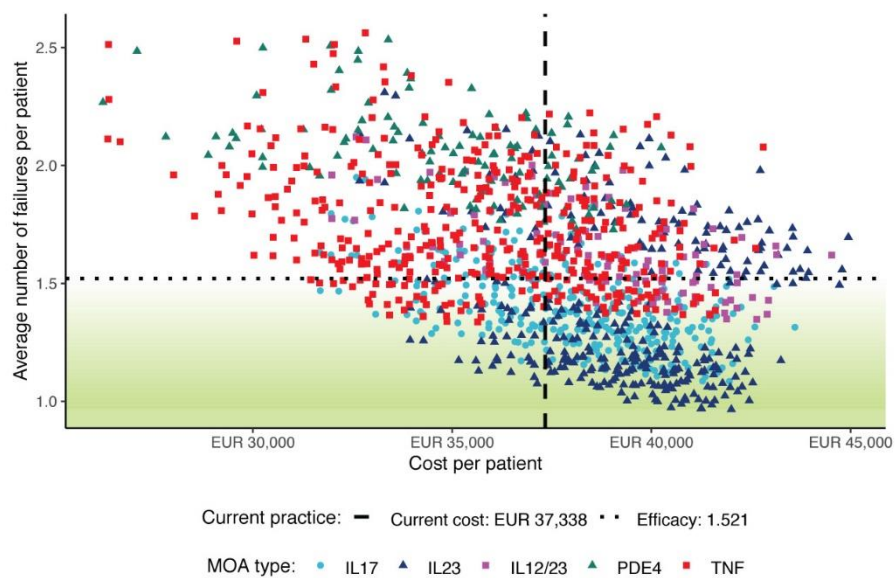


Figure S20. All possible treatment sequences plotted based on efficacy and cost, PASI 90 response in Apulia.

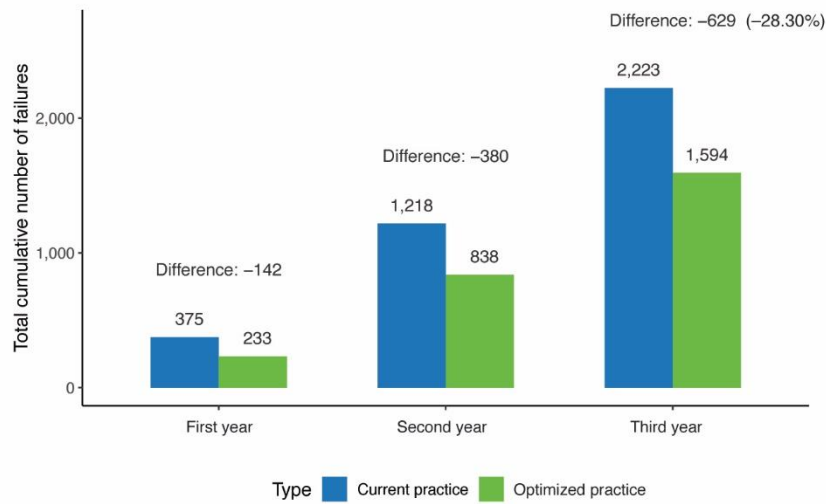


Figure S21. Cumulative difference in total number of treatment failures between current practice and optimized practice in Apulia.

	Current practice (€)	Optimized practice (€)	Impact of shifting to Optimized Practice (€, %)
Cost of treatment	60,813,942	63,516,708	2,702,766 (4.44%)
Cost of managing treatment failures	1,504,517	1,078,812	-425,704 (-28.30%)
Total costs	62,318,459	64,595,520	2,277,062 (3.65%)

Table S7. Cumulative difference in expenditure between current practice (2019–2021) and optimized practice (2022–2024) in Apulia.