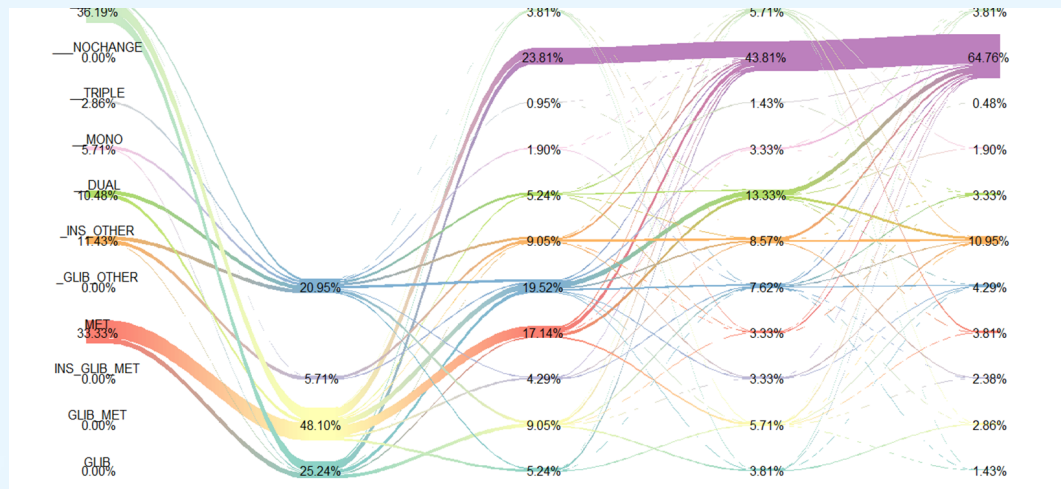


Real-world Patient Treatment Journeys in Combination with Health Assessments at Critical Drug-changing Time Points



Sep-2018

Agenda

- Used databases and linkage
- Analysis and presentation
- Examples and applications

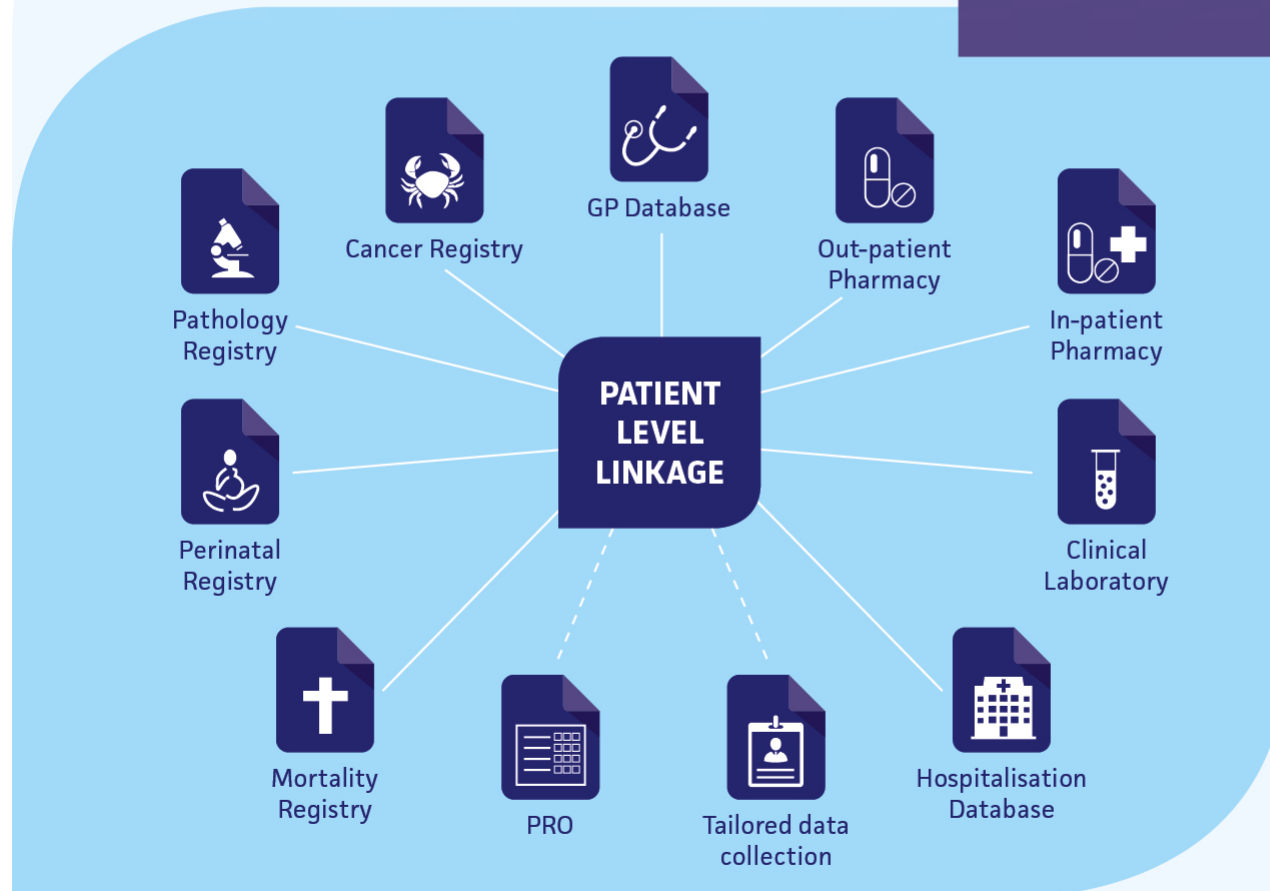
Application

- Post authorisation safety studies (PASS)
- Real World effectiveness studies
- Market Access
 - Pre- / post- launch
- Market insights
 - Who initiates for what patients

PHARMO Database Network (NL)

PHARMO Database Network

Rapid access to primary and secondary healthcare data



PHARMO in Europe

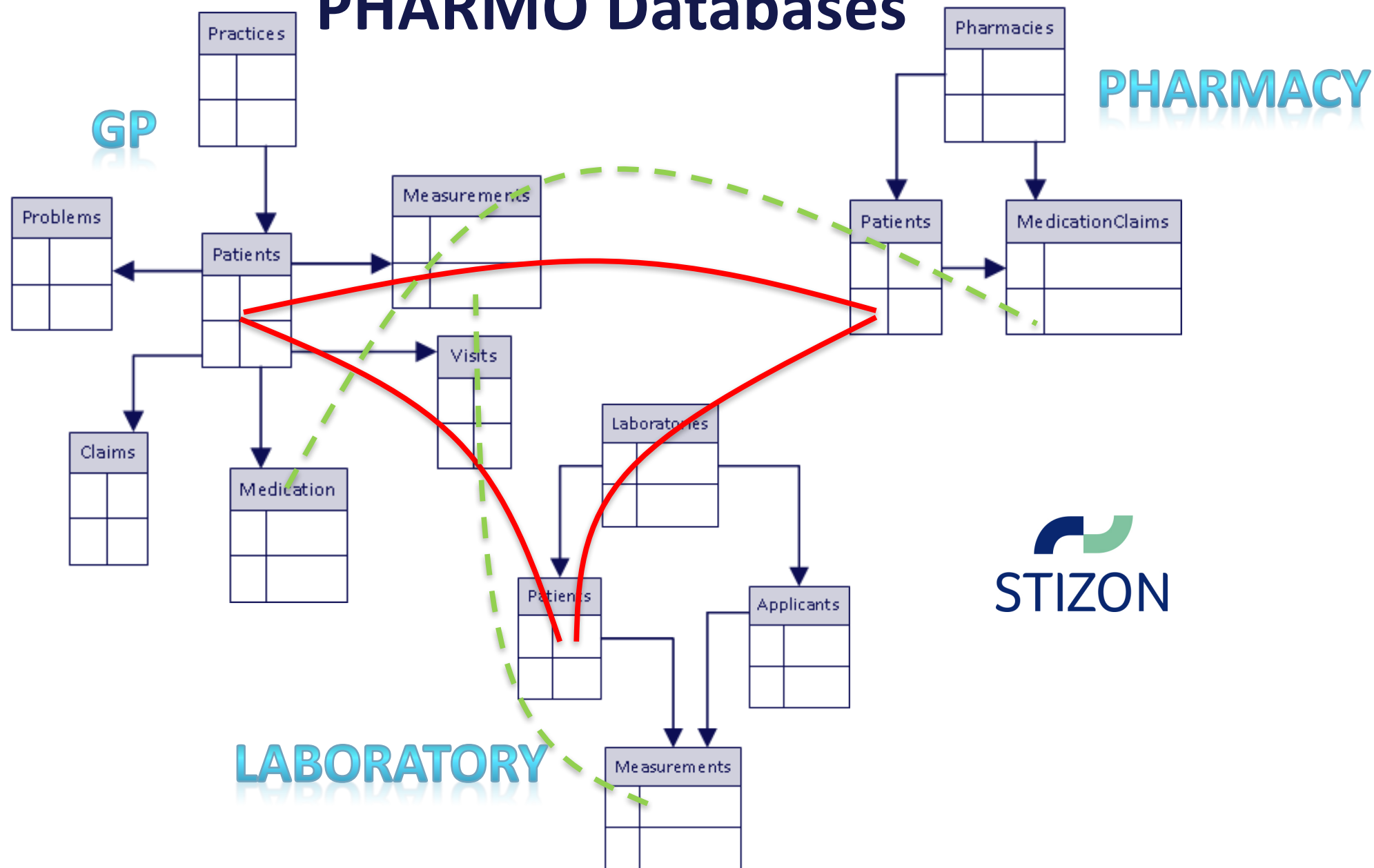
- Linked data
- Primary/secondary care data
- Claims data

Collaboration with partners in:

UK
Germany
France
Italy
Spain
Denmark
Norway
Sweden
Finland



PHARMO Databases



Data linkage

- Exact
 - Social security number
- Deterministic
 - Match criteria
- Probabilistic
 - Based on likelihood



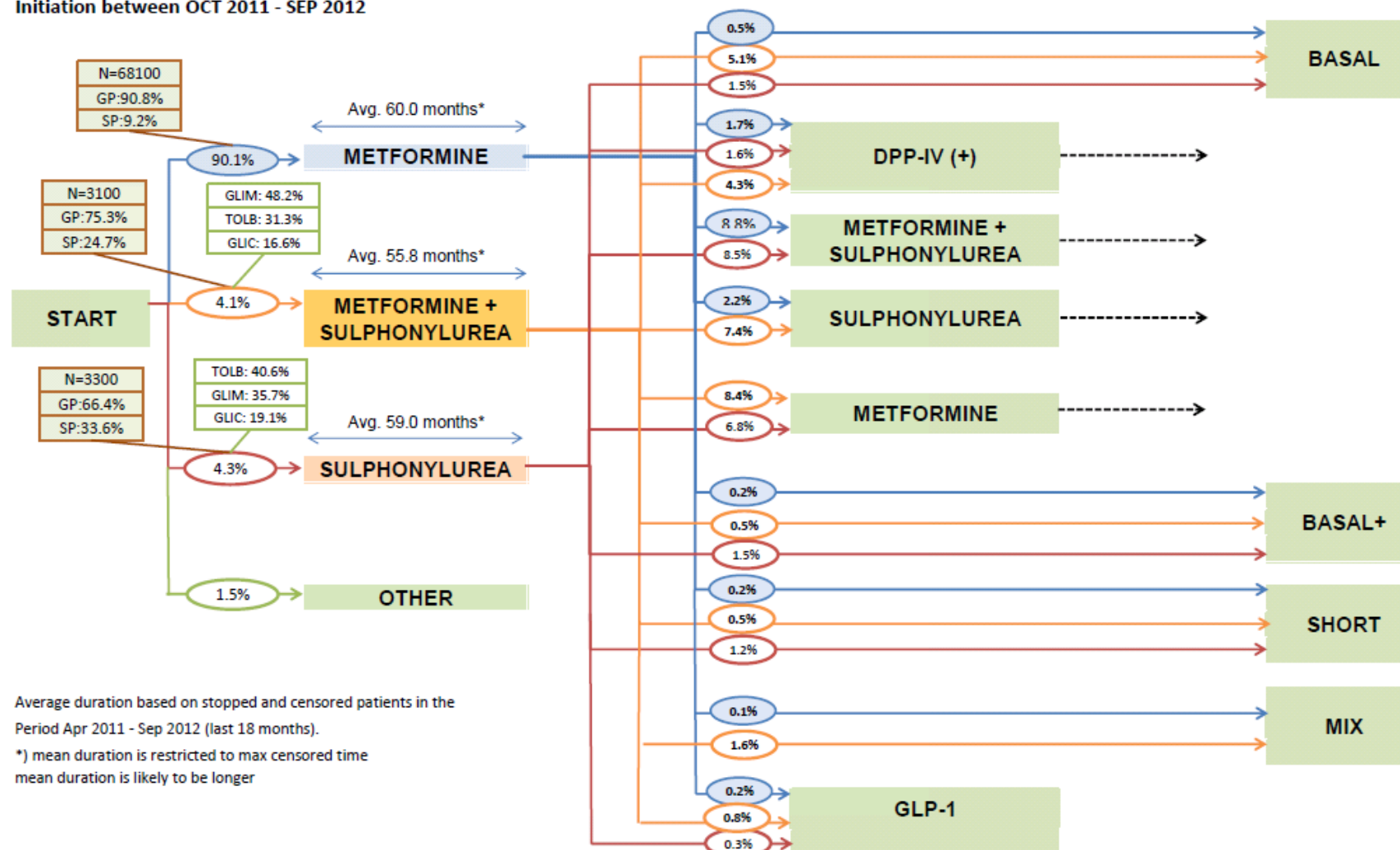
Privacy

- Anonimization vs pseudonimization
- Proportionality
- Separation
- Control of access
- Date shifting

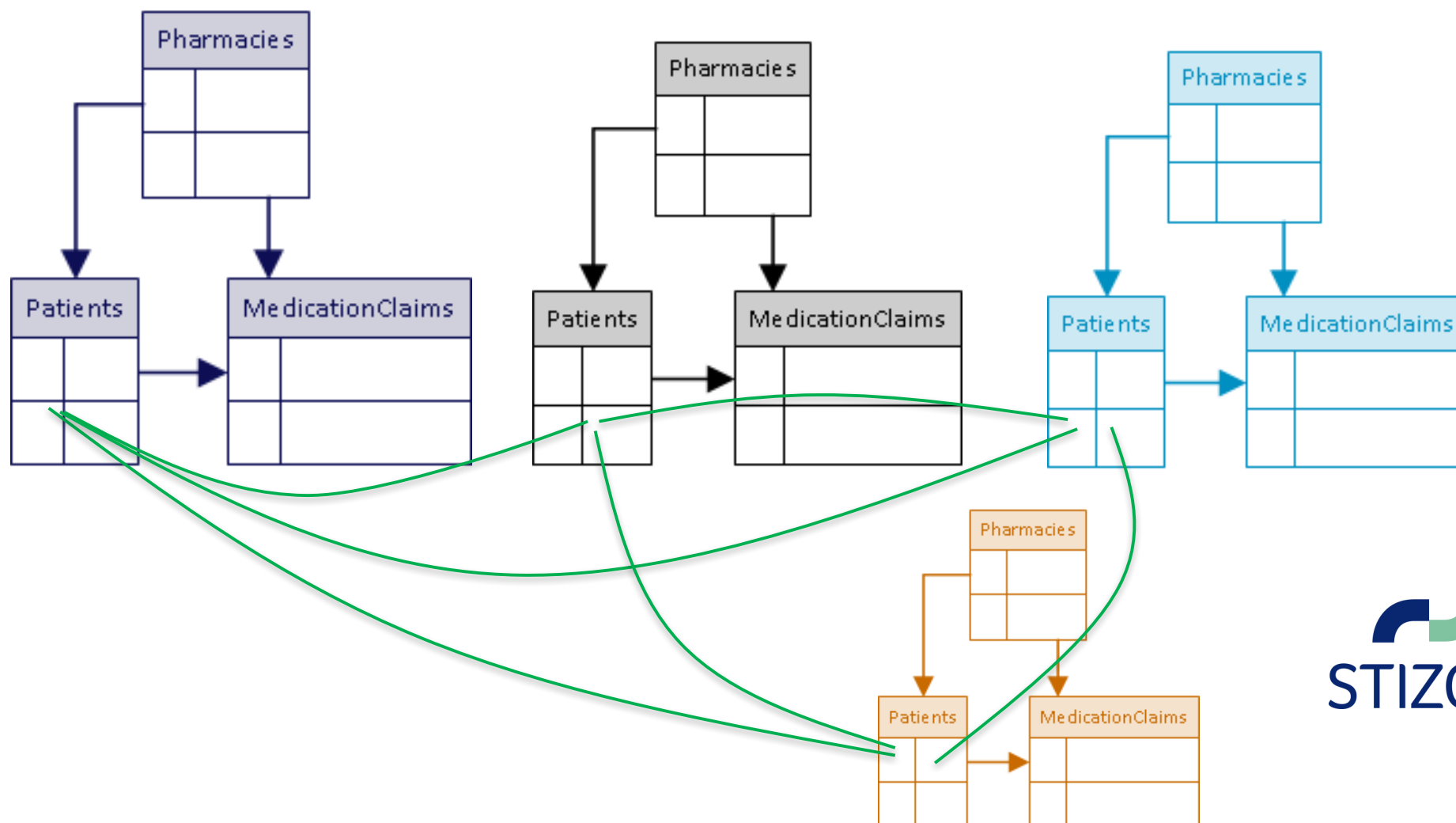


The treatment journey

Initiation between OCT 2011 - SEP 2012



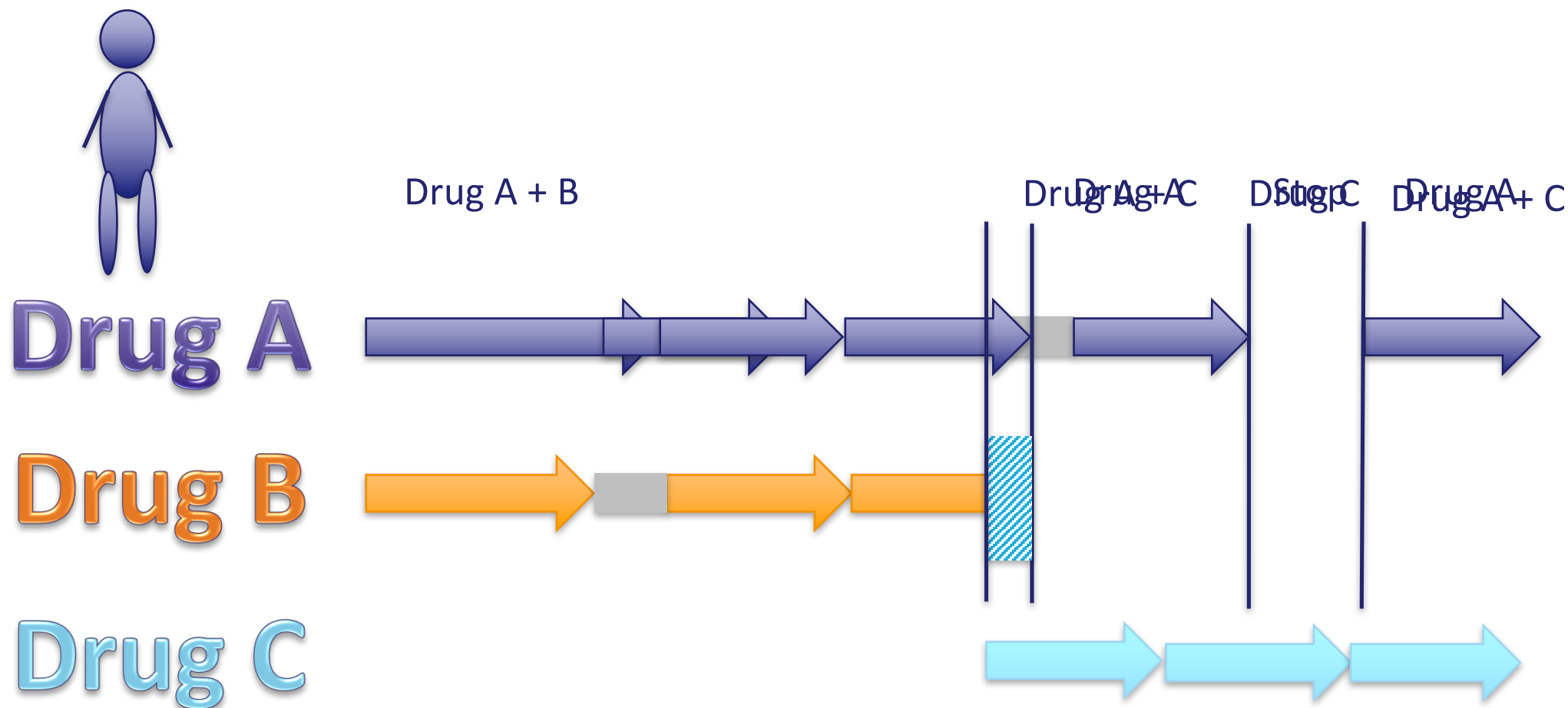
Pharmacy data



Pharmacy data – prescriptions

	patno	duration	date	amount	unit	avgdaydos	labelDrug	labeldose
1	219	12	27/06/2018	14	ST	2	DIPHANTOINE-Z 75 TABLET 6	2 keer per dag 1 tablet
2	555	30	11/01/2018	60	ST	2	OXYCODON HCL LANNACHER TA	2x per dag 1 tablet
3	305	14	14/05/2018	1	ST	0	ZZ AUT 4	
4	397	16	22/05/2018	14	ST	1	RAMIPRIL SANDOZ TABLET 5MG	1 keer per dag 1 tablet
5	733	7	05/03/2018	7	ST	1	TOLBUTAMIDE AUROBINDO TABLE	1x per dag 1 tablet
6	896	11	23/04/2018	7	ST	1	CLOPIDOGREL AUROBINDO TAB F	ochtend: 1 tablet
7	415	10	23/01/2018	28	ST	4	OMEPRAZOL MYLAN CAPSULE M	2x per dag 2 capsules
8	916	10	06/02/2018	7	ST	1	OXAZEPAM CF TABLET 10MG	's avonds 1 tablet
9	955	11	06/03/2018	7	ST	1	LORAZEPAM CF TABLET 1MG	voor de nacht 1 tablet
10	423	10	01/05/2018	7	ST	1	QUETIAPINE SANDOZ SR TABLET	voor de nacht: 1 tablet
11	279	10	05/06/2018	28	ST	4	TOLBUTAMIDE APOTEX TABLET	2 keer per dag 2 tabletten
12	191	96	23/05/2018	84	ST	1	CODIOVAN TABLET OMHULD 320/	1 keer per dag 1 tablet
13	986	90	15/03/2018	800	ML	0	PROVIDE XTRA VLOEIBARE VOED	
14	390	90	06/04/2018	90	ST	1	SPIRONOLACTON SANDOZ TABL...	1 keer per dag 1 tablet
15	163	90	15/02/2018	3	ST	2	ALVESCO 160 AEROSOL 160MCG/	1x per dag 2 inhalaties
16	323	10	09/01/2018	7	ST	1	ALLOPURINOL PCH TABLET 100M	1x per dag 1 tablet
17	998	10	06/03/2018	7	ST	1	ALLOPURINOL PCH TABLET 100M	1x per dag 1 tablet
18	657	10	17/04/2018	7	ST	1	EZETROL TABLET 10MG	1 keer per dag 1 tablet
19	188	10	17/04/2018	7	ST	1	FUROSEMIDE CF TABLET 40MG	ochtend: 1 tablet
20	302	10	22/05/2018	21	ST	3	METFORMINE HCL TEVA TABLET	3 keer per dag 1 tablet
21	5	10	24/07/2018	7	ST	1	LEVOTHYROXINENATRIUM TEVA T	1 keer per dag 1 tablet
22	832	10	23/01/2018	7	ST	1	SPIRONOLACTON TABLET 12,5MG	1x per dag 1 tablet
23	575	10	13/03/2018	7	ST	1	PANTOPRAZOL SANDOZ TABLET M	1x per dag 1 tablet

Creation of drug episodes



PhUSE WIKI: Challenges of sequential treatment analysis, Edith Heintjes

Treatment patterns

- RWE vs. treatment guidelines

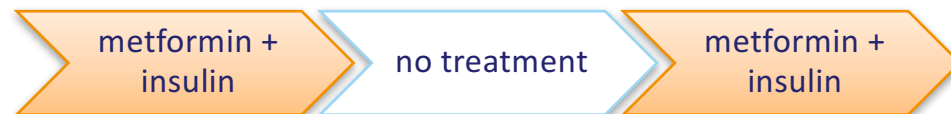
Treatment guideline: escalation



RWE: de-intensification

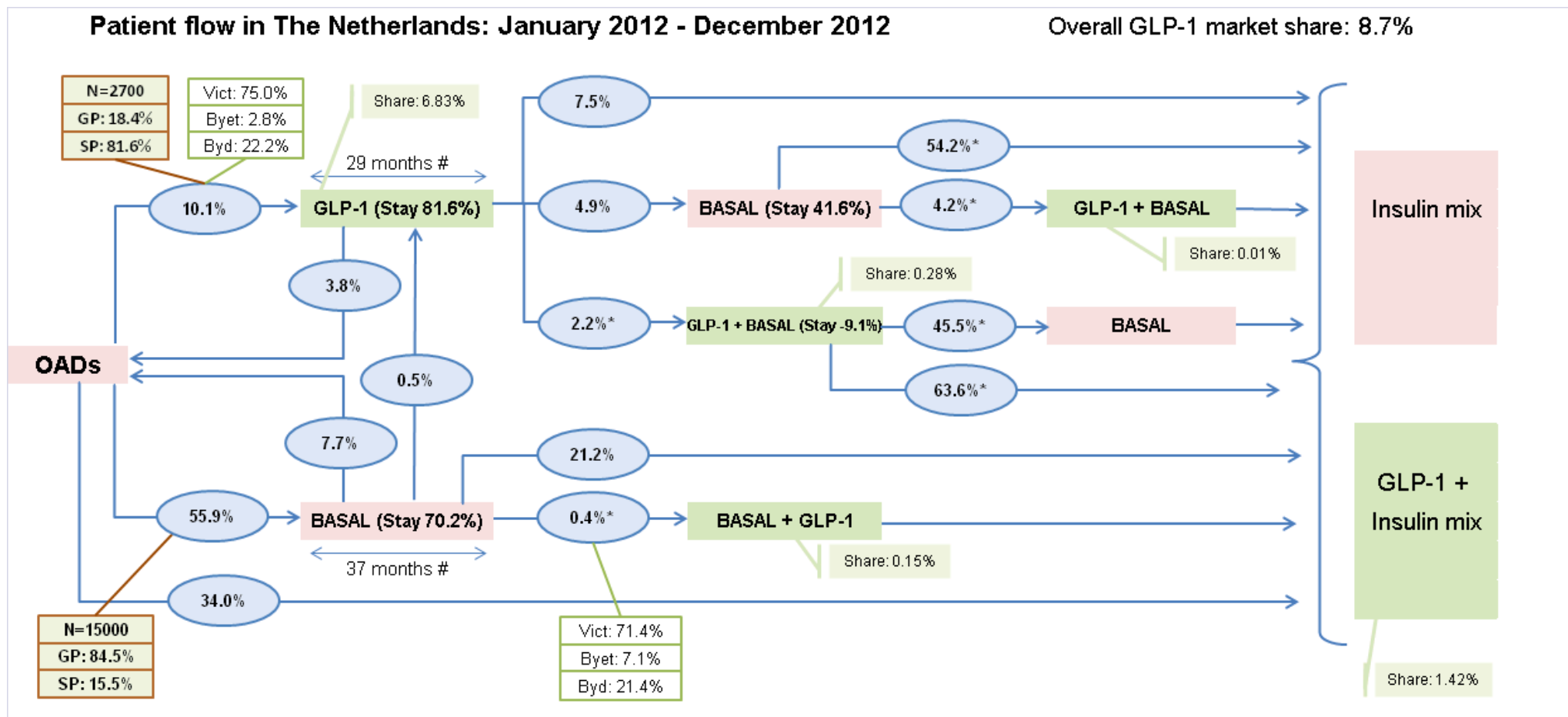


RWE: drug holidays



Do treatment patterns reflect expectations?

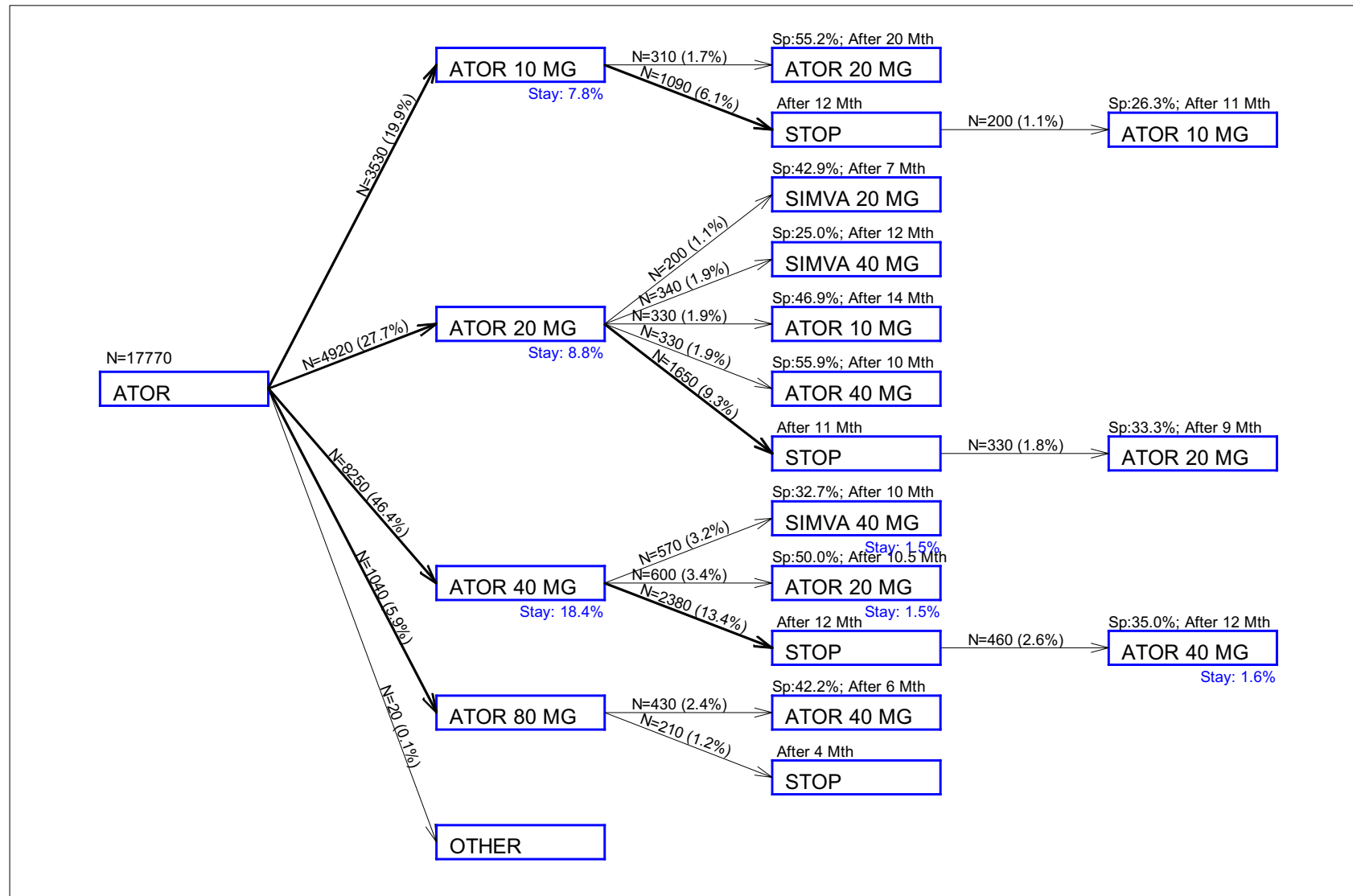
The treatment journey



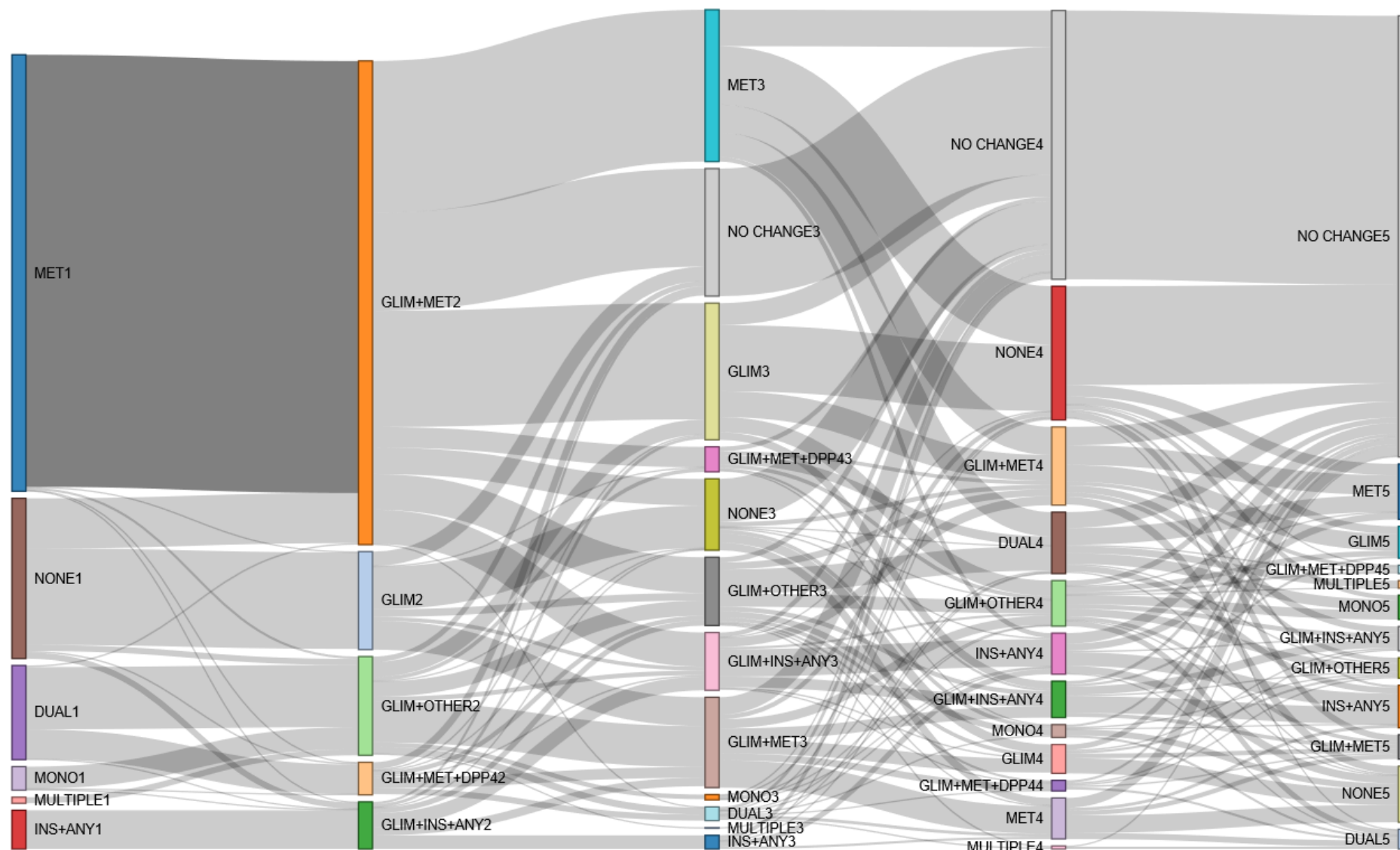
Considerations

- Only add need to have
 - Nice to have will make it too complex
- Only show the big picture
 - Remove small subsets of data
 - Keep to the focus of interest
 - Look at drug classes instead of single drugs
- Different appearance by information type
 - Colour
 - Shapes

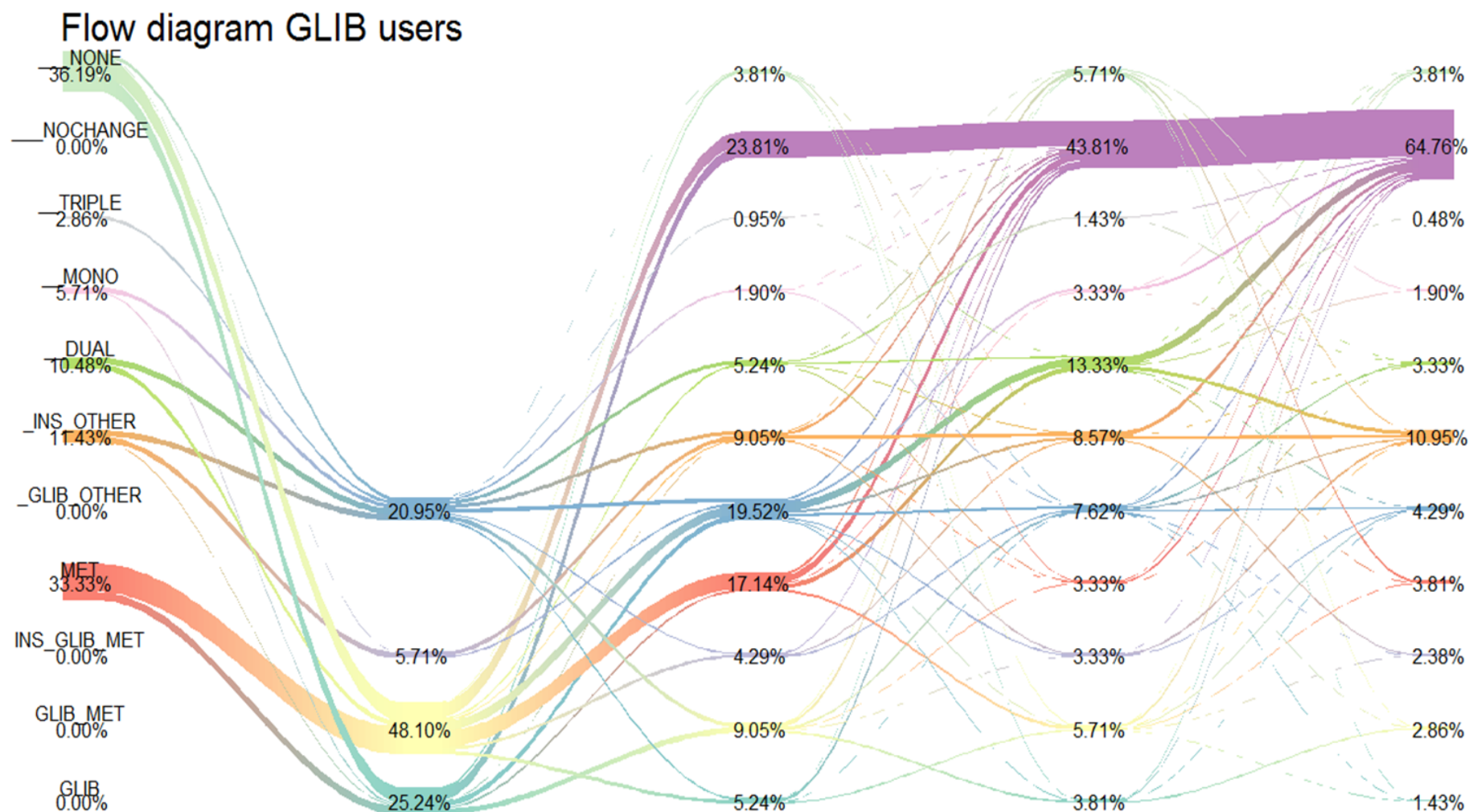
Treatment journey



Treatment journey - Sankey



Treatment journey – river plot



Time window

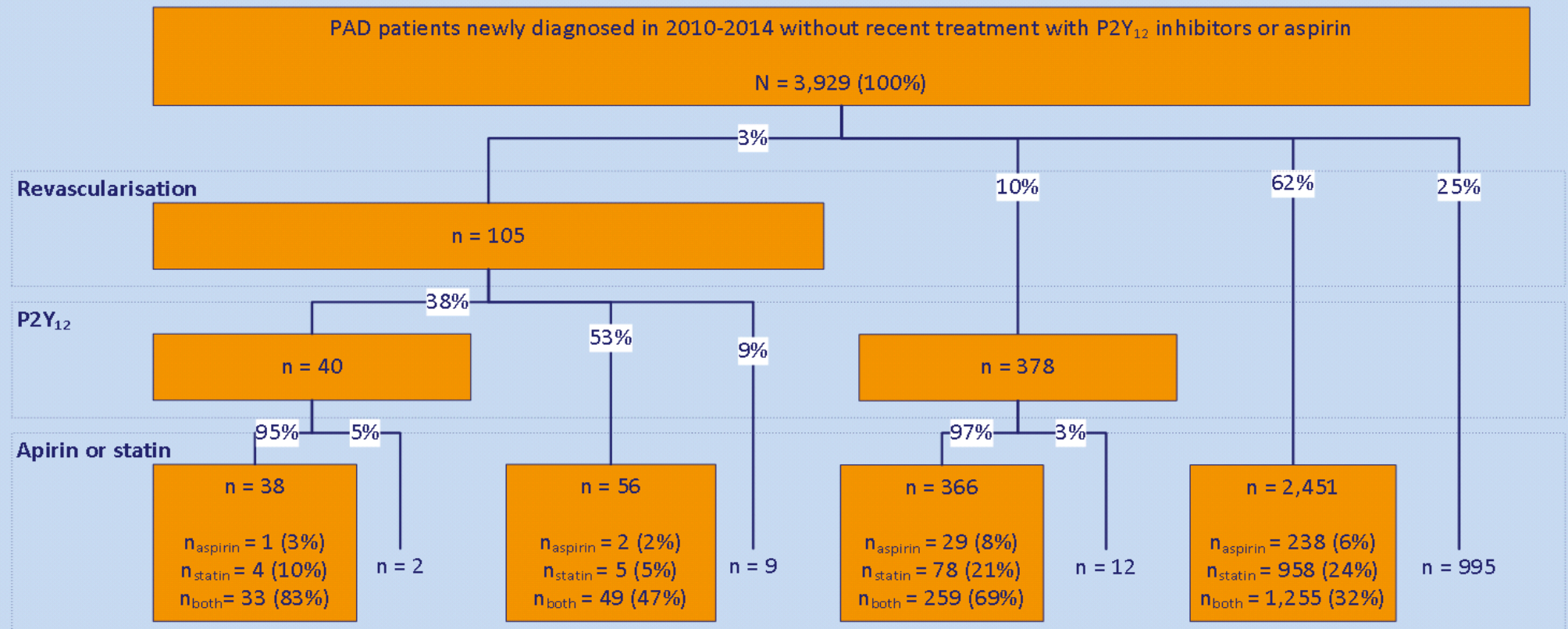
- Defined period from which the (outcome) measurements will be used, often related to a certain event.
 - Too short = not enough data
 - Too long = data probably not related with change
- Disease and treatment knowledge necessary!!

Potential information to add

- Outcome measures
- Diagnosis
- Compliance measures
- Prescriber information
- Market share
- Demographic information
- PROs
-

Pharmacology for peripheral arterial disease (PAD) in the Netherlands

Revascularisation and secondary prevention among PAD patients



PHARMO / UMC Utrecht: ART Brand, E Houben, ID Bezemer, FLJ Visser, ML Bots, RMC Herings, GJ de Borst

WWW.PHARMO.COM

Contact details

T +31 (0)30 744 08 00

E pharmo@pharmo.com

