What can researchers contribute to measuring impact?

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Special Interest Group

Measuring impact of pharmacovigilance activities

Objective SIG

Develop methods for modeling health outcomes of pharmacovigilance activities, based on epidemiological parameters and identification of relevant data sources

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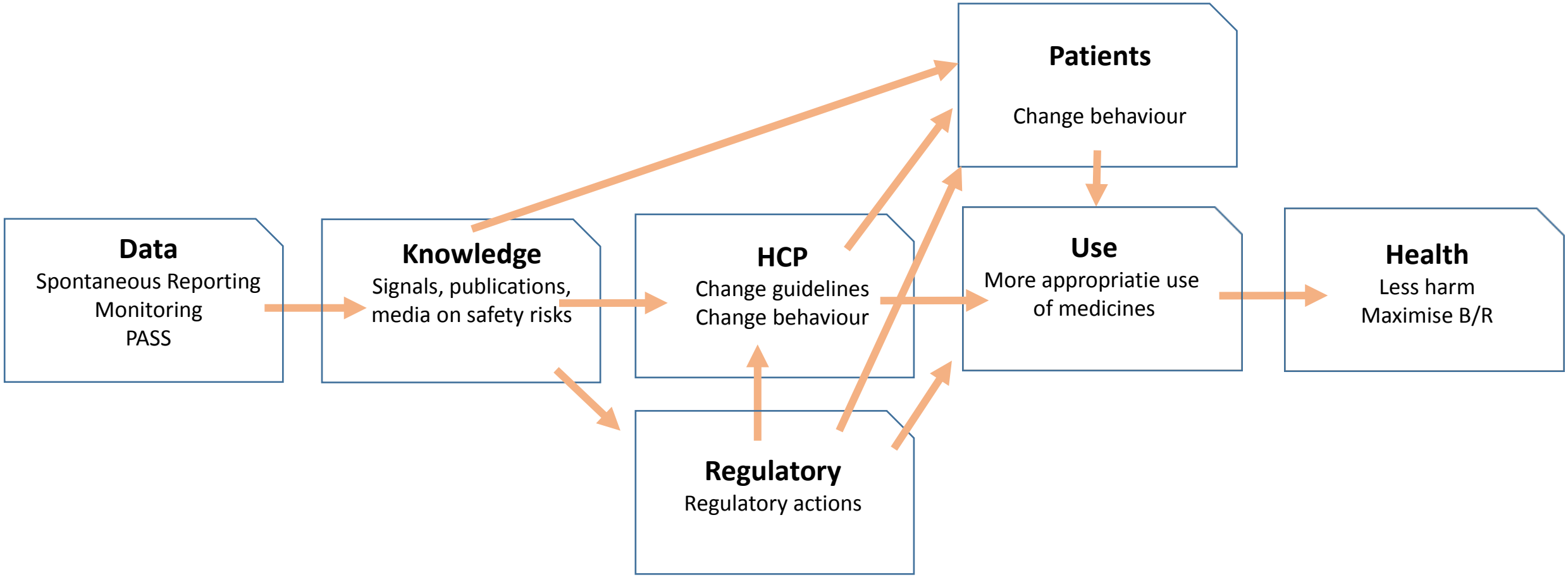
Aim of pharmacovigilance activities is to reduce harm by more appropriate use of medicines

What do we want to measure?
Which pharmacovigilance activities ?
Which outcome ?
What activity causes which effect?

Scheme of the pathways of PV



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Considerations

- Measure the outcomes of each link in the PV pathway separately is difficult because:
  PV activities are to some extend intertwined
  PV activities can be complementary
- It is not feasible to measure all useful aspects of PV
- Outcomes or also influenced by other factors

If we want to measure impact of PV activities focus on identified safety risk:

- with high public health burden
- for which there is potential in reducing harm

Focus on these actions/recommendations?

- Suspension /withdrawal of a medicine
- Restriction of the indication
- Patient screening for groups at risk
- Contra-indications
- Prevention of drug Interactions
- Pregnancy prevention plans
- RMM

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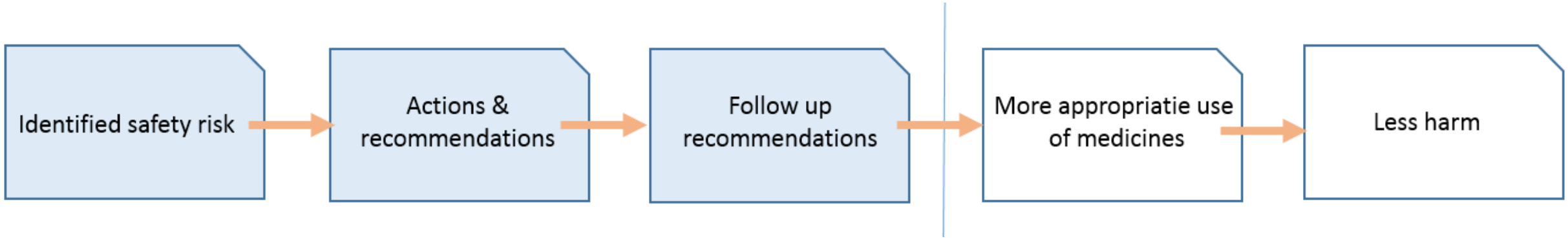


Although it is preferable to measure the reduction of harm, it will not always be possible.

Measuring the effect on more appropriate use of medicines is a good indicator. Because identified risks outcomes are already based on the PV scientific knowledge, harm reduction is to be expected, and might be predicted.

Ergot-derived dopamine receptor agonist

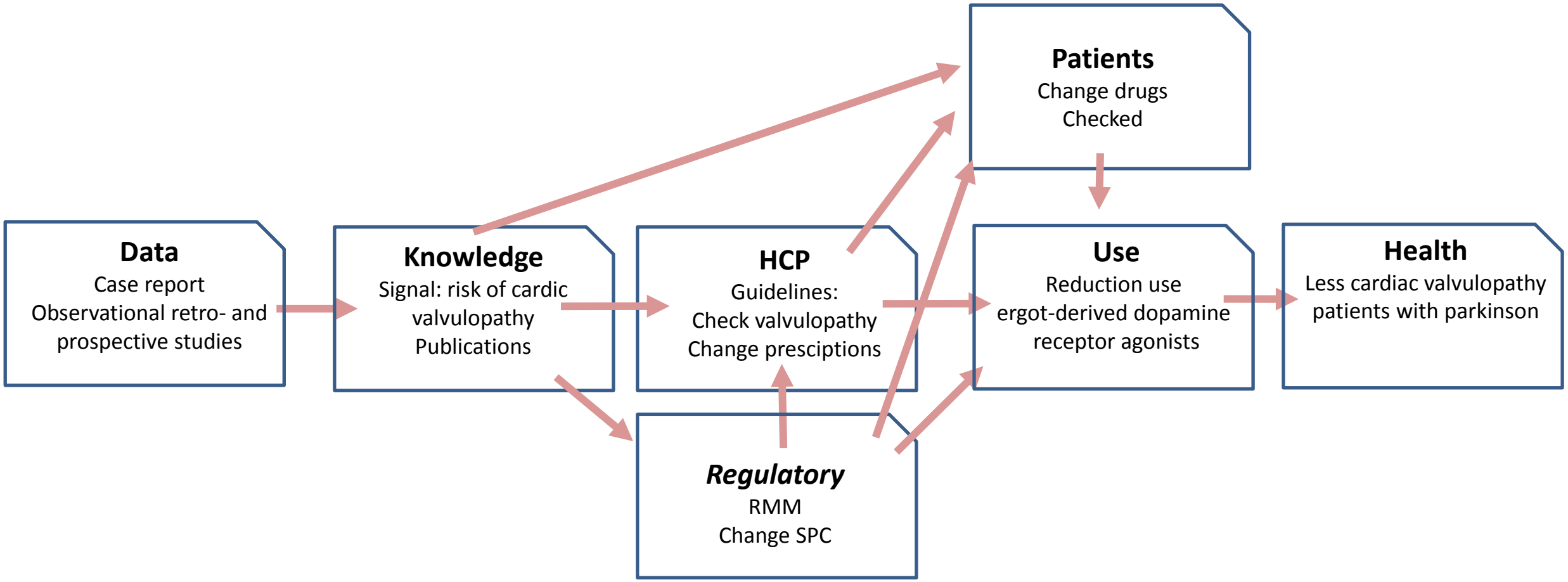
Pergolide, cabergoline, bromocriptine
Signal: risk of cardic valvulopathy

Actions (2008):

- Reduction maximum daily dosage
  Check valvulopathy before start, including echocardiography
- Repeat this after 3-6 months, every 6-12 months
- Stop medication if valvulopathy
- Preference non ergot dopamine agonist
- Second-line therapy

FDA: withdrawal !

Scheme of the pathways of PV



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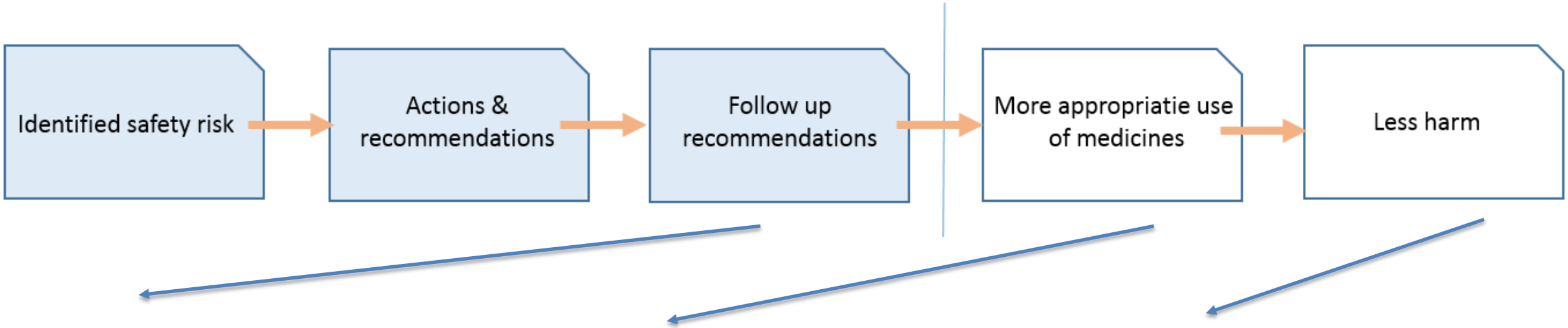

Check valvulopathy?
Change prescriptions?

More ECG users (1,2)
Only small % serial ECG (2)

Change in use?

No change proportion users after action within 17 months (1) but substantial decrease after 3 yr (3)

Substantial decrease in Netherlands

Change in valvulopathy parkinson patients?

No severe cardiac valvulopathy change (2) (none in study)

1. *Ooba et al. The impact in Japan of Regulatory Action on Prescribing of Dopamine Receptor Agonists. Drug Saf 2011: 34 (4):329=338*
2. *Italiano et al. Effectiveness of risk minimization measures for cabergoline induced cardiac valve fibrosis in clinical practice in Italy. J Neural Transm @015: 22:799-808*
3. *Prescribing Pattern of Anti-Parkinsons Drugs in Japan: A Trend Analysis 2005 to 2010. Plos One. 2014: 9 (6):e99021*

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The Drug Information System of National Health Care Institute

Number of patients using dopamine agonists in the Netherlands													
Drug	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Bromocriptine	261	221	201	176	194	154	220	131	97	78	63	55	48
Pergolide	5398	4850	3366	2342	1654	1174	836	594	453	338	253	214	173
Ropinirol	2427	3698	5254	8743	11915	13595	14035	13307	13198	12904	12470	12656	12989
Pramipexol	2800	3630	4958	14003	22722	29929	34437	33488	34547	34584	34211	34501	34800
Apomorfine	68	72	118	124	156	182	101	82	80	83	85	113	116
Rotigotine						2	260	939	1416	1701	1829	2083	2526

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Data for measuring impact ?

Prefer: data on change in valvulopathy parkinson patients

Drug utilizations ergot-derived dopamine + AR to valvulopathy

Predict?

SIG measuring impact pharmacovigilance activities

Next steps:

Modeling how outcome of pharmacovigilance activities can predict the harm that can be avoided

Recommendations can give input for the revision of ENCePP Guide on Methodological Standards in Pharmacoepidemiology