Industry Perspective

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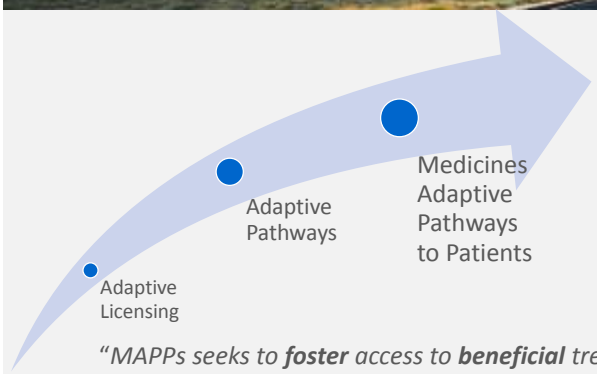
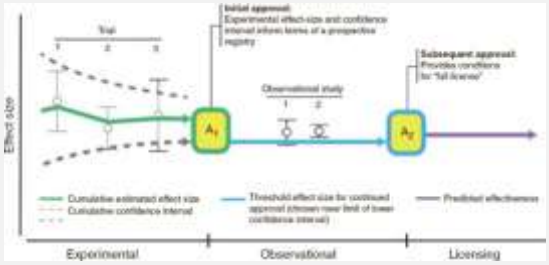
How it all started?
Realization of competing objectives

- Allow timely access for patients to address urgent medical need ⟷ Allow only well-studied drugs on the market
- Enable precision medicine, 'difficult' indications ⟷ Rely on robust study methodology and end points
- Ensure sustainability of the innovation engine ⟷ Ensure sustainability of health care systems

Source: Eichler H. EMA - Medicines Adaptive Pathways to Patients (MAPPs).

EMA Evolution of thinking
Licensing is necessary but not sufficient





"*MAPPs seeks to **foster** access to **beneficial** treatments for the **right patient groups** at the **earliest appropriate time** in the product life-span in a **sustainable fashion***".

from the mission statement for ADAPTSMART
Accelerated Development of Appropriate Patient Therapies
a Sustainable, Multi-stakeholder Approach from Research to Treatment-outcomes

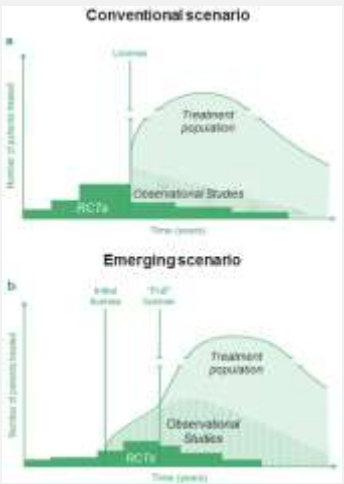
Source: Eichler H. EMA - Medicines Adaptive Pathways to Patients (MAPPs).

MAPPs what does it mean?

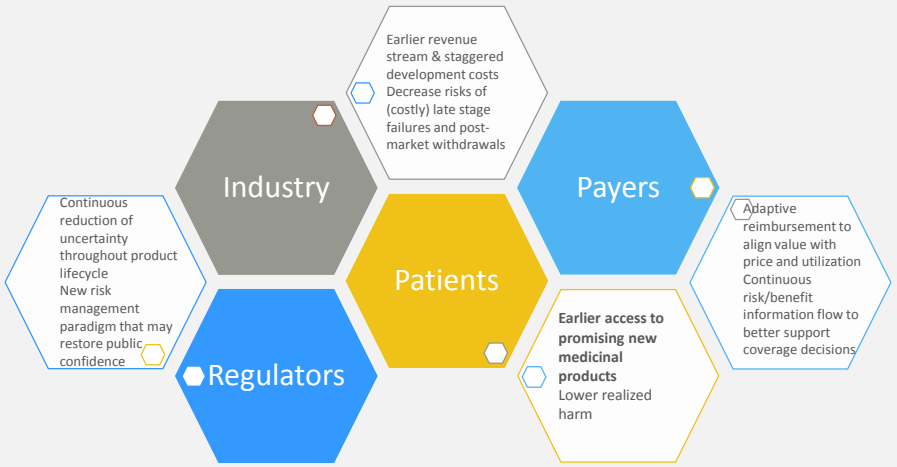
"*Flexible development and access pathways within the **current regulatory framework** that balance **early patient access**, **public health** and **societal benefits***".

How is MAPPs different from Current Pathways?

- An early authorization of a product in a well-defined and targeted patient population with a clear safety and efficacy profile
- The target population is adjusted as additional evidence becomes available
- MAPPs relate to the entire life cycle from development, through licensing to patient access



Source: EFPIA - Medicines Adaptive Pathways to Patients (MAPPs): Saving Time, Saving Lives



Source: Eichler H. EMA - Medicines Adaptive Pathways to Patients (MAPPs).

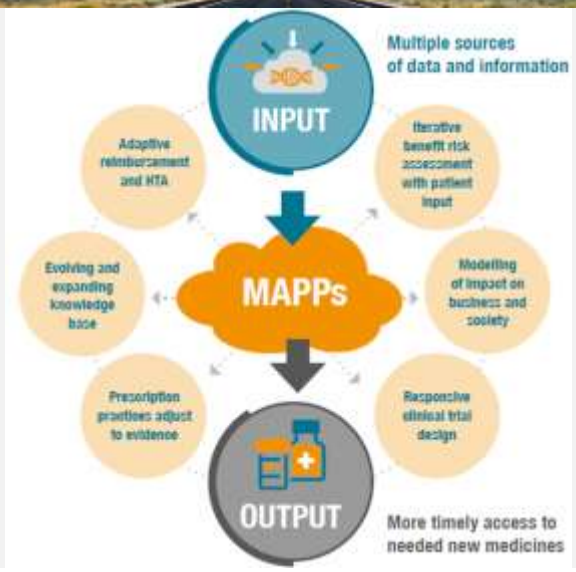
- from a “silver bullet” → to a life-span management
- from RCTs only → to a toolkit for evidence generation
- from big populations → to small populations
- from focus on licensing → to focus on patient access
- from open utilization → to managed utilization

Source: Eichler H. EMA. Medicines Adaptive Pathways to Patients (MAPPs).

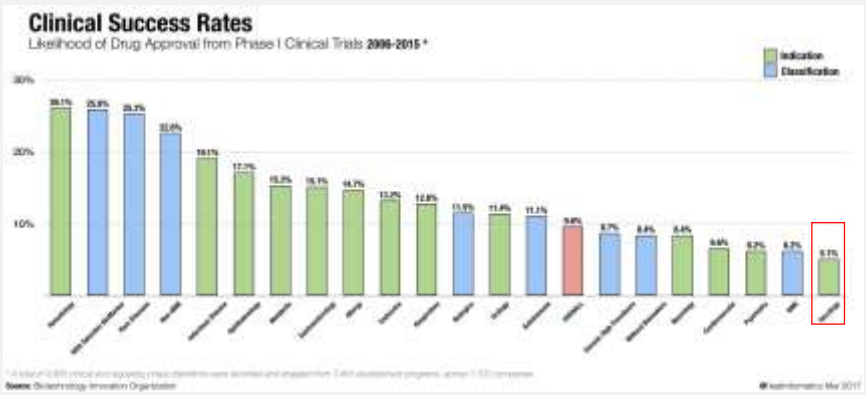

From Industry, Regulators, Payers…


Evolution of the MAPPs "Ecosystem"
Industry delivers a product
A regulatory body assesses the product
If approved by the regulatory body, payers enter the picture
Once the product makes it to market, the final step can be made
Access for patients

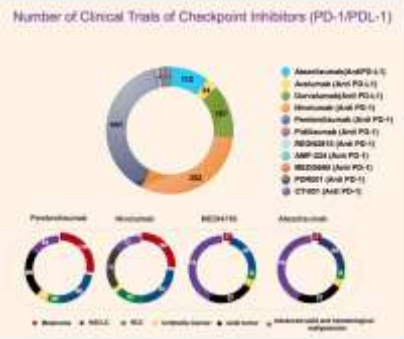

…To Industry, Patients, Payers, Providers, Regulators


Multiple sources of data and information
INPUT
Adaptive reimbursement and HTA
Iterative benefit risk assessment with patient input
Evolving and expanding knowledge base
MAPPs
Modelling of impact on business and society
Prescription practices adjust to evidence
Responsive clinical trial design
OUTPUT
More timely access to needed new medicines

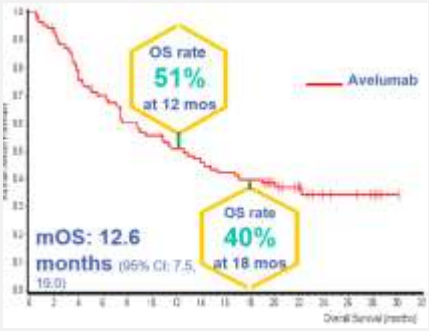
The Drug Innovation Paradox
Likelihood of drug approval and R&D reward



Yet, with major contributions to health
The Checkpoint Immunotherapy Revolution



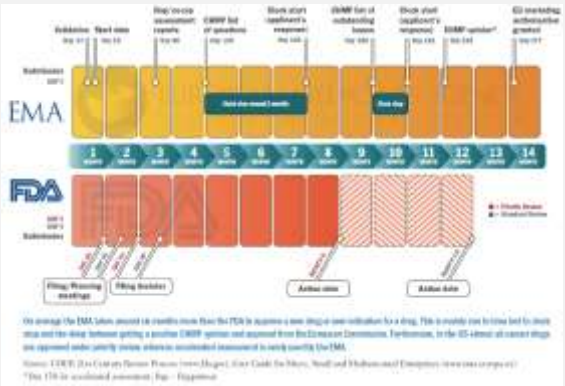
Check point antibody inhibitors have over 1,000 trials underway. These checkpoint blockers are rapidly becoming a highly promising cancer therapy that yields remarkable antitumor responses with limited side effects.



Survival in 2L-CT MCC patients is poor (mOS: ≤5.7m and 12m OS: 0%) with low and short lived response rates (ORR: 9-23% and DDR ≥6m: 0%). In experienced patients, more than half who received Avelumab are still alive at 1-yr with ORR of 33% and DDR ≥6m: 31%

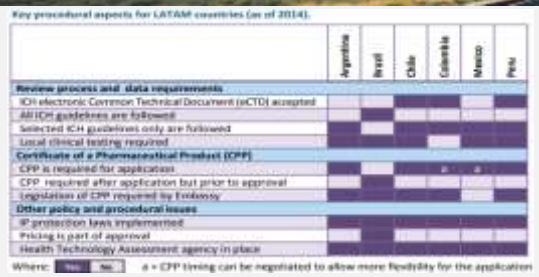
Source: Alsaab H. et al: PD-1 and PD-L1 Checkpoint Signaling Inhibition for Cancer Immunotherapy: Mechanism, Combinations, and Clinical Outcome. (2017)

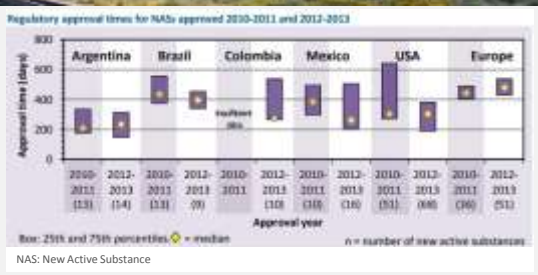
But is about halfway through…
US, EU and LATAM Regulator timelines



Source: Beishon M. Approval rating: how do the EMA and FDA compare? (2014) & Liberty L. et al. The changing regulatory environment in Latin America (2015)

And there are some caveats in LATAM
CPP, µ approval time, ODD, Parallel submission



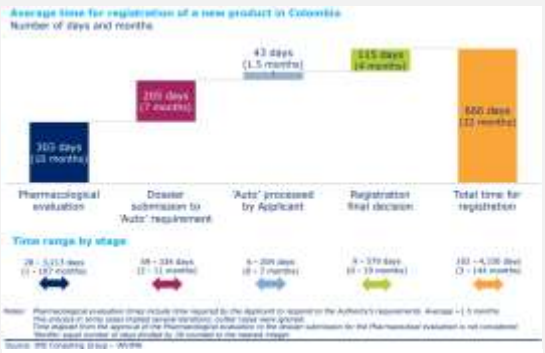


NAS: New Active Substance

Source: Liberty L. et al. The changing regulatory environment in Latin America (2015)

Temporary options
"the lesser of two evils"

Access to cancer medicines
The case of Colombia – Market Authorization



Obtaining registration for a new product takes on average 22 months

Cancer drugs take the longest time (26 months) because of the pharmacological evaluation

Source: IMS Consulting Group - Colombia's access to medicines within the OECD countries' context (2016)

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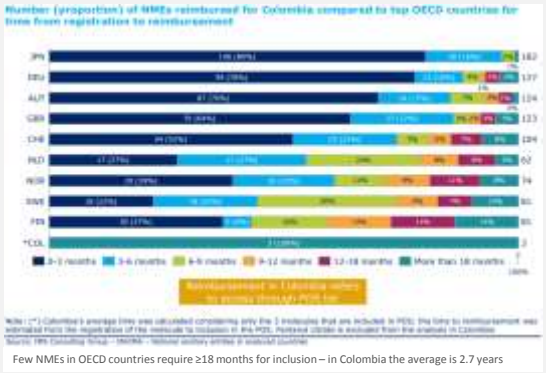
EMA - Medicines Adaptive Pathways to Patients (MAPPs)

Access to cancer medicines
The case of Colombia – Patient Access

Only 6% of the launched products obtained POS (Mandatory Health Plan) listing



Few NMEs in OECD countries require ≥18 months for inclusion – in Colombia the average is 2.7 years

Source: IMS Consulting Group - Colombia's access to medicines within the OECD countries' context (2016)

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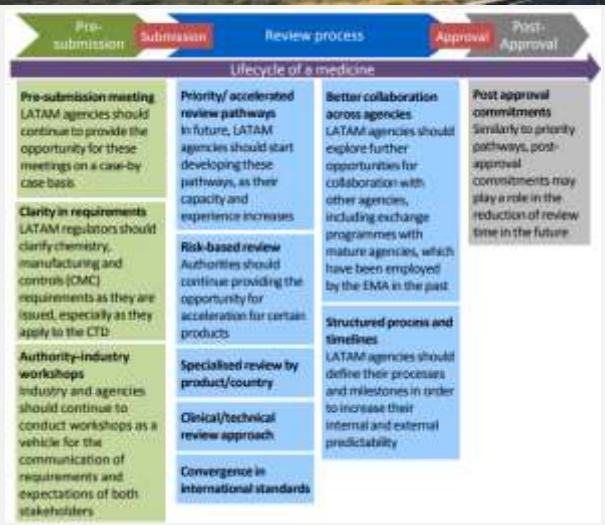
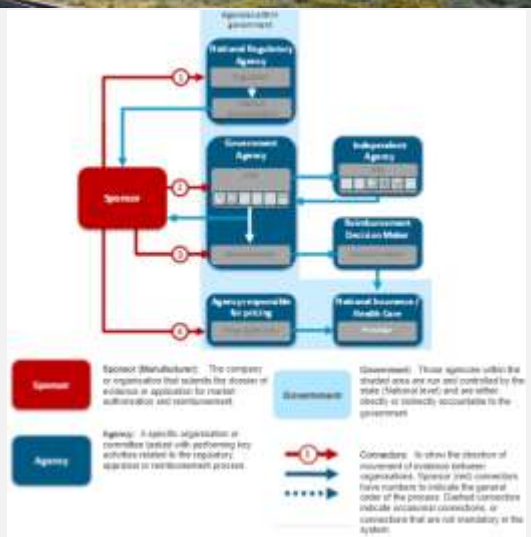
Opportunities to expedite the regulatory and reimbursement process during the lifecycle of a medicine in LATAM

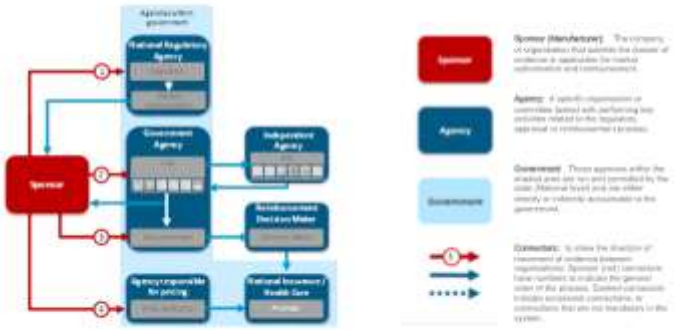




Source: Liberty L. et al. The changing regulatory environment in Latin America (2015)

Process map model – Step 1

Step 1 - This model indicates the construction of the first step of the process maps. The Sponsor is shown in red and the connections with the agencies are numbered to indicate the typical order in which these contacts occur. The Agencies are shown in blue with internal connections in white and external connections in blue. The light blue shading indicated those agencies that are within the national level government.



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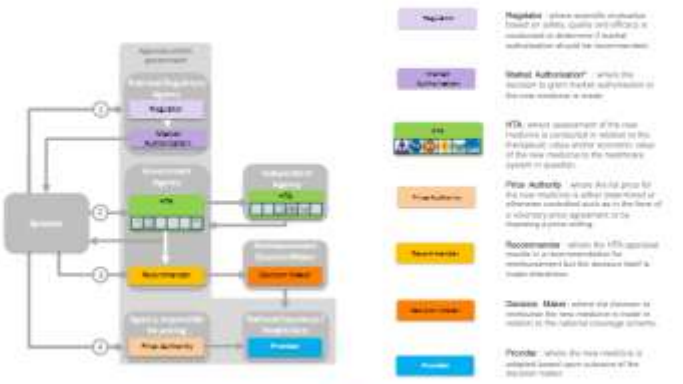
Process map model – Step 2

Step 2 - Seven functions that represented significant measurable key components of the system were defined and then mapped onto the agencies that conducted those functions in order to show where in the system such functions occurred and how they related to one another.



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Process map model – Step 3

Step 3 - For the HTA function, a "task bar" of key activities was developed in order to characterise a selection of defining elements of the HTA process. Each activity was given an identifying icon that was shown in the HTA task bar if it was a normal part of that agency's actions.