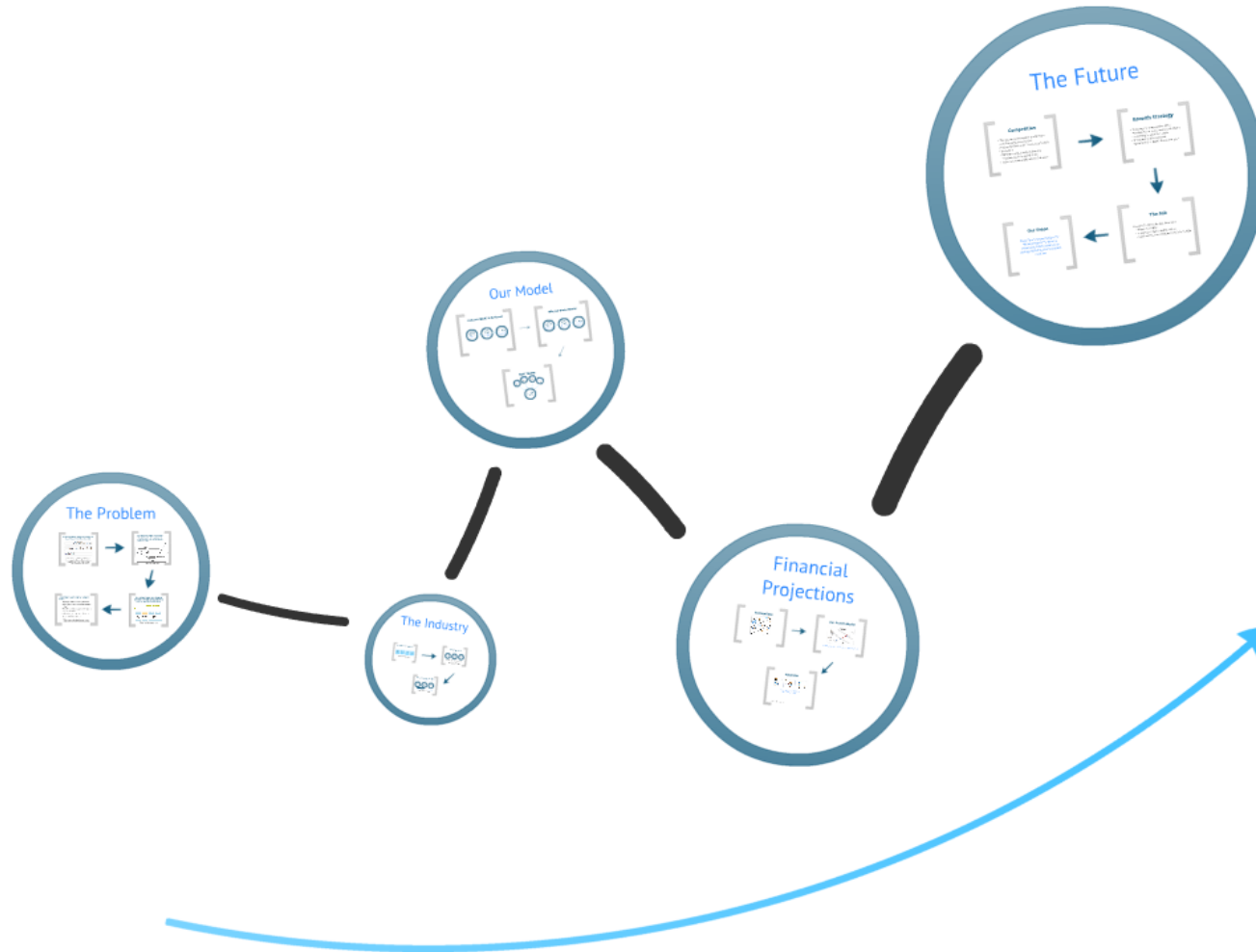


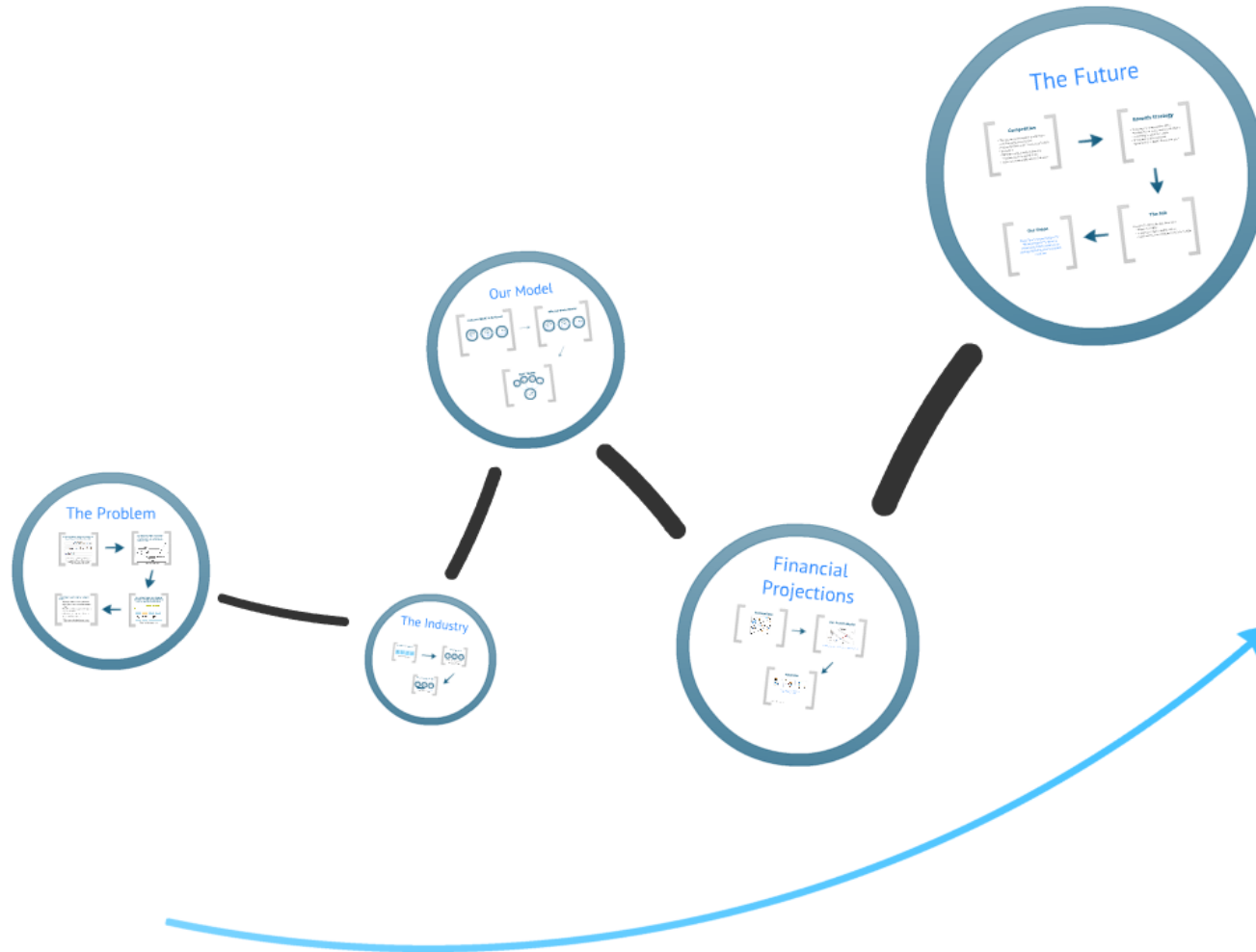
U.S. Department of Energy & Recovery Act Funding: Bridging the "Valley of Death"

TheCaseSolutions.com



U.S. Department of Energy & Recovery Act Funding: Bridging the "Valley of Death"

TheCaseSolutions.com



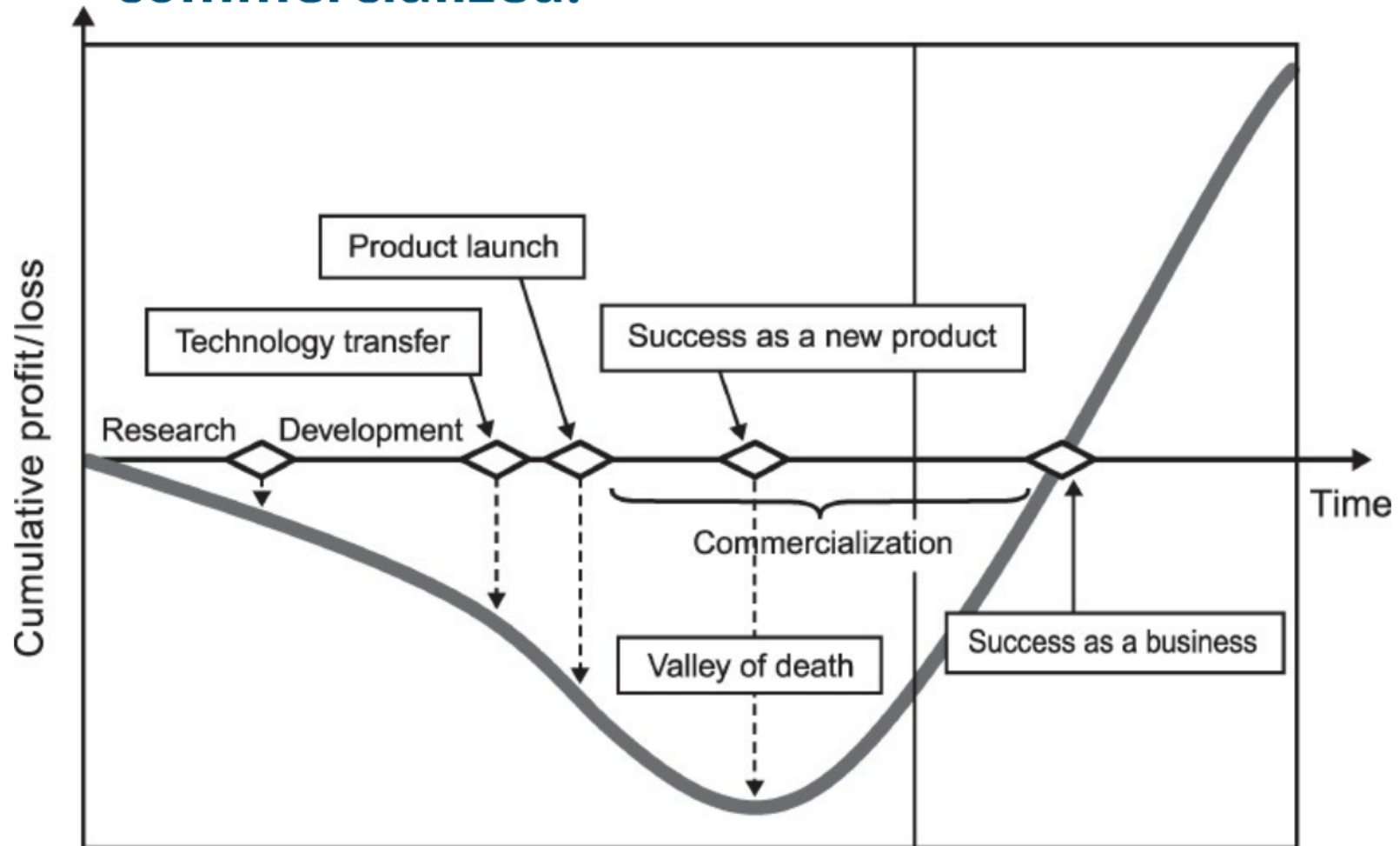
In the past 4 years, Pharma R&D budget has slowed down from 10% to 2% yearly

Global R&D Spend Analysis									
	2002	2004	2006	2008	2009	2010	2012	2014	2016
Pharma R&D Spend (\$bn)	68.4	86.2	104.9	125.6	124.5	127.4	132.3	139.1	145.5
<i>Growth per year</i>		11%	11%	8%	-1%	2%	2%	3%	2%
WW Prescription (Rx) Sales (\$bn)	350	448	530	628	644	662	699	746	785
<i>Growth per year</i>		11%	9%	8%	3%	3%	2%	3%	2%
R&D as % of WW Rx sales	19.6%	19.3%	19.8%	20.0%	19.3%	19.2%	18.9%	18.6%	18.5%
Cumulative R&D spend (02-09)	\$798bn								
Annual R&D spend growth (02-08)	10.6%								
Annual R&D spend growth (09-16)	2.3%								

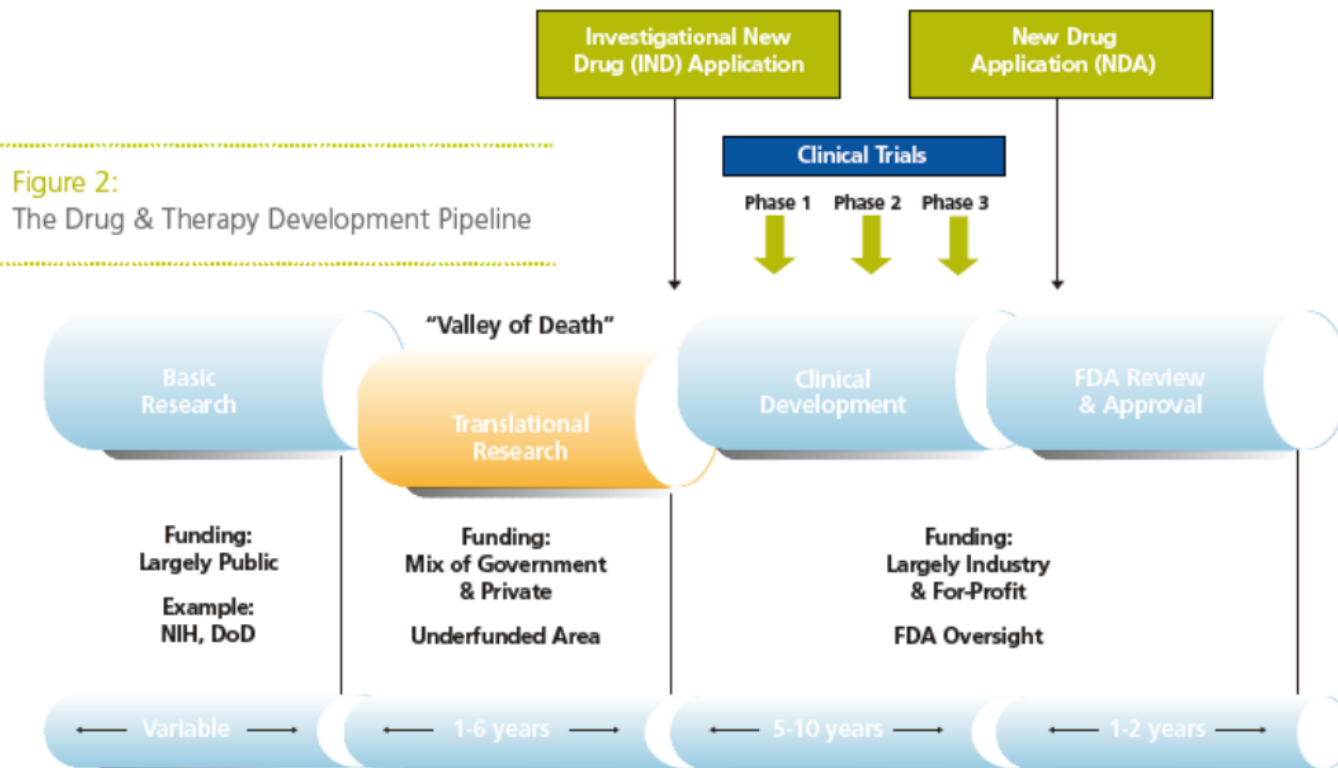
We estimate about 400,000 drugs worldwide that would have been acquired a few years ago are now left behind because of budget cuts.

TheCaseSolutions.com

This has led to what is known as the "Valley of Death"- the gap in which scientific discoveries do not become commercialized.



The "Valley of Death" occurs because potentially profitable compounds do not enter the preclinical testing phase.



Source: Parkinson's Action Network

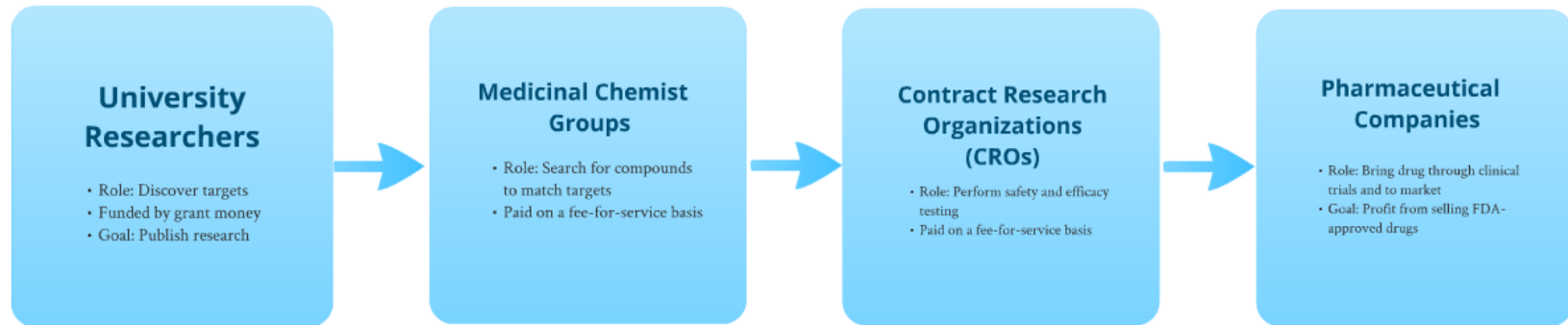
TheCaseSolutions.com

Others have tried to bridge the "Valley of Death"

- The Bayh-Dole Act of 1980 required universities to open technology transfer offices.
- The NIH created a translational research program-NCATS.
- Pharmaceutical companies choose to partner with universities.

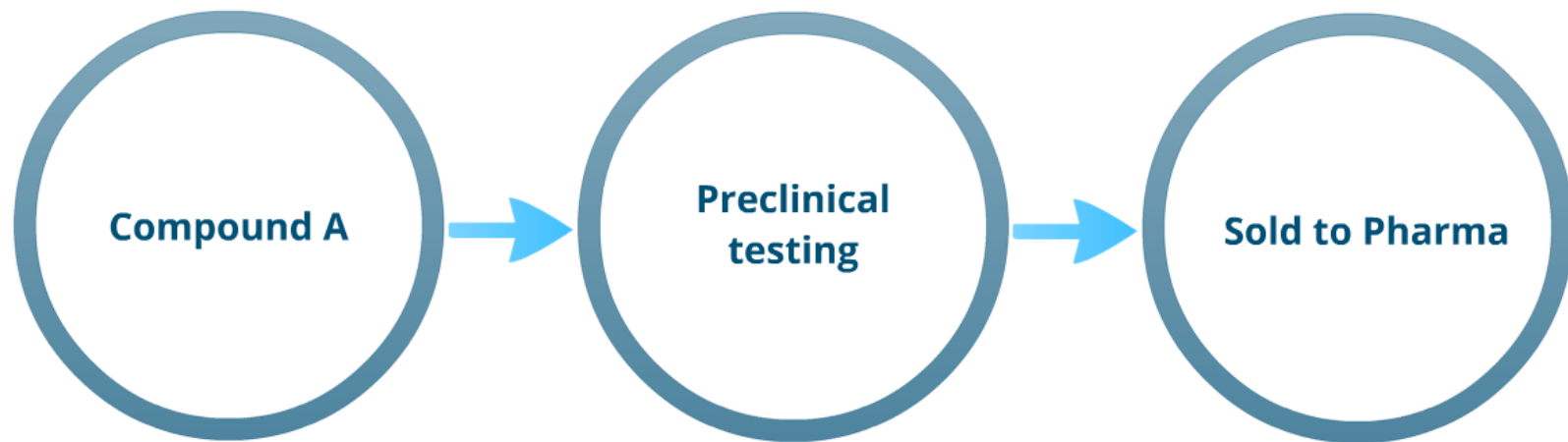
TheCaseSolutions.com

Key Players in the Current Model



TheCaseSolutions.com

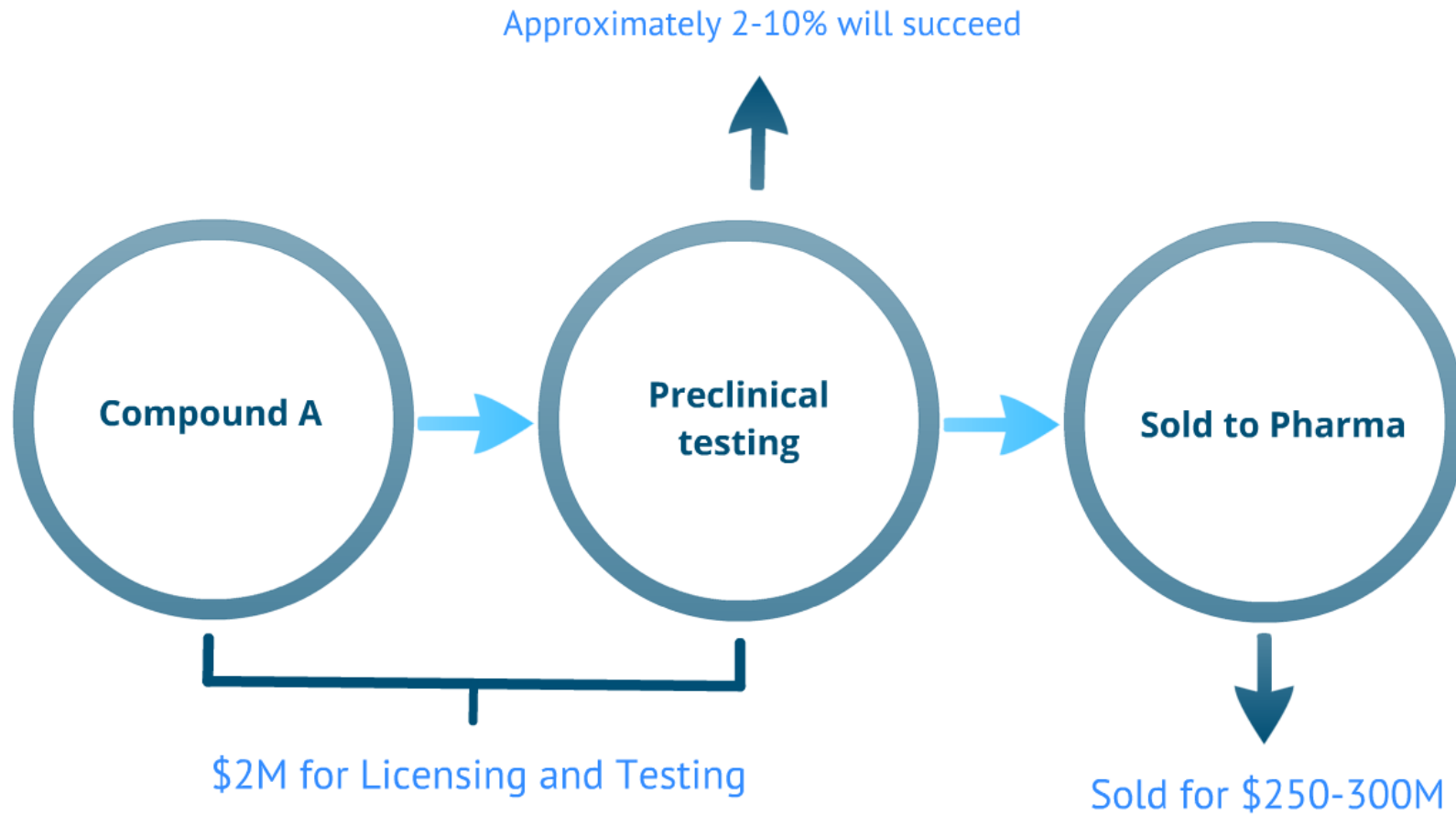
The Current Process



This might occur at universities or in
small biotechs.

TheCaseSolutions.com

Current Costs and Probabilities



TheCaseSolutions.com