



Accelerating Global Supply of Vaccines – Lessons Learnt

Dr Mark A Pellett

Director, CMC Regulatory Affairs

AstraZeneca, UK

24th May 2022

Introduction

- WHO estimate 15 million people have died from COVID-19 (May 2022)
- Vaccines provided hope and have successfully limited further deaths from COVID-19
 - 2020: development and initial registration activities for the vaccine
 - 2021: additional initial registration activities and global distribution and administration
 - 2022: continued distribution, life cycle management and post-approval changes



- 2H2022 and beyond
 - What have we learned?
 - Where can we improve?
 - How can we be more efficient?
 - How can we accelerate patient access?



Background / Content



Regulatory landscape is not harmonised

Agency assessments (different opinions over what is considered important)

Approval processes

Release requirements

HA batch testing and approval timelines

All these limit equitable and timely access



Differences...“Areas of focus”

Process validation

Specifications

Stability

Post-approval changes

Release testing

Packaging and labelling

Additional certifications for GMO, et al.

COVID-19 variants



Potential Solutions

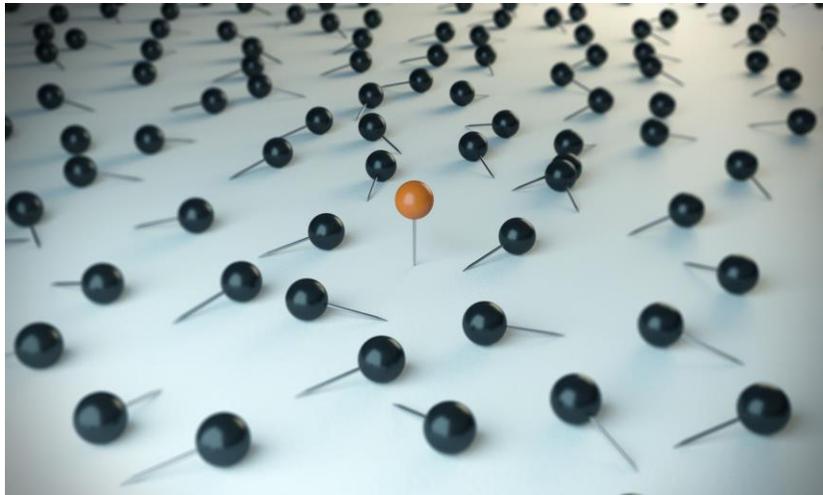
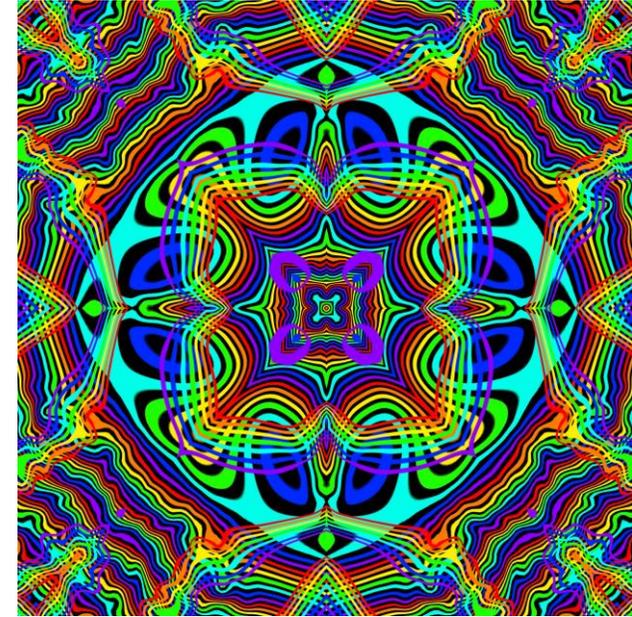
Company focus

Agency focus



Focus Areas

- Process Validation
 - ICH Q9 provides for risk-based approaches with Agency's developing their own interpretations



- Specifications and Acceptance Criteria for Comparability Protocols
 - Multiple DS and DP manufacturing sites
 - Concurrent expansion of sites
 - Multiple post-approval changes
 - One global specification/protocol required



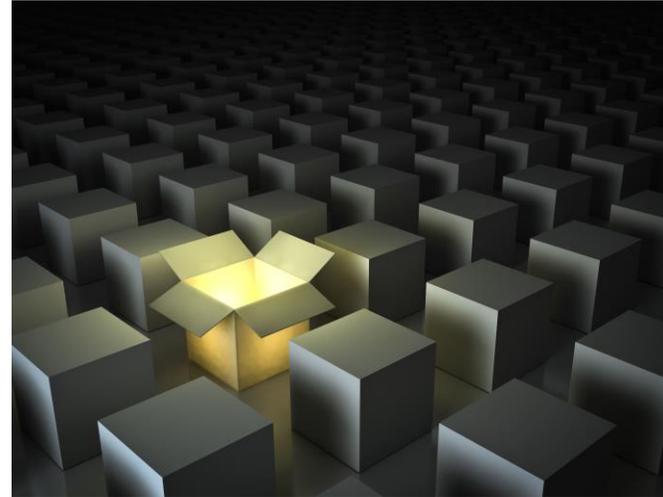
Focus Areas...cont'd

- Stability
 - Real time data normally used to help support the shelf life
 - Waiting for real time data is not compatible with the global need to register and distribute the vaccines
- Release testing
 - Sometimes three sets of release tests performed (Manufacturer; National Reference Laboratory in Country of Origin; testing on importation to destination country)
- Post-approval changes
 - 10 changes x 100 countries = 1000 submissions



Focus Areas...cont'd

- Packaging and Labelling
 - Manufactured and packed at risk
 - Limited changes to labelling
 - Shared packs

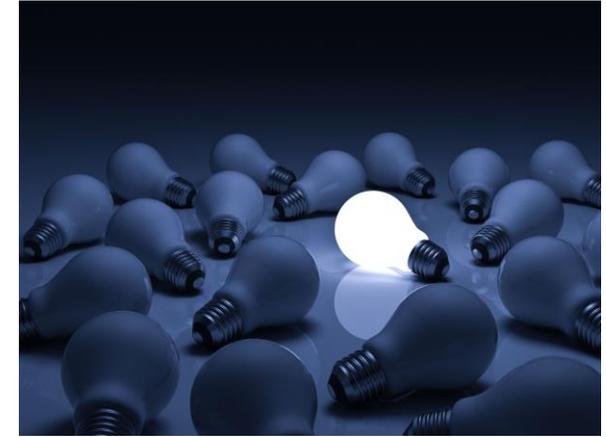


- Biosafety Levels
 - Exporting / Importing implications
- Viral Variants
 - Full development vs abridged development



Potential Solutions

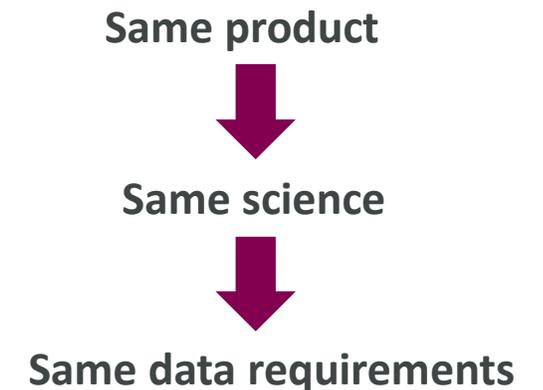
- Promote harmonised risk-based approaches
- Company submission solutions:
 - Platform technology
 - Prior knowledge (including small scale lots, engineering / development batches, septic and cleaning processes)
 - Use of continuous process verification
 - Decouple drug substance sites from drug product sites
 - Analytical modelling for stability assessments



- Agency review solutions:
 - Agency review limited to protocols
 - Rely on PQS
 - Post-approval commitments to provide data
 - Reliance / inter-Agency collaboration
 - Limit in-country testing

Reliance / Inter-Agency Collaboration

- Drive for acceptance of one global dossier, and full transparency with SRA questions and answers
- WHO managed reliance with more than 87 countries; supply managed under COVAX
- Limited success with National Competent Authorities on exercising reliance
 - Some Agencies asked over 100 questions on a supply chain already approved by a SRA
 - The questions did not result in any changes to the manufacturing processes, controls, analytical methods, etc
- Donations
 - Different supply chains requiring additional registration at very short notice



Conclusions

- The biggest learnings from the COVID-19 pandemic are:
 - The need for greater harmonisation
 - The need for greater inter-Agency collaboration and mutually recognising SRA approvals.
- Put the learnings into practice now so that they can be utilised not only for pandemics, but become established way of working, and any teething issues can be resolved in non-emergency situations.



References / Acknowledgements

- McGoldrick, M, et al, Vaccine 40 (2022), 1215-1222
- McGoldrick, M, et al, Vaccine 40 (2022), 1223-1230
- Diane Wilkson, AstraZeneca
- The COVID-19 AstraZeneca Regulatory Team



Questions

