



Software for
Business Intelligence

BizInt Smart Charts

Patents & IP Sequences | Clinical Trials | Drug Pipelines

I. How we used VP-SCE in the COVID-19 Vaccine Case Study.

II. Changes coming in Version 12.

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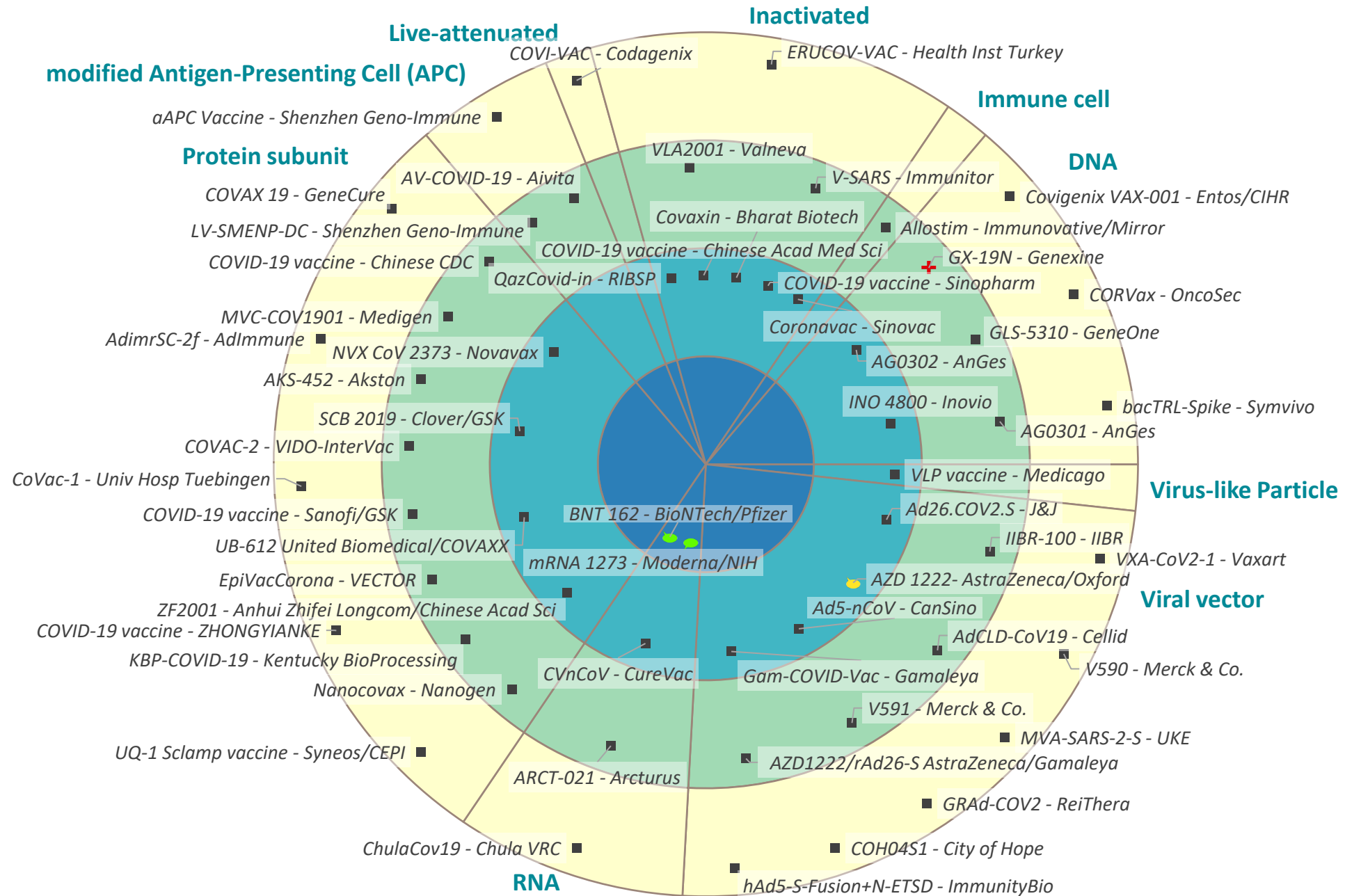
Commonly Used Features - COVID-19 Case Study Examples

- Extract Highest Phase for Indication
 - List Cleanup – Cleanup Indications
 - Filter Drug Development Phase
- **Thesauri –**
 - **Create a category field** (vaccine type)
 - **Filter out unmatched terms**
 - Thesaurus editor for easy updates
- **Create a sub-Dataset**
- **Visualizations (Bullseye, Milestone Timeline)**
- Further Processing –
 - Divide multiple item fields
 - Cleanup dates
- Concatenate & Merge Fields – combine related fields from different sources
- My Keywords – term extraction

New in Visualizations - VP-SCE 12

- **Milestone Timeline**
 - Brand new
 - Combines features of Event and Duration Timelines
- **Bullseye**
 - Updated design
- **Piano**
 - Split long columns into two
 - Inverted bottom to top
 - Color palette choices
- **More new visualizations**
 - Multi donut
 - Scatter Plot
 - Butterfly Chart

The Goal



The Challenge

ClinicalTrials.gov doesn't:

- categorize vaccines by type or technology.
- reliably identify vaccines as vaccines.



	Trial Title	NCT Number	Drugs	Interventions			
				Name	Type	Description	Group
2801	A Phase I/II Randomized, Double-blind, Placebo-controlled Multicentre Study in Participants Aged 18 Years or Older to Determine the Safety and Immunogenicity of AZD1222, a Non-replicating ChAdOx1 Vector Vaccine, for the Prevention of COVID-19	NCT04568031	AZD1222 0.9% (w/v) saline	AZD1222	Drug	For subjects in part 1 will have that route of Administration as Intramuscular, 5×10^{10} vp (nominal, $\pm 1.5 \times 10^{10}$ vp) on V2	Part I
				0.9% (w/v) saline	Drug	For subjects in placebo will have that route of Administration as Intramuscular 0.9% (w/v) saline on V2 and V6.	Part II
2802	A Phase III Randomized, Double-blind, Placebo-controlled Multicenter Study in Adults to Determine the Safety, Efficacy, and Immunogenicity of AZD1222, a Non-replicating ChAdOx1 Vector Vaccine, for the Prevention of COVID-19	NCT04516746	AZD1222 Placebo	AZD1222	Biological	AZD12222 is a recombinant replication-defective chimpanzee adenovirus expressing the SARS-CoV-2-5 surface glycoprotein.	AZD1222
				Placebo	Biological	Commercially available 0.9% (n/v) saline for injection.	Placebo

Ok, the Challenges.

ClinicalTrials.gov *also* doesn't:

- Use a standardized name for each vaccine
- Use a standardized company name.
- Identify the owner company as a trial sponsor



Trial Title	NCT Number	Drugs	Interventions			
			Name	Type	Description	Group
A Phase III, Randomized, Double-Blind, Placebo-controlled Trial to Evaluate Immunogenicity and Safety of the Gam-COVID-Vac Combined Vector Vaccine in Prophylactic Treatment for SARS-βCoV-2 Infection in the United Arab Emirates	NCT04656613	Gam-COVID-Vac	Gam-COVID-Vac	Biological	the Gam-COVID-Vac is combined 2 -component vector vaccine against the SARS-βCoV-2-induced coronavirus infection	Vaccine
			placebo	Other	Placebo Comparator	Placebo
An Open Study on the Safety, Tolerability, and Immunogenicity of "Sputnik Light" t Vaccine for Prevention of Coronavirus Infection Caused by the SARS-CoV-2 Virus	NCT04713488	Sputnik Light	Sputnik Light	Biological	solution for intramuscular injection Composition for 1 dose (0.5 ml)	Sputnik Light Vaccine

VP-SCE can help with these too.
But- one problem at a time

The Solution

We need to create a category field.



Trial Title	NCT Number	Drugs	Interventions				Vaccine type (Cleaned)
			Name	Type	Description	Group	
A Phase III Randomized, Double-blind, Placebo-controlled Multicenter Study in Adults to Determine the Safety, Efficacy, and Immunogenicity of AZD1222, a Non-replicating ChAdOx1 Vector Vaccine, for the Prevention of COVID-19	NCT04516746	AZD1222 Placebo	AZD1222	Biological	AZD12222 is a recombinant replication-defective chimpanzee adenovirus expressing the SARS-CoV-2-5 surface glycoprotein.	AZD1222	Viral vector
			Placebo	Biological	Commercially available 0.9% (n/v) saline for injection.	Placebo	Viral vector
A Phase III Open-label Study in Adults to Determine the Safety and Immunogenicity of AZD1222, a Non-replicating ChAdOx1 Vector Vaccine, for the Prevention of COVID-19	NCT04540393	AZD1222	AZD1222	Biological	Participants will receive 2 doses of AZD1222; the first dose will be administered on Day 1 and the second dose on Day 29. Unit dose strength(s) > 0.7 × 10 ¹¹ vp/mL. Dosage level(s) 5 × 10 ¹⁰ vp (nominal). Route of administration Intramuscular injection	Arm A	Viral vector
A Phase 2/3 Study to Determine the Efficacy, Safety and Immunogenicity of the Candidate Coronavirus Disease (COVID-19) Vaccine ChAdOx1 nCoV-19	NCT04400838	ChAdOx1 nCoV-19 (Abs 260) MenACWY vaccine ChAdOx1 nCoV-19 (Abs 260) + 2.2x10 ¹⁰ vp (qPCR) boost Two dose MenACWY vaccine ChAdOx1 nCoV-19 (qPCR)	ChAdOx1 nCoV-19 (Abs 260)	Biological	A single dose of 5x10 ¹⁰ vp of ChAdOx1 nCoV-19 measured by spectrophotometry at Abs260	Group 1 a1; Group 2 a1; Group 4 a1; Group 5 a1; Group 5 c1	
			MenACWY vaccine	Biological	Standard single dose of	Single dose	

Thesauri – Create a category field

The screenshot shows the Thesaurus Editor interface. The 'Field' pane on the left contains a list of vaccine names, with 'Vaccine - sponsor' selected. The 'Thesaurus' pane in the center shows a hierarchical tree of categories, with 'Non-replicating viral vector' selected. The 'Results' pane on the right shows a list of categories that match the selected field, with 'Apply Thesaurus' button highlighted by a blue arrow.

Field

Vaccine - sponsor

- aAPC Vaccine - Shenzhen Geno-Immune
- Ad26.COVS.S - J&J
- Ad5-nCoV - CanSino
- AdCLD-CoV19 - Cellid
- AdimrSC-2f - AdImmune
- AG0301 - AnGes
- AG0302 - AnGes
- AKS-452 - Akston
- Allostim - Immunovative/Mirror
- ARCT-021 - Arcturus
- AV-COVID-19 - Avivata
- AZD 1222- AstraZeneca/Oxford
- AZD1222/rAd26-S AstraZeneca/Gamaleya
- bacTRL-Spike - Symvivo
- BNT 162 - BioNTech/Pfizer
- ChulaCov19 - Chula VRC
- COH04S1 - City of Hope
- Coronavac - Sinovac
- CORVax - OncoSec
- CoVax-1 - Univ Hosp Tuebingen
- COVAC-2 - VIDO-InterVac
- COVAX 19 - GeneCure
- Covaxin - Bharat Biotech
- COVI-VAC - Codagenix
- COVID-19 vaccine - Chinese Acad Med Sci
- COVID-19 vaccine - Chinese CDC
- COVID-19 vaccine - Sanofi/GSK

Thesaurus

C:\Program Files (x86)\WantagePoint-SCE\Thesaurus\Covid19 vaccine type.the

- Discontinued
- DNA
- Immune cell
- Immune potentiator
- Inactivated
- Live-attenuated
- modified Antigen-Presenting Cell (APC)
- Non-replicating viral vector
 - ^AZD 1222 - AstraZeneca/Oxford\$
 - ^AZD 1222- AstraZeneca/Oxford University\$
 - ^AZD 1222- AstraZeneca/Oxford\$
 - ^AZD1222/rAd26-S AstraZeneca/Gamaleya\$
 - ^Ad26\COV2 S - J&J\$
 - ^Ad26\COV2\S - J&J\$
 - ^Ad5 COVID-19 - ImmunityBio\$
 - ^Ad5 nCoV - CanSino\$
 - ^Ad5-nCoV - CanSino\$
 - ^Ad5-nCoV CanSino\$
 - ^AdCLD-CoV19 - Cellid\$
 - ^ChAdOx1 nCoV-19 - University of Oxford\$
 - ^GRAd-COV2 - ReiThera\$
 - ^Gam-COVID-Vac - Gamaleya\$
 - ^Gam-COVID-Vac\$
 - ^Sputnik V - Gamaleya\$
 - ^T-COVID - Altimmune\$

Results

Apply Thesaurus

- DNA
- Immune cell
- Inactivated
- Live-attenuated
- modified Antigen-Presenting Cell (APC)
- Non-replicating viral vector
- Protein subunit
- Replicating viral vector
- RNA
- Virus-like Particle

Display

- Entire List
- Matched Items
- Un-Matched Items

Thesauri – Categorize an added vaccine

The screenshot shows the Thesaurus Editor interface with the following components:

- Field:** Contains the text "Vaccine - sponsor".
- Thesaurus:** Lists various COVID-19 vaccine types under the "Inactivated" category. The entry "ERUCOV-VAC - Health Inst Turkey\$" is highlighted in yellow.
- Results:** Lists the following categories: DNA, Immune cell, Inactivated, Live-attenuated, modified Antigen-Presenting Cell (APC), Non-replicating viral vector, Protein subunit, Replicating viral vector, RNA, and Virus-like Particle.
- Display:** Radio buttons for "Entire List", "Matched Items", and "Un-Matched Items". The "Un-Matched Items" option is selected.

Two blue arrows point to the "Field" section and the "Un-Matched Items" radio button.

Thesauri – Apply the thesaurus to categorize by vaccine type

Summary Sheet

Field

(filters)

Vaccine - sponsor	Create List
updateDate	List Cleanup...
Trial Title	Thesaurus...
Study Type	Find and Replace...
Start Date	

Thesaurus

Field: Vaccine - sponsor

Name of new field: Vaccine type

Thesaurus: Covid19 vaccine type

Description of Thesaurus

More Options

- Allow Multiple Matches
- Use as Find and Replace Thesaurus
- Include unmatched items in new field

OK Cancel

Uncheck to filter out unmatched terms



Thesauri – From vaccine & sponsor to Vaccine type

	# Records	# Instances	Vaccine type
1	33	33	Non-replicating viral vector
2	28	28	Protein subunit
3	19	19	Inactivated
4	19	19	RNA
5	11	11	DNA
6	6	6	Replicating viral vector
7	5	5	modified Antigen-Presenting Cell (APC)
8	3	3	Virus-like Particle
9	1	1	Immune cell
10	1	1	Live-attenuated

Filtering – Create Sub-dataset

The screenshot displays a software interface with a menu bar and a data table. The menu bar includes options like 'Create Sub-dataset', 'List Cleanup', 'Thesaurus', 'Manage Fields', 'Create Field From', 'Merge Fields', 'Further Processing', 'Concatenate Fields', 'Edit Group', 'List Columns', and 'Group with'. The 'Create Sub-dataset' menu is open, showing the command 'Create Sub-dataset (Ctrl+N)' and a description 'Create new dataset based on group or selection'. Below the menu, a list of 126 titles is shown, with 0 selected. The table below the list has columns for '# Records', '# Instances', and 'Vaccine type (1)'. The table contains 10 rows of data.

	# Records	# Instances	Vaccine type (1)
1	33	33	Non-replicating viral vector
2	28	28	Protein subunit
3	19	19	Inactivated
4	19	19	RNA
5	11	11	DNA
6	6	6	Replicating viral vector
7	5	5	modified Antigen-Presenting Cell (APC)
8	3	3	Virus-like Particle
9	1	1	Immune cell
10	1	1	Live-attenuated

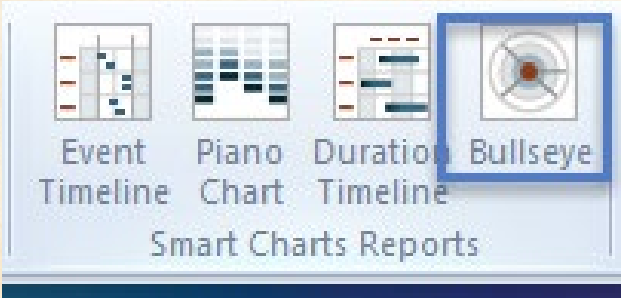
Filtering – Create Sub-dataset

Summary Sheet

Source File: C:\bizint demo data\Covid\covid19 NCT 2-26-2021.vpxi
Source Database: BizInt Smart Charts Drug Development Suite 5.2

Field	Number of Items	% Coverage	Data
(filters)			
Vaccine type	10	100%	
Vaccine - sponsor	58	100%	

Create the bullseye



Create Bullseye

Bullseye

Select a Template:
Select a Template

Step 1: Select Required Fields:
Select a Field to chart:
Vaccine - sponsor

Select a Field for the Phase:
Phase (1)

Select a Category field for the pie slices:
Vaccine type

Step 2: Set Chart Title:
Chart Title: COVID-19 Vaccine landscape

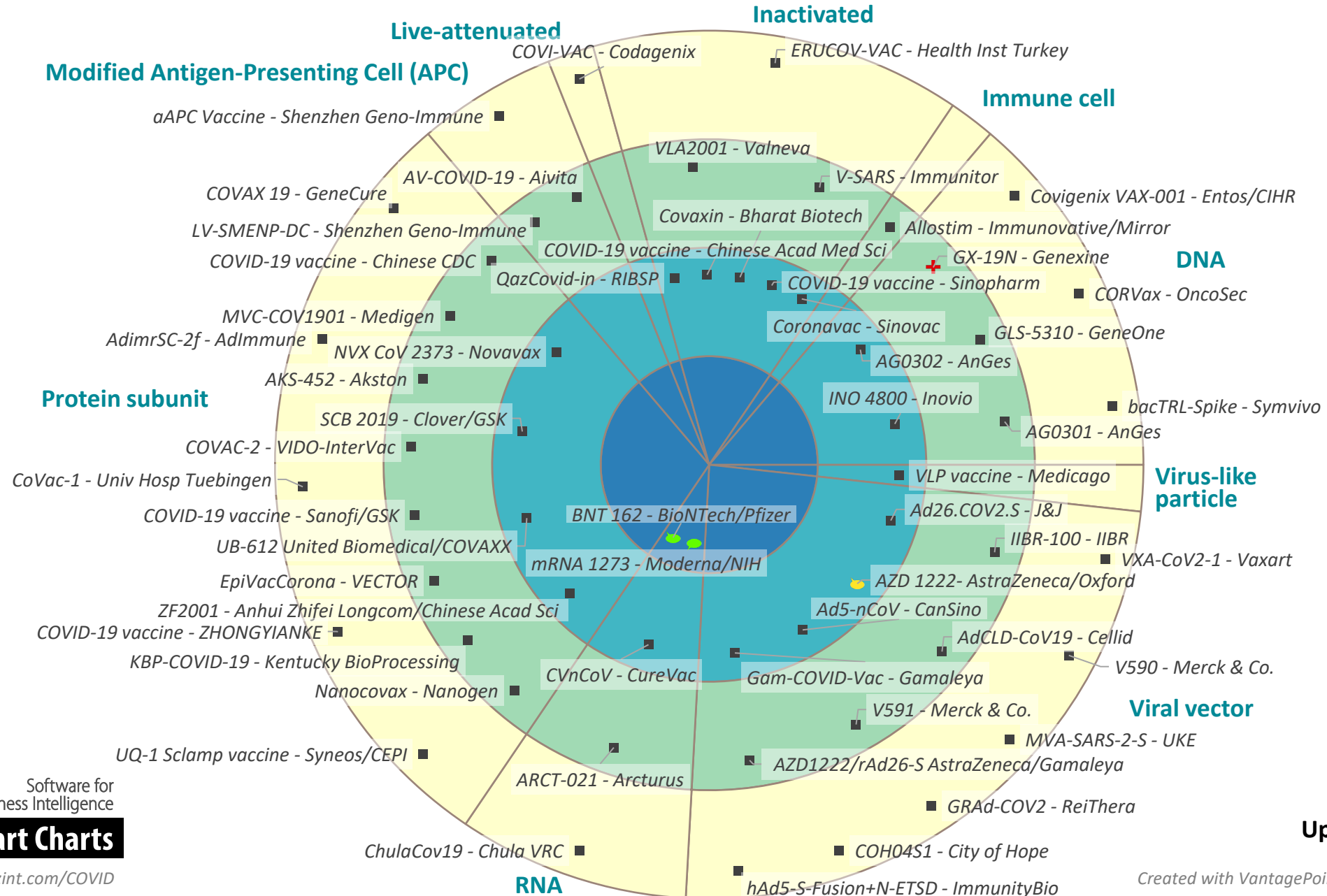
Step 3: Create Bullseye
Choose the export format for your chart: PowerPoint Excel
Template Name: Save Template

?

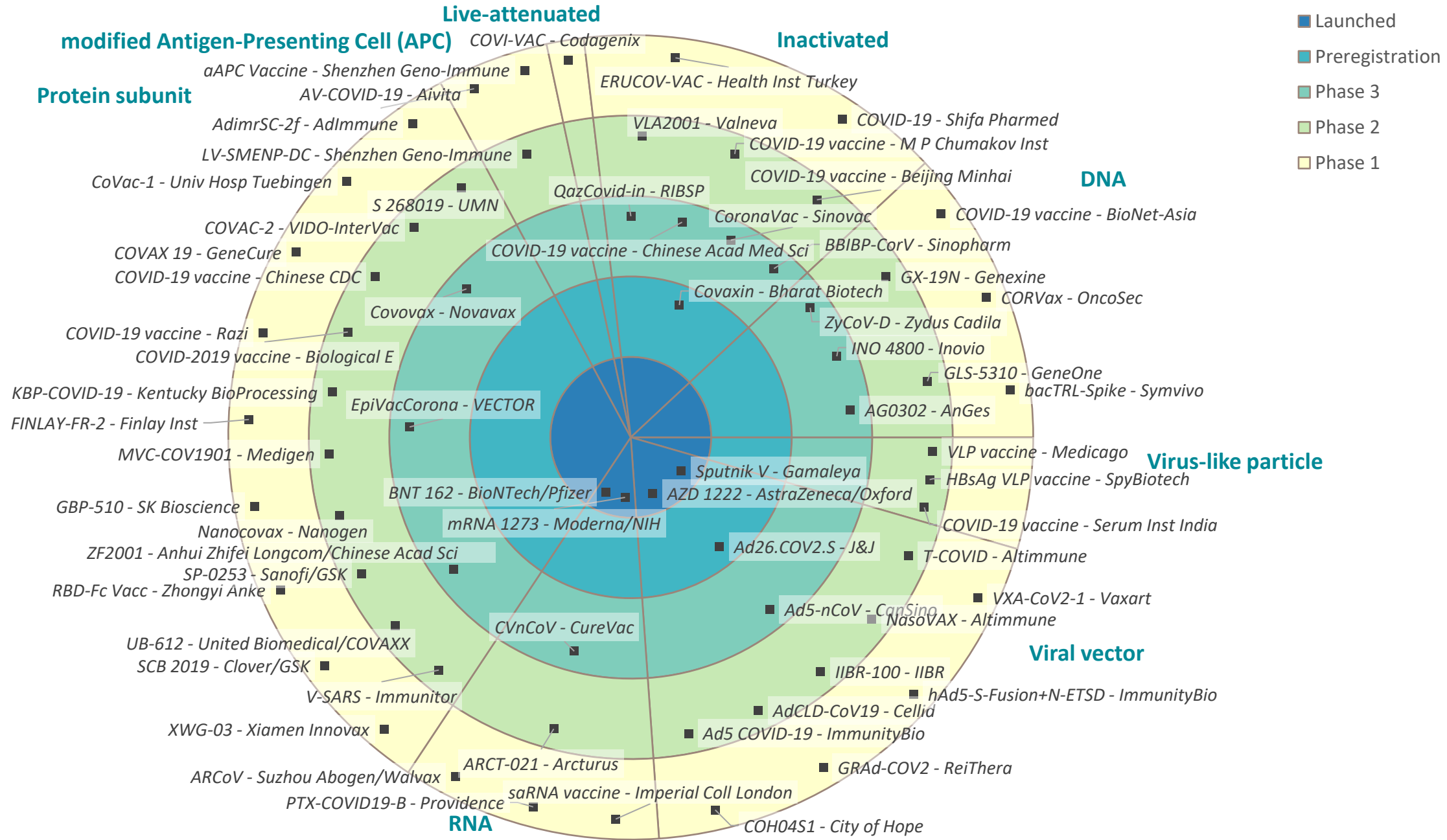
Create Bullseye Cancel

COVID-19 Vaccine Landscape

VP-SCE BullseyeSM



COVID-19 Vaccine Landscape - pipeline



Enhance your tabular reports

Data can be sent round trip between tools.



	Drug	Database	Accession Number	Common Drug Name	Extracted Highest Phase	Vaccine - sponsor	Vaccine type
1	pathogen-specific aAPC	Cortellis from Clarivate Analytics	122723	pathogen-specific aAPC	Phase 1	aAPC Vaccine - Shenzhen Geno-Immune	modified Antigen-Presenting Cell (APC)
2	Ad26 SARS-CoV-2	Cortellis Integrity	1086063	Ad26.COV2 S	Phase 3	Ad26.COV2.S - J&J	Viral vector
3	Ad26.COV2 S	Adis R&D Insight	800057362	Ad26.COV2 S	Preregistration	Ad26.COV2.S - J&J	Viral vector
4	JNJ-78436735	Cortellis from Clarivate Analytics	122092	Ad26.COV2 S	Preregistration	Ad26.COV2.S - J&J	Viral vector
5	COVID-19 vaccine, Johnson & Johnson	Citeline Pharmaprojects	176633	Ad26.COV2 S	Preregistration	Ad26.COV2.S - J&J	Viral vector
6	Ad5 COVID-19 vaccine, ImmunityBio	Citeline Pharmaprojects	179585	Ad5 COVID-19 vaccine, ImmunityBio	Phase 2	Ad5 COVID-19 - ImmunityBio	Viral vector
7	Ad5-nCoV	Cortellis from Clarivate Analytics	122468	Ad5-nCoV	Phase 3	Ad5-nCoV - CanSino	Viral vector
8	SARS-CoV-2 vaccine, Can Sino Biologics	Citeline Pharmaprojects	178579	Ad5-nCoV	Phase 3	Ad5-nCoV - CanSino	Viral vector
9	Ad5-nCoV	Cortellis Integrity	1084313	Ad5-nCoV	Phase 3	Ad5-nCoV - CanSino	Viral vector
10	Ad5 nCoV - Tianjin Can Sino Biotechnology	Adis R&D Insight	800057856	Ad5-nCoV	Phase 3	Ad5-nCoV - CanSino	Viral vector
11	COVID-19 vaccine, AdImmune	Citeline Pharmaprojects	185604	AdimrSC 2f	Phase 1	AdimrSC-2f - AdImmune	Protein subunit
12	AdimrSC 2f	Adis R&D Insight	800060061	AdimrSC 2f	Phase 1	AdimrSC-2f - AdImmune	Protein subunit
13	AdimrSC-2f	Cortellis from Clarivate Analytics	126455	AdimrSC 2f	Phase 1	AdimrSC-2f - AdImmune	Protein subunit

New in Visualizations - VP-SCE 12

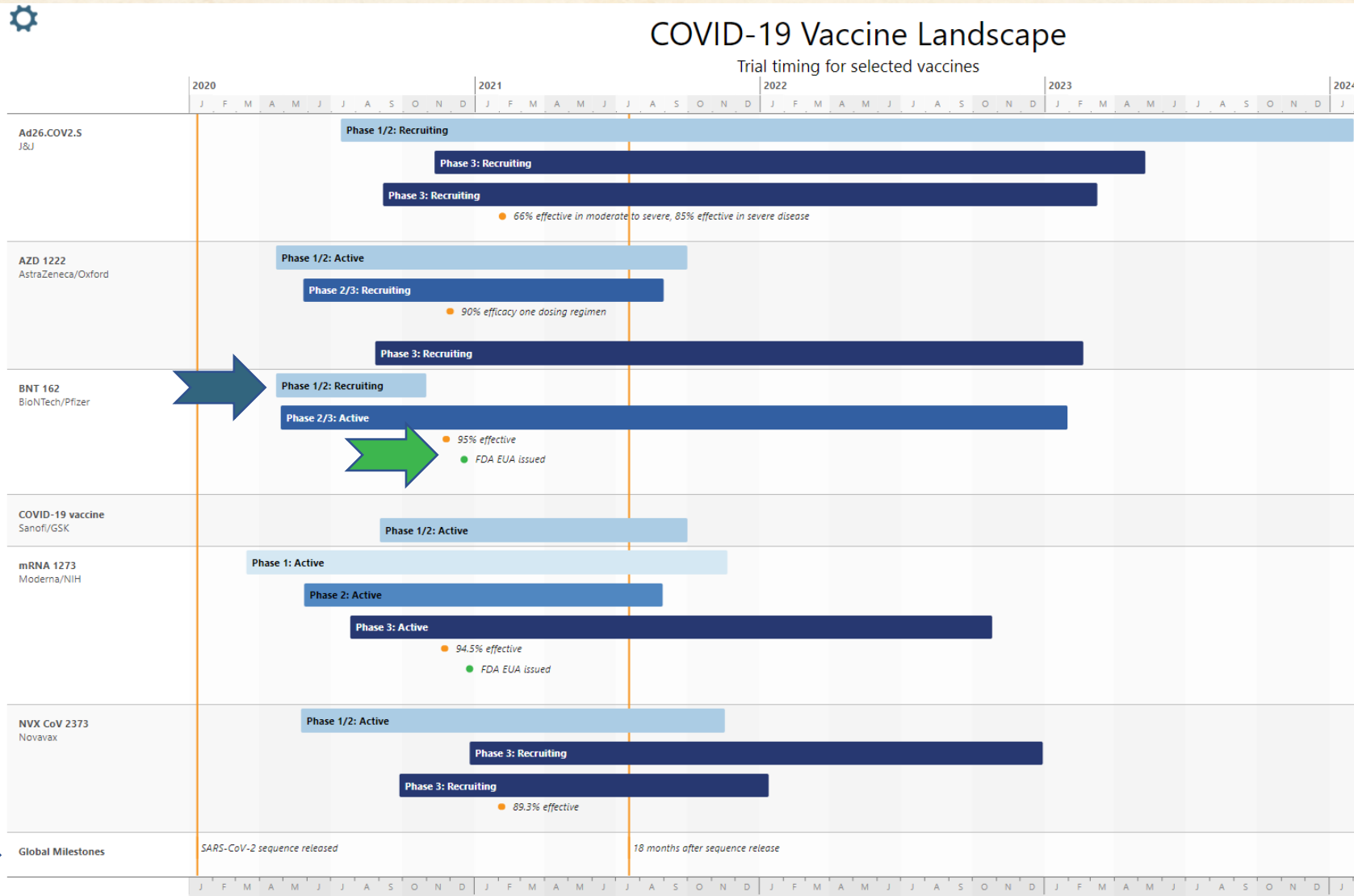
- **Milestone Timeline**
 - Brand new!
 - Combines features of Event and Duration Timelines
- **Bullseye**
 - Updated design
 - Option to show count for each slice
 - Option to choose which phases to show regardless of content
- **Piano**
 - Split long columns into two
 - Inverted bottom to top
 - Color palette choices
- **More new visualizations**
 - Multi donut
 - Scatter Plot
 - Butterfly Chart

Beyond visualizations

- **Filter Drug Development Phase** – Easily create a Drug Development Phase table for a single indication, or for a few key indications
- **Filter by Selected** – Filter any field by a selection
- **Create Field from Each Group** – Create groups and then create a new field for each group.

Milestone Timeline

VP-SCE TimelineSM



- Phase 1
- Phase 1/2
- Phase 2
- Phase 2/3
- Phase 3
- Milestone
- Authorized

Milestone Timeline

NCT Number	Vaccine - sponsor	Vaccine type (Cleaned)	Phase	Overall Status	Start Date	Completion Date	Milestone Data		
							Milestone Date	Milestone Text	Milestone Type
NCT04505722	Ad26.COVS.S - J&J	Viral vector	Phase 3	Recruiting	September 7, 2020	March 10, 2023 (Anticipated)	1/29/2021	66% effective in moderate to severe, 85% effective in severe disease	Milestone
NCT04614948	Ad26.COVS.S - J&J	Viral vector	Phase 3	Recruiting	November 12, 2020	May 11, 2023 (Anticipated)			
NCT04436276	Ad26.COVS.S - J&J	Viral vector	Phase 1/Phase 2	Recruiting	July 15, 2020	February 2, 2024 (Anticipated)			
NCT04516746	AZD 1222-AstraZeneca/Oxford	Viral vector	Phase 3	Recruiting	August 28, 2020	February 21, 2023 (Anticipated)			
NCT04400838	AZD 1222-AstraZeneca/Oxford	Viral vector	Phase 2/Phase 3	Recruiting	May 28, 2020	September 2021 (Anticipated)	11/23/20	90% efficacy one dosing regimen	Milestone
NCT04324606	AZD 1222-AstraZeneca/Oxford	Viral vector	Phase 1/Phase 2	Active, not recruiting	April 23, 2020	October 2021 (Anticipated)	7/20/20	Immune response in all participants	Milestone
NCT04368728	BNT 162 - BioNTech/Pfizer	RNA	Phase 2/Phase 3	Active, not recruiting	April 29, 2020	January 21, 2023 (Anticipated)	11/18/20 12/11/20	95% effective FDAEUA issued	Milestone Authorized
NCT04380701	BNT 162 - BioNTech/Pfizer	RNA	Phase 1/Phase 2	Recruiting	April 23, 2020	November 2020 (Anticipated)	7/1/20	Immune response	Milestone
NCT04537208	COVID-19 vaccine - Sanofi/GSK	Protein subunit	Phase 1/Phase 2	Active, not recruiting	September 3, 2020	October 2021 (Anticipated)			
NCT04470427	mRNA 1273 - Moderna/NIH	RNA	Phase 3	Active, not recruiting	July 27, 2020	October 27, 2022 (Anticipated)	11/16/20 12/18/20	94.5% effective FDAEUA issued	Milestone Authorized
NCT04405076	mRNA 1273 - Moderna/NIH	RNA	Phase 2	Active, not recruiting	May 29, 2020	August 31, 2021 (Anticipated)			
NCT04283461	mRNA 1273 - Moderna/NIH	RNA	Phase 1	Active, not recruiting	March 16, 2020	November 22, 2021 (Anticipated)	14-Jul-20	Immune response in all participants	Milestone
NCT04611802	NVX CoV 2373 - Novavax	Protein subunit	Phase 3	Recruiting	December 27, 2020	December 30, 2022 (Anticipated)			
NCT04583995	NVX CoV 2373 - Novavax	Protein subunit	Phase 3	Recruiting	September 28, 2020	January 14, 2022 (Anticipated)	1-28-21	89.3% effective	Milestone

Timeline::Trials (5)

Home Refine Analyze Report

Column Chart Bar Chart Pie Chart Line Chart Word Cloud Donut Chart Bubble Plot

Add Sheet

Create Trial Timeline

Milestone Timeline

Select a Template:
 Select a Template

Step 1: Select Required Fields:

Select a Field for the Lane Labels:
 Sponsor - Vaccine

Select a Starting Date Field:
 Start Date

Select an Ending Date Field:
 Completion Date

Select a Bar Label Field:
 Bar label

Select a Bar Category Field:
 Phase (1)

Use Sequential Color Palette for Bars?

Step 2: Choose Options:

Select a field containing Milestone Data (Date/Text/Type)
 Milestone Data: Filtered

Create Custom Global Milestones

Milestone Text	Milestone Date	
SARS-CoV-2 sequence	01/12/2020	+ -
18 months after sequer	07/18/2021	+ -

Step 3: Set Chart Title:

Chart Title: (Use Default Name)

Chart SubTitle: (Use Default Name)

Step 4: Create Timeline

SCE - COVID-19 NCT

Export to BizInt Export Smart Charts Image Export

one Timeline

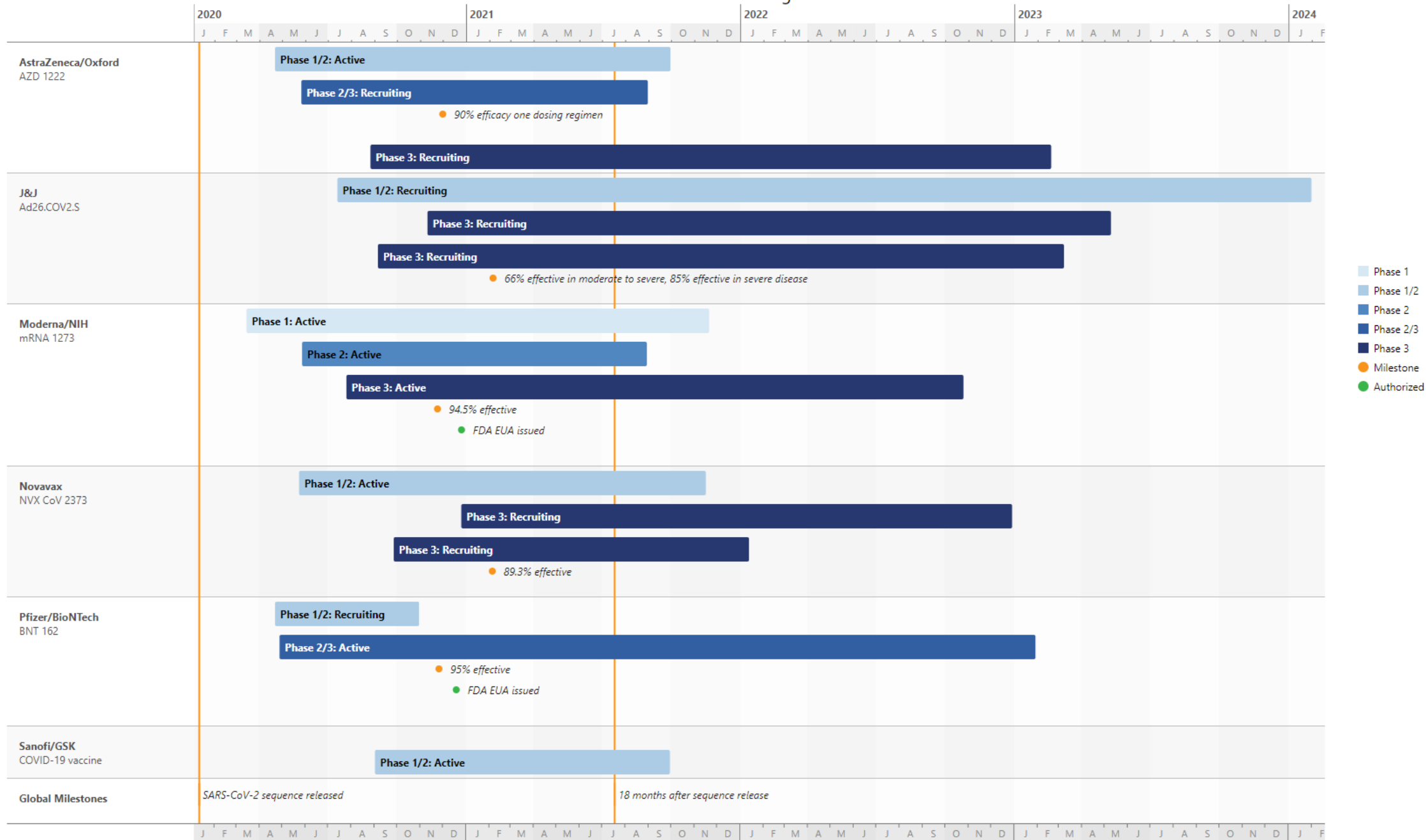
a Milestone

e



COVID-19 Vaccine Landscape

Trial timing for selected vaccines



- Phase 1
- Phase 1/2
- Phase 2
- Phase 2/3
- Phase 3
- Milestone
- Authorized



Software for
Business Intelligence

BizInt Smart Charts

Patents & IP Sequences | Clinical Trials | Drug Pipelines

Thank You!

Questions?

I have some, so you
can help me with our
case study...

COVID-19 Vaccine Landscape - pipeline

What gets marked New?

Moving from Preclinical to Phase 1?

Newly identified by the source databases?

