BQRC

Critical Quality Attributes, Critical Process Parameters, Tracking and Trending

Rajesh K. Gupta, Ph.D.

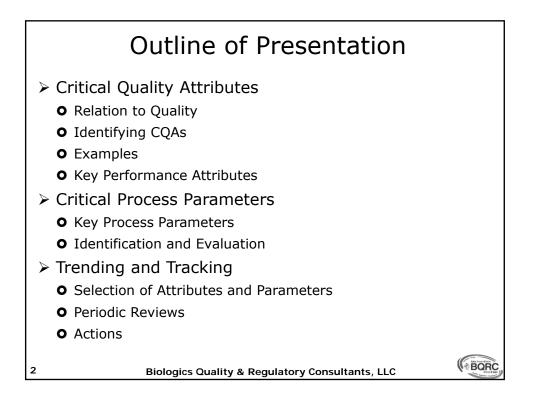
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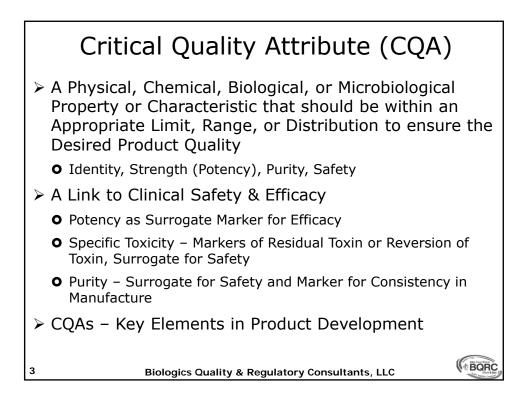
Analyze, Strategize & Operate – Different & Smart

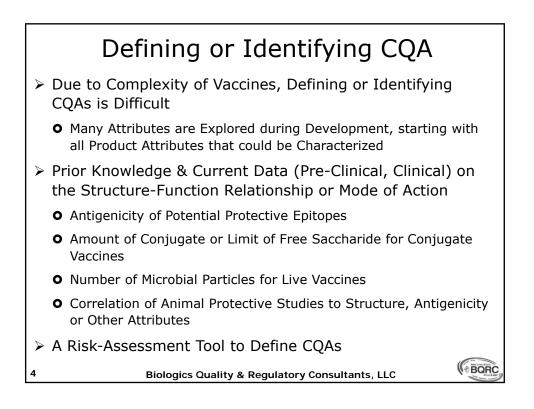
rgupta@bqrc.org

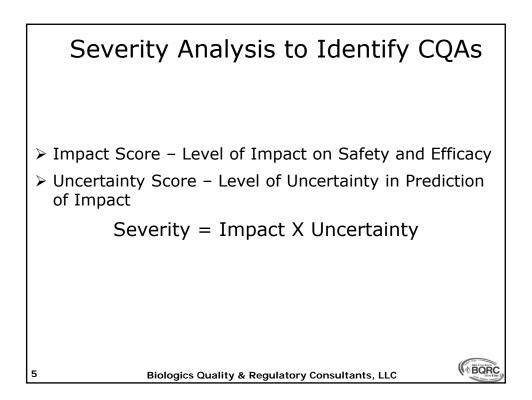
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DCVMN Training Workshop – Hyderabad, India April 4 – 8, 2016







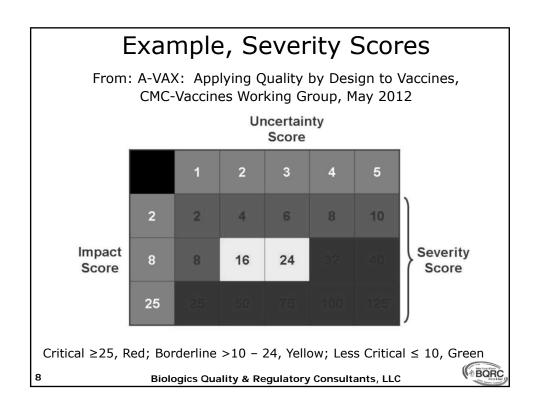


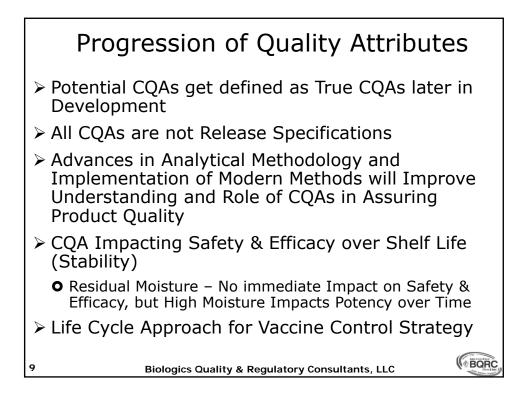
		: A-VAX: Applying	Impact Scores g Quality by Design to Vaccines, Vorking Group, May 2012
	Impact Score	Efficacy	Safety and Tolerability (Adverse Events, AEs)
	Very High 25	Significant Change	Severe AE prevents normal, everyday activities (e.g., prevent attendance at school/kindergarten/day-care center, requiring medical attention or advice). Significant increase in severity and/or frequency.
	Moderate 8	Moderate Change	Moderate Sufficiently discomforting to interfere with normal everyday activities. Moderate but detectable increase severity and/or frequency over placebo.
	Minimal 2	Minor to No Change	Mild Easily tolerated, causing minimal discomfort and not interfering with everyday activities. Similar to placebo.
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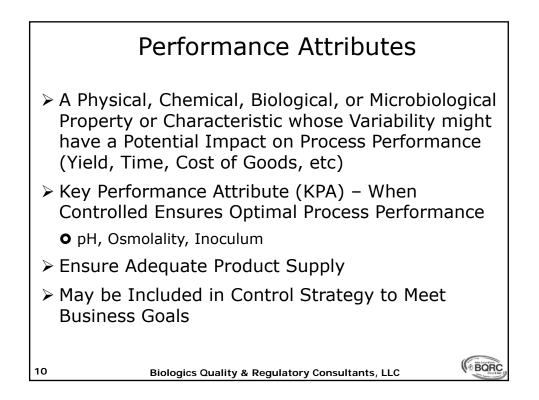
Example, Uncertainty Scores

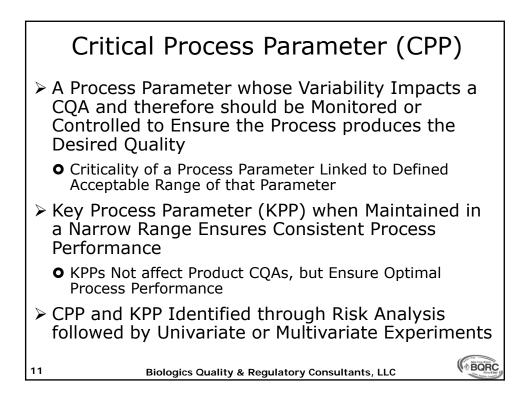
From: A-VAX: Applying Quality by Design to Vaccines, CMC-Vaccines Working Group, May 2012

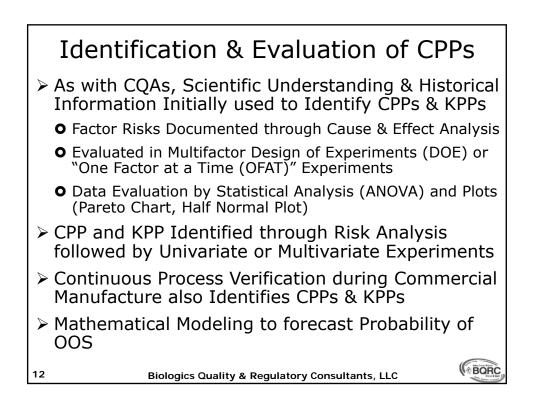
Score	Uncertainty		
Very High 5	No information available External information available from literature on related vaccine(s) Data from internal laboratory or nonclinical studies with this antigen:adjuvant complex, or internal data extrapolated from related vaccine(s)		
High 4			
Moderate 3			
Low 2	Supportive data from <i>clinical studies</i> with this antigen:adjuvant complex		
Minimal 1	Published limits widely accepted by regulatory and scientific community		
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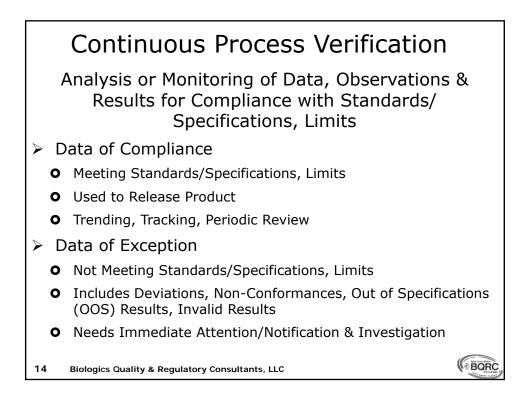


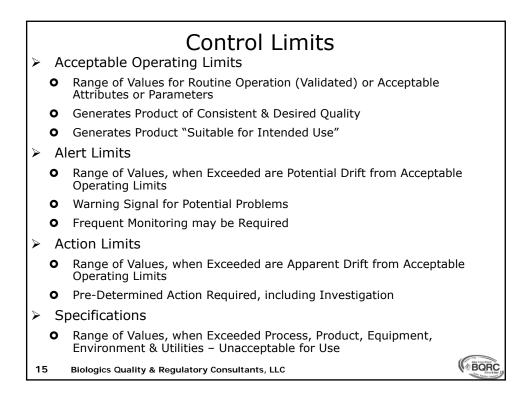


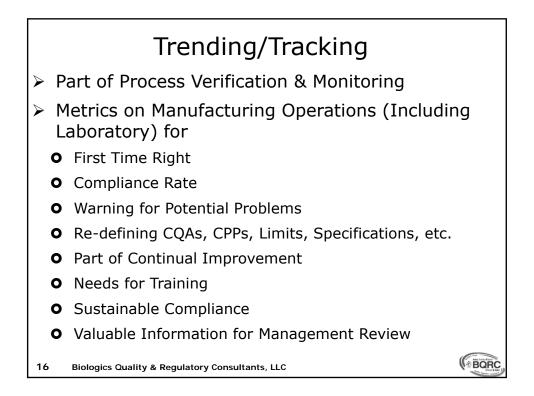












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Data for Trending/Tracking (Examples)

- > Appropriate CQAs, KPAs, CPPs, KPPs, etc.
- > Metrics on Equipment Performance
- Metrics on Utilities
- Laboratory Metrics
 - Known Laboratory Errors
 - Invalid Tests
 - **0** 00S
 - Invalidated OOS
 - Any Other Metrics
 - Equipment Performance, Calibration, etc.
 - Critical Reagent Performance
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Methods System Suitability **Examples** Standard Curve Parameters Linear – r, Slope, Intercept, 50% End Point 0 4 - Parametric, Upper & Lower Asymptotes, r, slope, 0 50% End Point Background Internal Controls • Limits Sets at 95 or 99% CI, Parallelism (Slope Ratio) Chromatographic Procedures • CV of Injection Repeatability Performance of Standards/Controls • S / N for Quantitative Impurities and Limits Tests Non-chromatographic procedures • Titration - Blank Polarimetry - Rotation Standards BORC 18 Biologics Quality & Regulatory Consultants, LLC

