### TSC Category

**General Management**

### TSC

**Systems Thinking**

### TSC Description

Integrate understanding of biopharmaceuticals manufacturing with interactions between components when developing manufacturing processes or overseeing manufacturing activities.

### TSC Proficiency Description

<table>
<thead>
<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
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<th>Level 5</th>
<th>Level 6</th>
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<tbody>
<tr>
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<td>BPM-GMT-2013-1.1</td>
<td>BPM-GMT-3013-1.1</td>
<td>BPM-GMT-4013-1.1</td>
<td>BPM-GMT-5013-1.1</td>
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<tr>
<td>Identify interdependencies within manufacturing processes and apply knowledge in day-to-day work</td>
<td>Identify how isolated interventions could impact biopharmaceutical products quality as a whole</td>
<td>Predict changes to processes and interdependencies over time</td>
<td>Formulate effective strategies targeting management of multi-disciplinary and interdependent manufacturing processes</td>
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### Knowledge

- Biopharmaceuticals manufacturing process and equipment
- Systems thinking tools and methodologies
- Application of systems thinking principles

### Abilities

- Recall the end-to-end biopharmaceuticals manufacturing processes to identify formal and informal process steps
- Identify how individual and team actions may impact manufacturing results
- Identify how different stages of the manufacturing processes can impact one another
- Describe interdependencies within manufacturing processes
- Apply a broader perspective to suggest improvements to be
- Frame current issues in the context of the end-to-end manufacturing processes to facilitate decision making
- Interpret interdependencies within the manufacturing processes to support effective decisions regarding interventions and changes
- Envision the big picture and how isolated areas impact processes as a whole
- Identify potential domino effects or chain reactions caused by new process steps or decisions
- Forecast the long term business impact of proposed interventions and changes
- Predict changes to processes and interdependencies over time as a result of operational needs and market constraints
- Leverage interdependencies to suggest tweaks to interventions and changes for greater impact and more controlled outcomes
- Inspire culture and habit of broad, integrated systems thinking within the organisation
- Anticipate wider organisational implications of changing or introducing new processes
- Develop effective strategies targeting management of multi-disciplinary and interdependent manufacturing processes
- Project the short and long term impact of interventions and changes
- Diagnose manufacturing issues by evaluating a broad range of variables
| made within own work area |   |   |   |   |   |