**The Assessment Tasks**

**Task 1:**

*Understanding Dynamic Complexity in Public Health Systems Using Causal Loop Diagrams (CLDs)*

**Background**

In partnership with a UK-based health research organisation supporting innovative neuroscience and mental health research, students will explore systemic challenges related to **addiction and behavioural health**. This organisation is currently designing a systems-based programme to address the complex interactions between **neurological, psychological, and social drivers** of substance misuse and mental health outcomes over the life course.

Your poster will be informed by an anonymised case study derived from prior research work conducted by this organisation in collaboration with NHS Trusts and third-sector addiction recovery providers.

**Scenario**

**Understanding Feedback Loops in Young Adult Alcohol Dependency and Relapse Risk**

**Description:**

An anonymous UK-based community addiction service reported a persistent **relapse rate of over 45%** within 12 months among individuals aged 18–30 undergoing treatment for alcohol dependency. Interviews and service data revealed recurring patterns involving:

* Social exclusion post-treatment
* Stigma from employers and peers
* Delayed mental health support
* Cycles of stress, coping failure, and increased alcohol use

Students will construct a Causal Loop Diagram to explore how feedback mechanisms contribute to sustained risk of relapse and identify leverage points where intervention could shift system behaviour.

**Poster Requirements**

Your poster should include:

**1. Introduction**

* Define the problem area
* Reference literature on alcohol dependency, systems thinking in public health, and relapse dynamics
* Use real-world data to contextualise the issue

**2. Causal Loop Diagram (CLD)**

* Clearly label variables, link polarities (+/–), and identify reinforcing/balancing loops
* Use at least **15–20 variables**, including auxiliary variables such as:
	+ *Access to support services*, *social integration*, *perceived stigma*, *stress levels*, *coping capacity*, *treatment engagement*
* Highlight 1–2 potential leverage points/validation

**3. Theoretical Integration**

* Reference **systems thinking frameworks**, e.g.:
	+ Meadows (1999) – *Leverage Points*
	+ Senge (1990) – *Systems Archetypes*
	+ Midgley (2000) – *Critical Systems Thinking*

**4. Discussion Points**

* What makes the system resilient to change?
* Where could feedback loops be disrupted to reduce relapse risk?
* Consider the qualitative and quantitative nature of the system

**Deliverables**

1. Variables Table: Concise summary with evidence.
2. CLD: Clearly labelled with polarity and feedback loops.
3. Use and Cause Trees: Simple diagrams showing actions, outcomes, and root causes.
4. Validation Section: Summary of Goldratt’s criteria application.

**Assessment Criteria**

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| **Area** | **Weight** |
| Conceptual accuracy (CLD structure) | 20% |
| Literature and theory integration on business and systems analysis | 20% |
| Poster design and clarity | 20% |
| Analytical insight and discussion | 20% |
| Presentation quality (spoken clarity) | 10% |
| Time management | 5% |
| Academic writing (Grammar, referencing, etc) | 5% |

**Suggested References**

* Meadows, D. (1999). *Leverage Points: Places to Intervene in a System.* The Sustainability Institute.
* Senge, P. (1990). *The Fifth Discipline: The Art & Practice of The Learning Organization.* Doubleday.
* Midgley, G. (2000). *Systemic Intervention: Philosophy, Methodology, and Practice.* Springer.
* Room, R. (2005). Stigma, social inequality and alcohol and drug use. *Drug and Alcohol Review, 24(2)*, 143–155.
* Capasso, A., et al. (2022). A system dynamics model of addiction relapse: A qualitative modelling study. *Systems Research and Behavioral Science.*
* National Institute for Health and Care Excellence (NICE). (2023). *Alcohol-use disorders: diagnosis, assessment and management.*