Project name: Antimicrobial stewardship in <u>All Bugs Hospital</u>
Unit(s) affected (anticipated): **? not sure**
Project start date: Today   End date : 6 months from today
Aim Statement: (SMART: specific, measurable, actionable, relevant, time-bound)

A

B

Global Aim: What are you trying to achieve?   Ask "why" and "how" three times   Make a specific SMART ai

1

Global aim: To assure appropriate antimicrobial regimens are use at All Bugs Hospital

2

Why 1 Attendings use different drugs and cause confusion (inconsistent)	**Why 2** Antimicrobial resistance patterns are worsening at our hospital	**Why 3** Patients are not always receiving the best antimicrobial regimen, which might cause complications or ↑ LOS

3

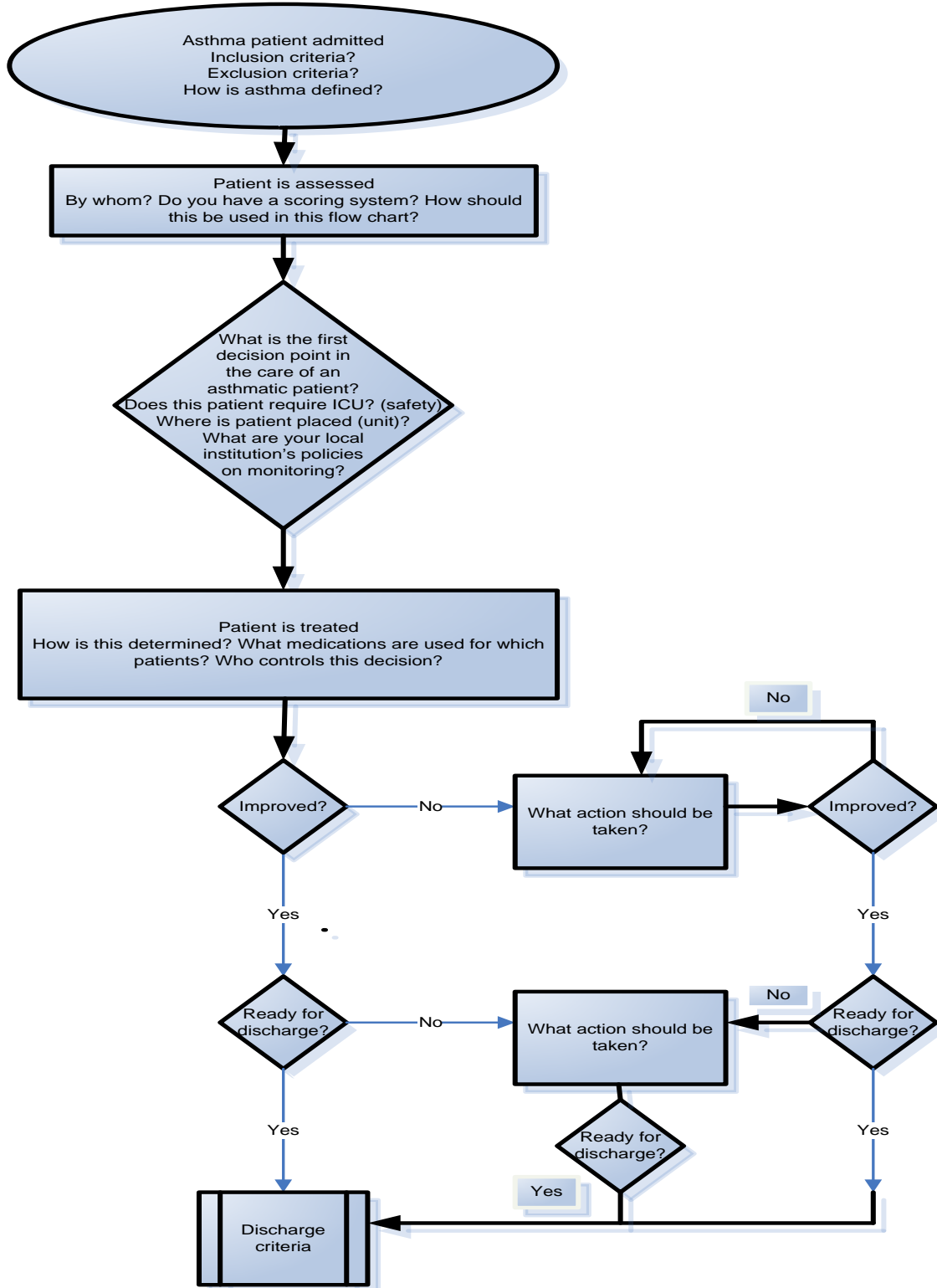| **How 1** Obtain and review local data (orders, tests)	**How 2** Review EBM, best practices from content experts	**How 3** Create an order set that meets the needs and assures critical elements (dx,tx) are "hard wired" as much as possible.

4

Specific Aim 1: Within 6 months, all patients at All Bugs Hospital will have appropriate antimicrobial regimens.

Algorithm Draft Example

(Created using a Flow Chart Tool)

Asthma patient admitted
Inclusion criteria?
Exclusion criteria?
How is asthma defined?

Patient is assessed
By whom? Do you have a scoring system? How should this be used in this flow chart?

What is the first decision point in the care of an asthmatic patient?
Does this patient require ICU? (safety)
Where is patient placed (unit)?
What are your local institution's policies on monitoring?

Patient is treated
How is this determined? What medications are used for which patients? Who controls this decision?

Improved? — No → What action should be taken? → Improved?

No

Yes

Yes

Ready for discharge? — No → What action should be taken? ← Ready for discharge?

No

Ready for discharge?

Yes

Yes

Yes

Discharge criteria

Rady Children's
Hospital and Health Center

UCSD

<p style="text-align: center;">**QI Methods Handout: QI Tools Cheat Sheet**</p>

Reaching agreement
To generate ideas, build consensus, finalize a project topic/goal

Brainstorming – a team method of generating ideas, free of criticism and judgment

Affinity Diagram – is often used to group ideas generated by brainstorming. A method used to organize and summarize natural groupings of ideas to understand problem and solutions. The issue is phrased in one sentence; brainstorming is used to generate ideas which are then sorted by like-groupings. Groupings are then diagramed with boxes and arrows indicating relationships

Multi-voting - is a group decision-making technique used to reduce a long list of items to a manageable number by means of a structured series of votes. The result is a short list identifying what is important to the team. Multi-voting is used to reduce a long list of ideas and assign priorities quickly with a high degree of team agreement.

Nominal Group Technique- a technique used to prioritize ideas. A letter (A-Z) is assigned to each idea. Members are asked to rank order the ideas based on importance and/or feasibility (5 ideas: highest importance = 5, lowest = 1)
- Add rank scores, highest number is 1st, etc.
- Multivoting variation: each member gets 100 points to distribute across the ideas
    - E.g. 25 points for idea A; 0 points for idea B, 75 points for idea C

Assessing processes and relationships
To visually display current and ideal care processes

Flow Chart (Process map) – a pictorial representation showing all of the steps of a process. This tool is particularly useful in the early stages of a project to help the team identify the number of steps in a process, their order, and the number and type of individuals involved. Can be used also to therefore identify unnecessary redundancies that can be eliminated (i.e. use Lean principles) or variations in care delivery that may lead to errors. Process maps can be then created to demonstrate the new process, and used as an educational tool.
- Shapes used as symbols: Diamond: yes/no decision; Oval: input/outputs; Box: task performed; Arrow: direction

Cause-and-Effect Diagram (Fishbone; Ishikawa) – a graphical display of an organized list of possible causes, solutions, or factors, focused on one topic or objective.

Identifying Failures and Protective Barriers
To systematically identify both failures and barriers and quantify failure impact

Failure Mode and Effect Analysis (FMEA) – is an error analysis done either retrospectively (as in Root Cause Analysis) or prospectively to determine "error modes". The likelihood that a particular process will fail is combined with an estimate of the relative impact of that failure to determine a "criticality index". This allows for prioritization of targets for improvement based on index.

Barrier Analysis – allow for identification of barriers which could have (or could in the future) prevent an adverse event. Four categories of barriers (with examples) are typically considered: physical (ex: locked drug dispensing units) administrative (protocols/procedures), human (checking patient understanding of a medication) and natural (distance or time such as giving drug A on ward and taking patient to OR where drug B is then given).

Assessing variation in practice
To visually present data, identify variation, and follow impact of intervention over time

Pareto Chart – a graphical display (commonly a histogram) of competing events, choices, or options which compares relative weights or frequencies. A Pareto Chart is also known as the "80 / 20 rule - 80% of problems come from 20% of causes". Identifies where to focus limited resources for biggest impact.

Run Chart – a graph in which an observation is plotted over time to see if there are "runs" of points above or below a central line (usually the median). A run of > 8 observations in a particular direction indicate a possible shift in outcome, a non-random variation.

Statistical Process Control Chart – a type of run chart that includes upper and lower control limits.

References
1. Guide to Using Quality Improvement Tools to Drive Clinical Audits. Dixon and Pearce. Healthcare Quality Improvement Partnership. Oct 2011. Available at: http://www.hqip.org.uk/assets/Guidance/Guide-to-Using-Quality-Improvement-Tools-to-Drive-Clinical-Audits-HQIP.pdf

2. Ovretveit J. What are the advantages and limitations of different quality and safety tools for health care? Health Evidence Network report. Copenhagen: WHO Regional Office for Europe; 2005. Available at: http://www.euro.who.int/document/e87577.pdf