How To Use CHEPS OR Allocation Planning Tools

DIFFERENCES BETWEEN THE TWO SPREADSHEETS:

1. The "Individual Case" specific spreadsheet involves the user inputting each individual case alongside data regarding each surgery. This allows for a more descriptive analysis of backlog case information such as the total number of OR days required per department.
2. The "Aggregated Case" specific spreadsheet allows you to enter only the total number of cases/patients pending associated with each priority per department. This provides a more general description of the patient backlog while the Resources, Allocations and Utilizations are left the same.

In the directions below, sections associated with the Individual Case specific spreadsheet only are noted with a box around the text. All other descriptions overlap between the Individual and Aggregated Case spreadsheets.

FUNCTION OF TABS:

1. Case Review Filtered
   - Contain the entire USER inputted backlog of individual Surgeries that need to be performed in each department alongside their Duration, Readiness, and Final Surgical Urgency Score
2. Backlog Volume
   - Based on the total number of cases, distribution of priorities, and the inputted bounds that each priority falls **within**, this tab will place all pending cases in Priorities 1-5 (Tier 1 represents the most severe/time-sensitive cases and Tier 5 represents the least severe). They are displayed and organized within each service alongside the total number of cases
3. Time Needed
   - Displays the total number of OR days necessary to complete all the surgeries within each service and each priority level alongside the total number of OR days for all Priorities, collectively.

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4. Service Needs
   - Primary USER Input tab where the total number of available resources, number of resources collectively needed in each department, the number of Pending Patients awaiting surgery (Priority 1 as most urgent), and sites that allow the specific service to operate at.
5. Allocations
   - Another USER Input tab where OR rooms/hours for each service at each hospital location is allocated across each Site and then it indicates where the total number of allocated ORs exceeds or provides a surplus. The total number of ORs

allocated per service is then summed as well as the number of hours based on the Hours-per OR day.

6. Resource Utilization
   - Calculates the total surplus or deficit or resources that are utilized in each service based on the Total Number of cases Allocate to that specific service.
7. Patient Backlog
   - Displays the number of backlogged, scheduled, and remaining cases for different services and priorities.
8. Technical NOTES
   - Provides a description of the USER Input values and of the spreadsheet calculations and output values.
9. Data NOTES
   - Explains from where the pre-existing data originated.

SET UP:

To form the spreadsheet infrastructure, several parameters and assumptions were implemented, as described in the "Data NOTES" tab and listed below:

- Time Needed tab:
  - The total number of OR days assumes that not breaks are taken in-between each surgery procedure
- Service Needs tab:
  - Resources Needed (OR Specific) – the resources unique only to the OR room
  - Resources Needed (Case Specific) – the resources unique only to the individual being operated on.
  - Both Resources Needed have a "Weighted Average" that take into account the proportion of people with and without COVID-19.
  - OR Time/Case (Hours)
  - Assume one COVID-19 test per all patients
  - The Ranges that each Priority level encompasses and "Number of Pending Patients" are inputted and calculated in the "Case Review Filtered" and "Backlog Volume" tabs
- Allocations:
  - Assume 12 hour per OR-day for each location
  - The "Sites" indicate the specific hospitals/locations, while "Services" are the specific departments within the hospital/locations
  - Greyed out regions indicate that the specific service within that Site is not allowed and therefore cannot have OR days allocated to it

RUN AN ANALYSIS:

To run an analysis, several USER input fields must be entered into the spreadsheet, as described in the "Technical NOTES" tab and listed below. Then, the spreadsheet will automatically calculate the remaining cases for different services and priorities as seen in the "Patient Backlog" tab. The Total Surplus/Deficit of the resources (OR specific and case specific) is

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calculated and displayed in the "Resource Utilization" tab. Some of the USER input fields are also listed as parameters in the Set up section. Although parameters are predefined, it is important that the USER reviews the parameters that are also listed as USER input for legitimacy. That way, if there is new data, the USER can update the old data.

The USER MUST PROVIDE or REVIEW the following information:

- "Case Review Filtered" tab *(inputs for each patient occur in the same row)*:
  - Service (the type of surgery that will be performed)
  - Length of Case (in minutes)
  - If the case ready to proceed to OR? (Y?N)
  - Final Surgical Urgency Score (out of 12)
- "Backlog Volume" tab:
  - The UB (Upper Bound) and LB (Lower Bound) for each Priority level

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- "Service Needs" tab:
  - Total supply of resources (OR and case specific)
  - % COVID vs non-COVID patients
  - Resources Needed (OR Specific)
  - Resources Needed (Case Specific)
  - Number of Pending Patients
    - NOTE: This is not needed for the "Individual Case" specific spreadsheet as these inputs are automatically populated from the "Case Review Filtered" tab
  - Allowed sites
- "Allocations" tab:
  - Hours per OR-day
  - Capacity (ORs per week)
  - OR utilization days for each service and location

NOTES:

- Within each tab, be sure to scroll to the top left corner of each spreadsheet and work your way to the right such that you are able to find ALL tables that are relevant to the workflow. Important information could be hidden by the fact that certain rows/columns are frozen so that they are seen at all times and can potentially hide information that needs to be dragged into view.
- Cells where User Input are not allowed are locked and will present an error if one attempts to manually input a value.