ANALYTICS SUITE FOR A GLOBAL HEALTH ORGANIZATION

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OVERVIEW

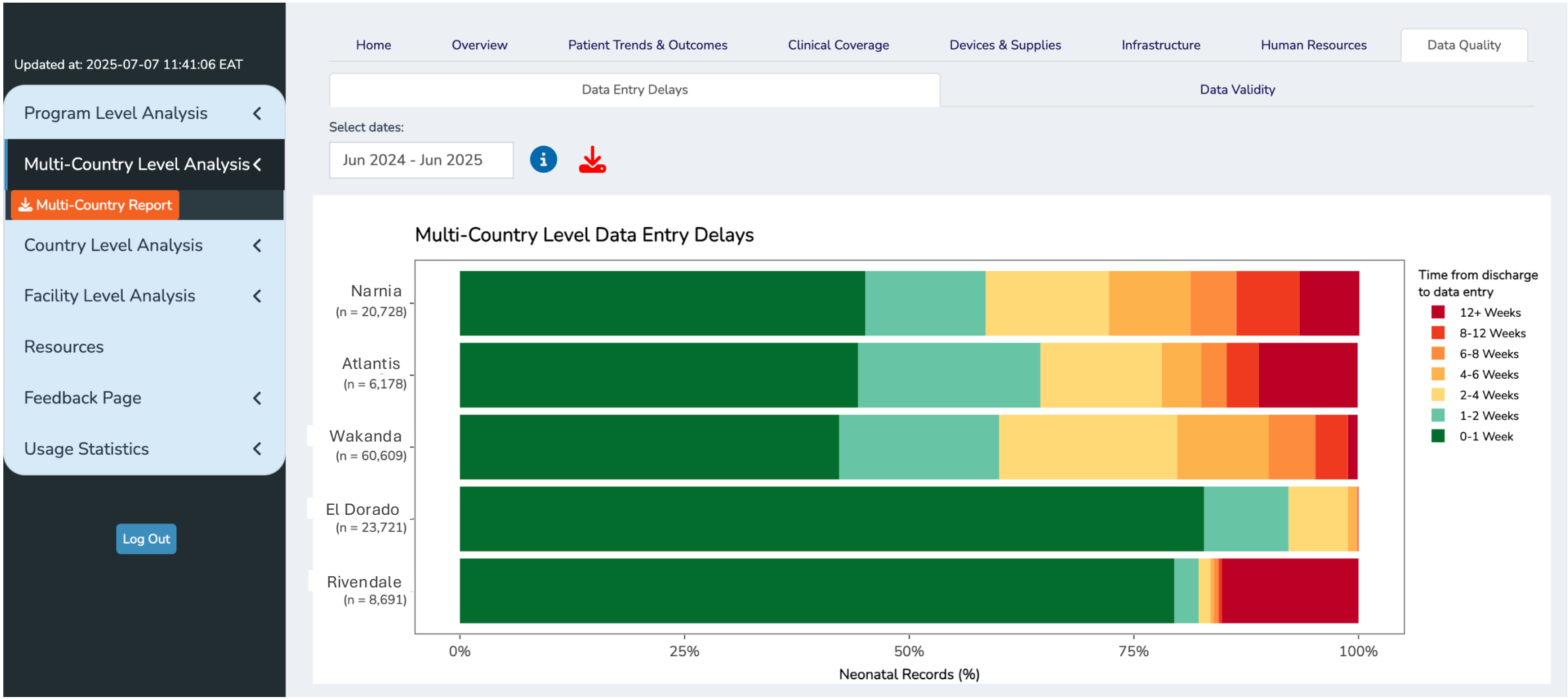
- **Purpose:** one analytics tool that can be used by all stakeholders to inform progress on neonatal mortality reduction goals
- **My Role:** product founder, top individual contributor, and team lead
- **Timeline:**
  - Founded the product in December 2022
  - Launched for internal organization users in April 2023
  - Launched for all stakeholders in September 2023
- Users logged in more than 35K times in the first year
- Product contained more than 100 data visualizations
- R, R Shiny, HTML, CSS

PRODUCT STRUCTURE

All data was visualized in 4 levels of aggregation to meet the needs of a diverse set of stakeholders

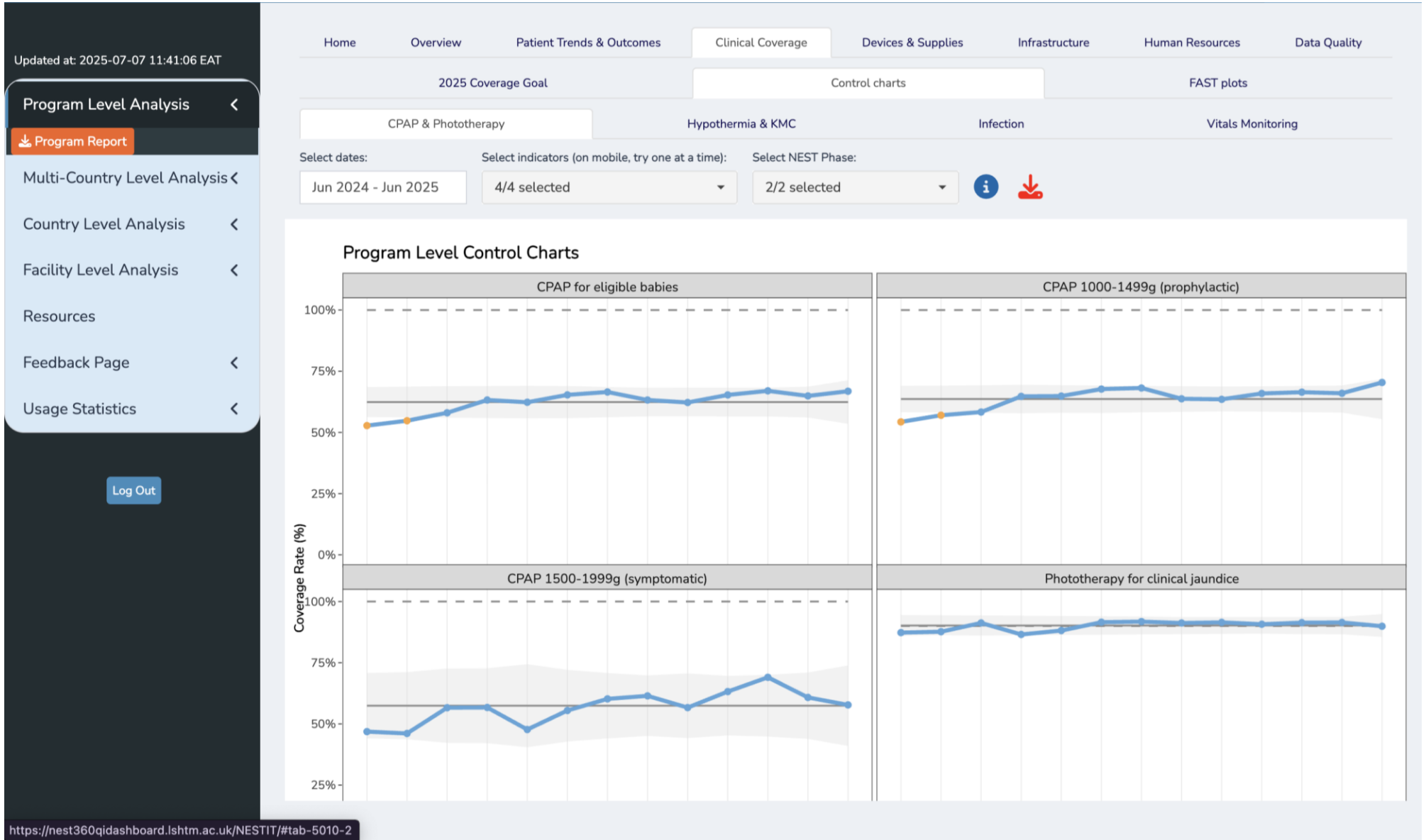
Level	Description	Stakeholders / Users
Program	Highest level of aggregation, used to assess overall progress on program-wide goals	Funders Internal organization members
Multi-Country	Compare aggregated data from hospitals in each country	Funders Internal organization members
Country	Compare NICUs within a country	Ministry of Health officials Internal organization members
Individual Neonatal ICU	Zoom in on one NICU at a time with the highest level of detail	Doctors, nurses, biomedical engineers, data clerks, and administrators employed at 70+ hospitals Internal organization members

Working with resource limited hospitals meant frequent data entry delays. This section gave users context about the data quality of other visualizations and helped hospital data teams track progress on quality goals.

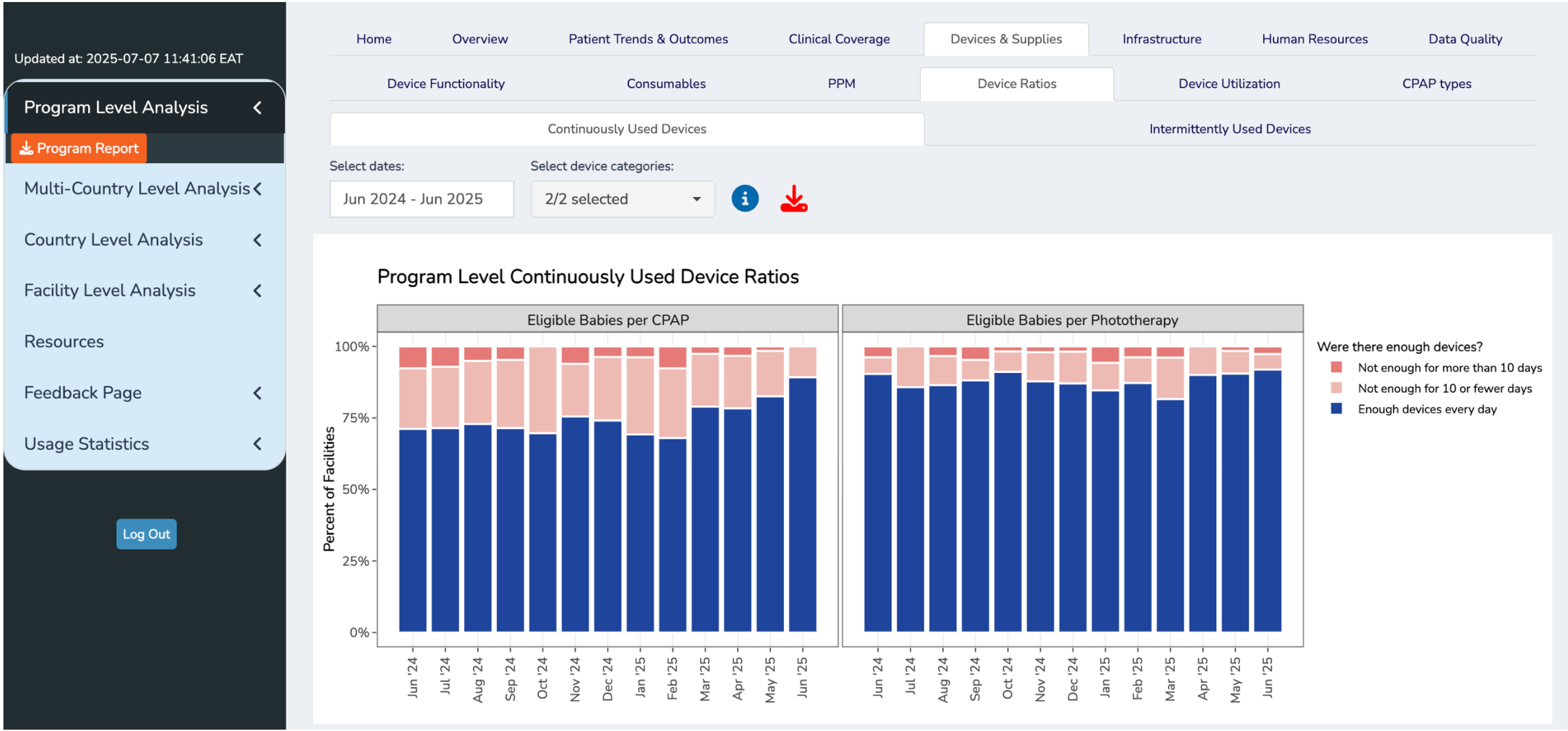


Country names have been concealed to honor data sharing agreements

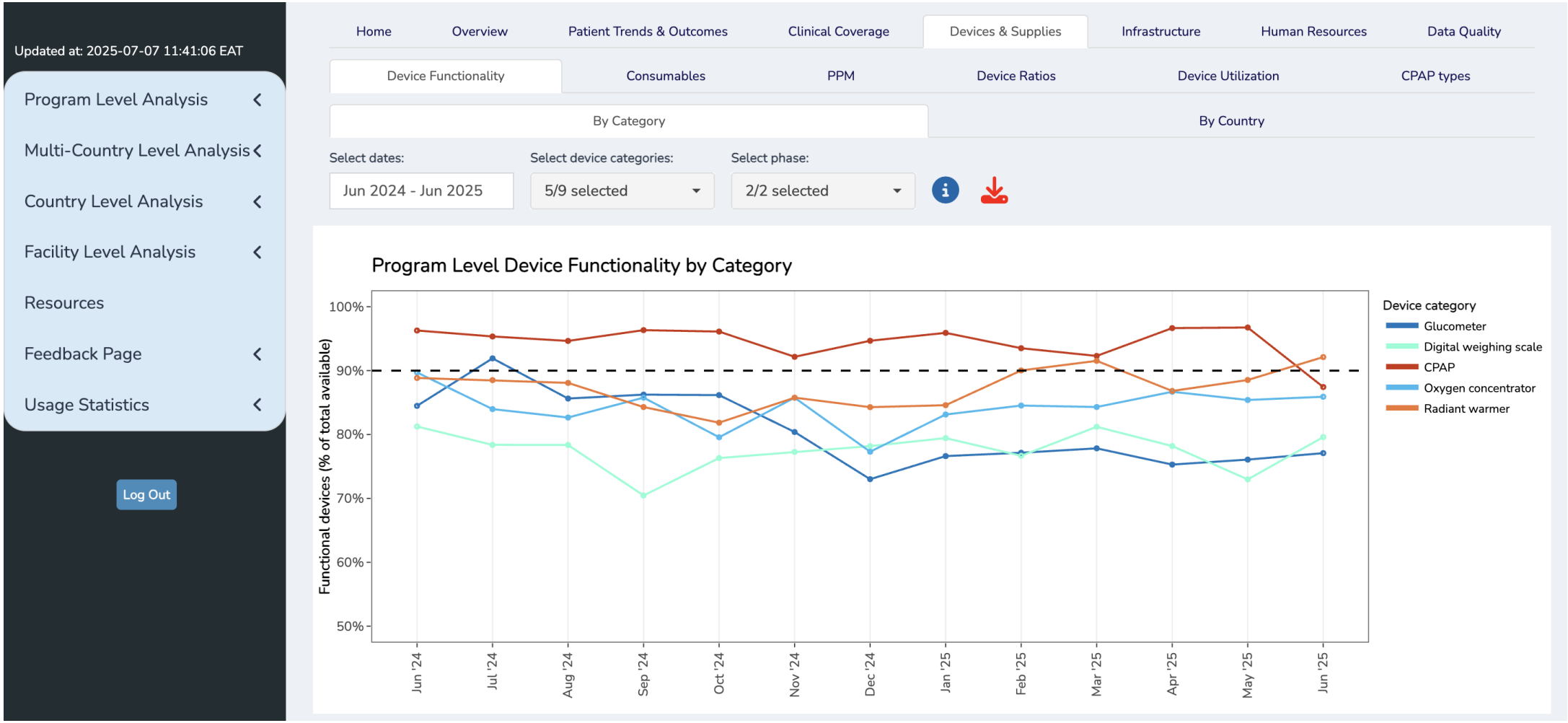
Clinical coverage data was displayed for key indicators at all levels. The Program Level used QI Control Charts.



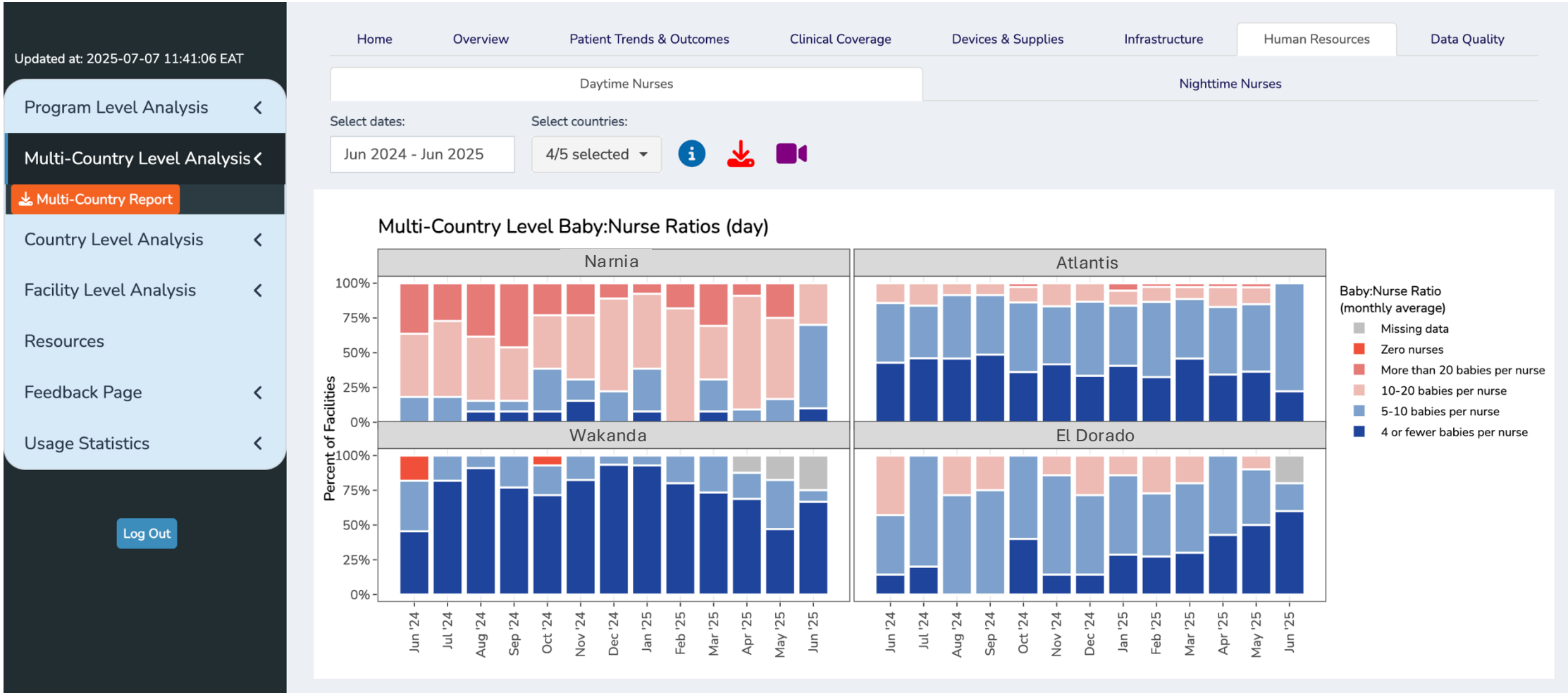
A top concern was whether there were enough CPAP and Phototherapy devices to serve all babies who needed them in the NICU, as well as how often there was a shortage. We worked with neonatologists to built an algorithm that identified babies in need and estimated how long they would need the device.



Device functionality was also important. We scraped data from biomedical technician logs and quality improvement exercises to track functionality of key medical devices.



Nurse shortages were a major problem in all NICUs in the program. Our HR Ratio visualizations were frequently used to help country and hospital level stakeholders advocate for more staff.



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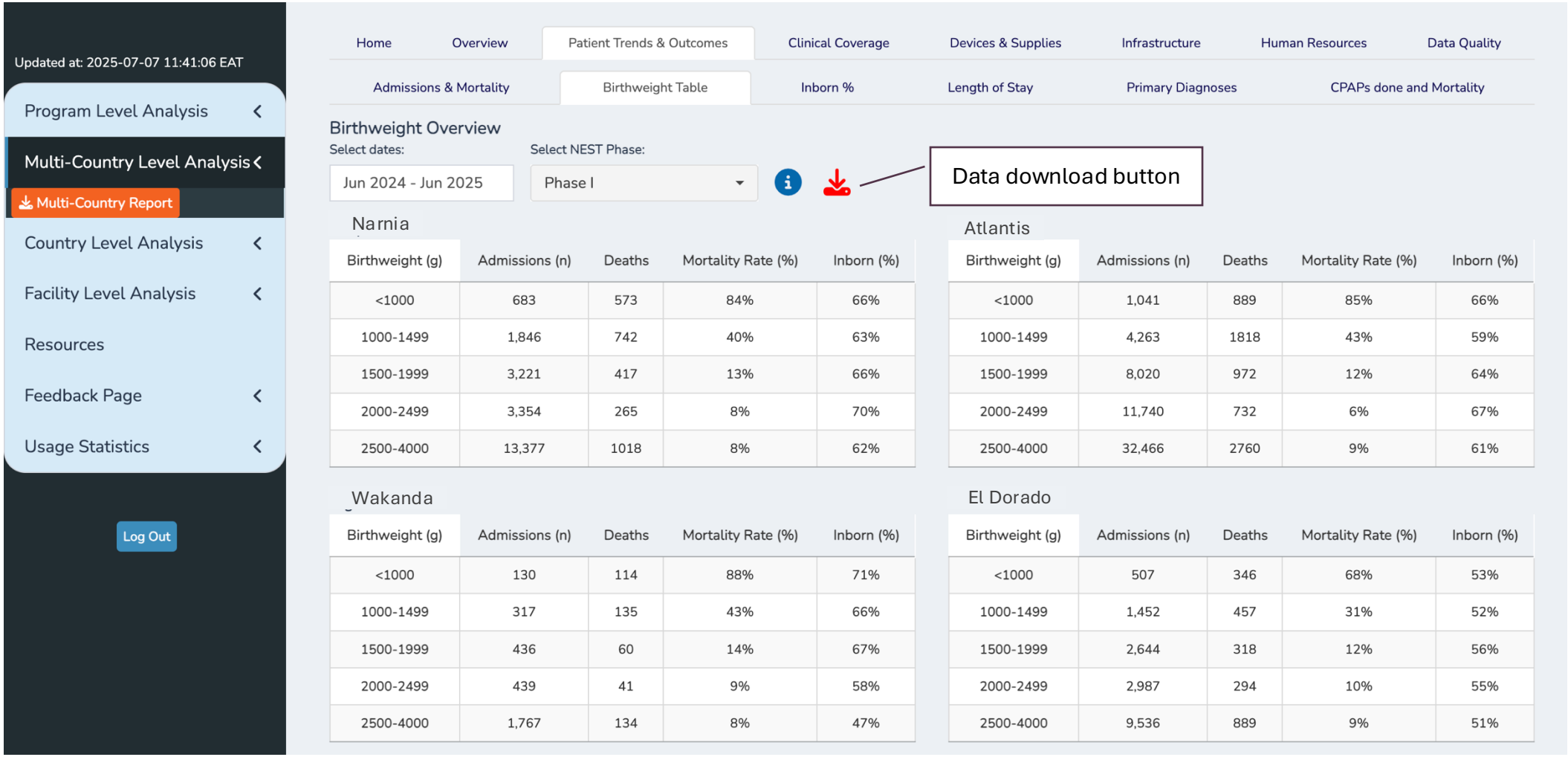
Users often needed tabular data in addition to visualizations. We answered with tables, then later a data download feature on every visualization. Users could filter data to their needs, then download it as a CSV.



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ADDITIONAL FEATURES