

| Stage | Sample Data Competencies | Pyramid level | Actions | Common Roles | Collaborators you will likely encounter |
|-------------------|--|---------------|--|--------------------------|---|
| Novice | Recording basic data values | Data | Collect/Input data. | Nurse's Aides | Medical Assistants |
| | Interpreting these values against their established standard (for example HR of 100 is high, BP of 80/60 is low). | Data | Review reports. | Patient Care Technicians | |
| | Uses knowledge and decision support (such as reference ranges and Best Practice Alerts) to identify outliers and critical values. | Data | Able to identify critical data points for their patients. | Nurses | |
| Advanced Beginner | Using entry-level automation, where appropriate, to collect data easily. | Data | Import data from devices. | Nurse's Aides | Medical assistants |
| | Utilize EMRs to facilitate patient care duties (for example, "Patients ready for discharge" reports, "Patients with X condition" reports, etc.). | Data | Run routine reports. | Patient Care Technicians | |
| | Begins synthesizing and understanding standard reports that assist with bedside care. | Information | Able to evaluate reports and understand how they apply to their patients | Nurses | |

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| Competent | Seeks deeper understanding about patient care, using data to drive outcomes | Data / Information | Run templated/parameterized and ad hoc reports. | Nurses | Report Analysts |
| | Understands when more data and information are needed to fill care gaps | Information | Able to identify when new reports are needed. | Charge Nurses | Data Analysts/Analytics |
| | Moves from ability to care for an individual patient to being able to understand populations of patients. | Information | Able to understand how data applies to their patient and begins to understand systemic issues. | Informatics Nurses | Data Stewards Administration |
| | Understands what data points are driving clinical understanding and where these data originate in the course of patient care | Information | Knows from where data is sourced. | | Providers/Patient Care Team Researchers Quality |
| Proficient | Understands how reporting systems work and how data is collected at the bedside and stored in databases. Can synthesize all of this knowledge to build new reports. | Knowledge | Create custom reports. | Nurses | Data Analysts |
| | Utilizes knowledge to influence care on a scale above an individual patient. | Knowledge/Wisdom | Understands a bigger picture and how data impacts the population. | Informatics Nurses | Data Governors |
| | Can talk about expected random differences | Knowledge/Wisdom | Understands statistical modeling. | | Data Scientists |

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|--------|---|------------------|--|--------------------|---|
| | observed vs. standard deviation in a population | | | | |
| | Knowledge of healthcare use of Artificial intelligence and Machine Learning | Knowledge/Wisdom | Utilizes ML and AI tools available to interpret data and/or generate text that interprets data and turns it into information and wisdom. | | Report Analysts Data Analysts/Analytics Providers/Patient Care Team Researchers Quality |
| Expert | Understands what data drives outcomes and can reduce this to individual metrics and combine these individual metrics into a dashboard that drives change. | Knowledge/Wisdom | Can create KPIs and Dashboards. | Informatics Nurses | Data Scientists |
| | Understands how to build algorithms and test them to ensure meaningful outputs are generated. | Knowledge/Wisdom | Programs Artificial Intelligence and Machine Learning algorithms and tests them for accuracy. | | Analytics |
| | Can utilize data, statistical, and visualization skills to create actionable deliverables. | Wisdom | Creates Analytics that provide actionable information to the bedside clinicians and administration. | | Researchers |