Operationalizing Educational Data at the Brody School of Medicine

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BACKGROUND

The Office of Data Analysis and Strategy (ODAS) was formed in the fall of 2018 as part of the Division of Academic Affairs at the Brody School of Medicine (BSOM).

The mission of ODAS is to provide a means to analyze data and communicate outcomes informing educational strategies for the school of medicine. It was founded on the vision to be the platform for the actualization of strategic, data-centric innovation impacting the communities of eastern North Carolina and beyond.

The functions of the new office are two-fold: 1) provide data-related consultation services across the institution, and 2) identify and implement innovative solutions for current and future data needs.

ODAS will manage academic data and provide strategies for data management, program planning and data dissemination for BSOM, including needs for accreditation and continuous quality improvement (CQI). Additionally, ODAS will assist in the production of manuscripts, grants and national presentations.

DESCRIPTION

The operationalization of data within the Brody School of Medicine is a complex, multi-faceted endeavor. It will encompass several projects across multiple departments over the next few years.

Completed Initiatives:
- Identified gaps in our traditional approaches to data when compared to other medical schools and academic health centers
- Reorganized reporting structures within Academic Affairs leading to the creation of the Office of Data Analysis and Strategy
- Determined needed operating budget, office space, and positions to support the efforts of ODAS
- Surveyed internal reporting needs and data frameworks of stakeholder groups
- Mapped data workflows from the original, raw data sources, through the processes of refining the data, ending with the delivery of reports or visualizations
- Recruited partnerships with university ITCS to identify needed experts to participate on project teams
- Prioritized initial dashboards based on existing, reliable data structures

Ongoing Initiatives:
- Modeling initial dashboard project from existing prototypes that provide interactive, public-facing dashboards using Microsoft PowerBI
- Utilizing current ECU Operational Data Store (ODS) as the starting point for the Educational Data Warehouse to accelerate the implementation of future data efforts
- Implementing plans to launch a website to communicate key metrics that support the mission of BSOM
- Partnering with administrative leadership to establish needed refinements to CQI
- Cooperating with the Office of Medical Education to produce 25 reports for Three-Year Course and Clerkship Review process
- Cooperating with the Office of Diversity Affairs to develop and publish annual Departmental Diversity Snapshot reports
- Acting as "Honest Broker" for principle investigators that are studying effects of educational interventions on student performance
- Identifying project management solutions to aid in the prioritization of future requests for data retrieval and reporting

Future Initiatives:
- Refine current processes across Academic Affairs that will lead to the development of reliable reporting mechanisms
- Consultation with individual stakeholders will lead to the development of datamarts, reports, and visualizations that will improve operations throughout BSOM
- Establish processes for data governance that will facilitate future data efforts

STATEMENT OF NEED

At the Brody School of Medicine, the changing landscape related to educational data, combined with traditional, local approaches to data ownership, have led to opportunities for operationalizing data and processes with the aim to improve decision making and performance. The following needs have become evident: the use of business intelligence practices (including data analysis and data visualization), project management implementation, the presence of data governance structures and guidelines, communication practices, data processing workflows, and data infrastructure. These improvements are not just for accreditation and CQI needs, but also for scholarship and development of strategies to enhance the academic environment.
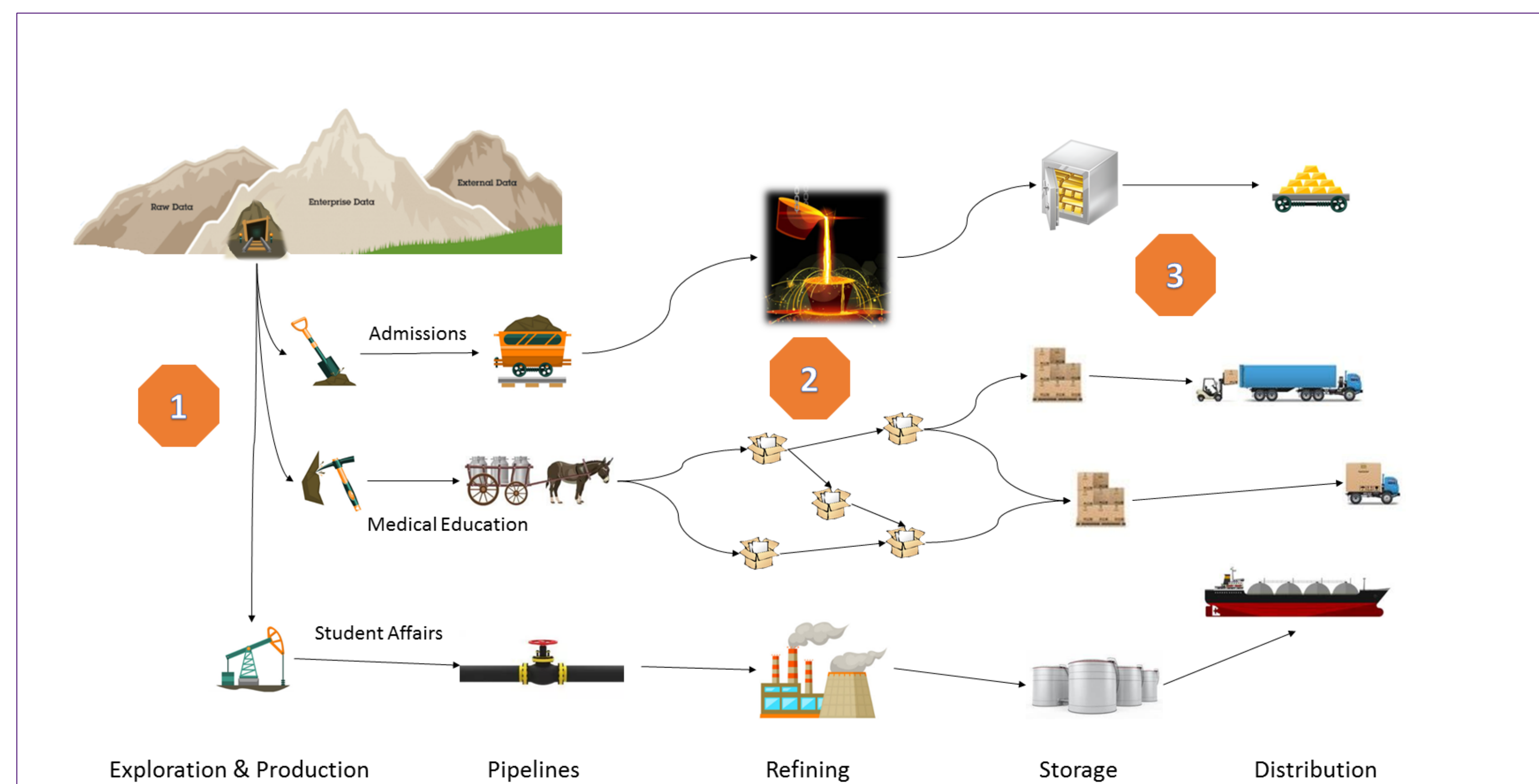
Problems with Current Model:
1. Each stakeholder group is responsible for exploring and producing usable data from mountains of raw data.
2. Processes for refining data are unique to user groups and often lack structure or documentation.
3. Reporting burden may be duplicated and ad hoc reporting requests may be overwhelming.
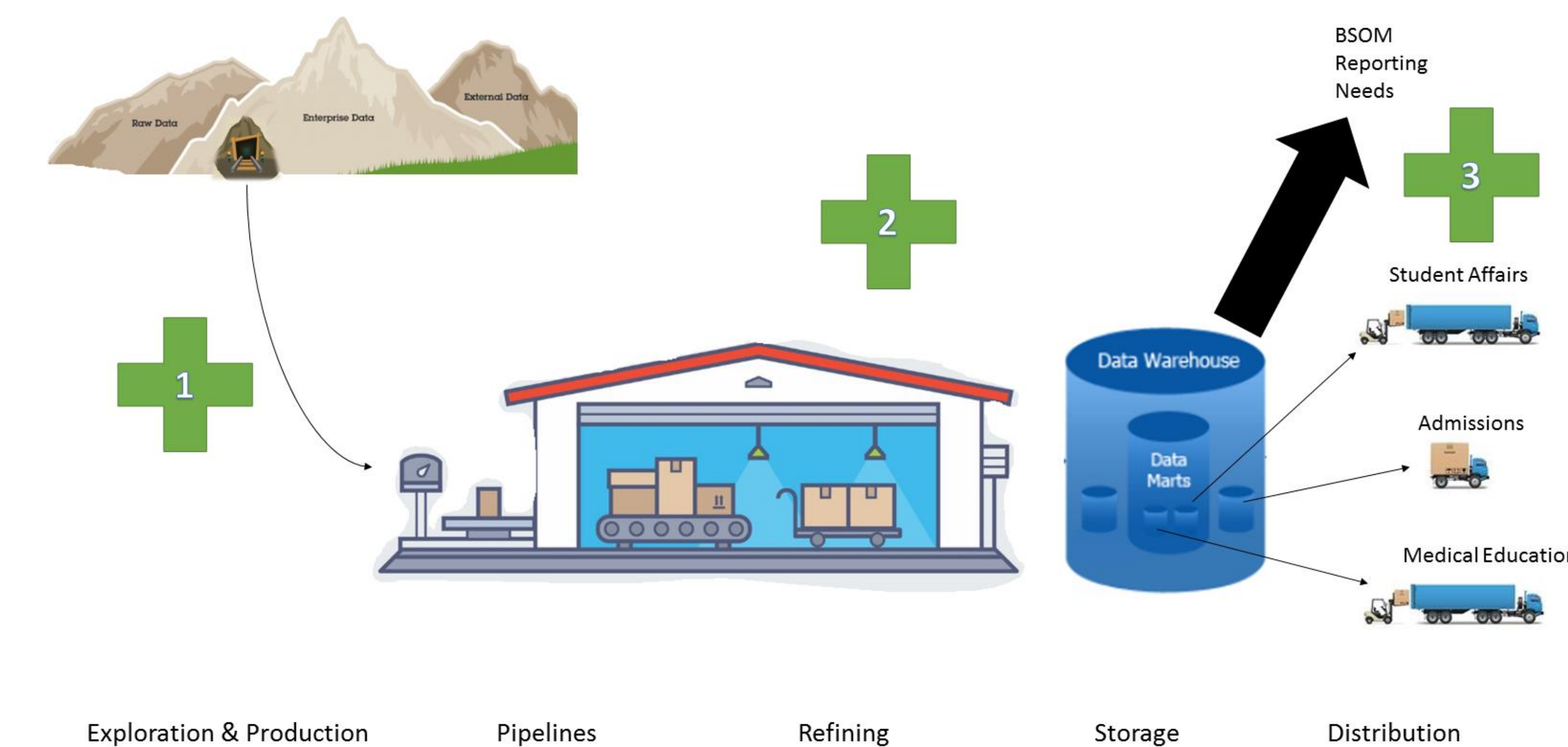
Proposed Solutions with New Model:
1. Mapping data sources simplifies exploration and allows for automation of data production.
2. Efficient workflows and accurate data governance ensure that data is delivered on time and refined reliably.
3. The development of datamarts will improve reporting turnaround time, accuracy, and communication.

CURRENT PROJECT STATUS

Accomplishments (high-level results associated with this reporting period):
1. The project team has identified the development priority for report/dashboards: 1) AAMC GQ, 2) NBME/USMLE, 3) Assessment of Residency Performance by Graduates, 4) Match Results and Specialty Choices, 5) Student Advancement and Graduation Rates. These dashboards will be developed over the next 4-6 weeks (early/mid May completion target)
2. The project team has spent a considerable amount of time defining the data requirements, data sources/locations, and conducting analysis for importing into the ODS for future use

Plans (What tasks will be the focus over the next reporting period):
1. The project team will continue to analyze the data and its sources to develop an import structure that will support the BSOM, long-term goals for reporting
2. Completion of the AAMC GQ Dashboard
3. Gather NBME datasets for importing into ODS, completion of the NBME Dashboard

POTENTIAL IMPACTS

Beyond the immediate reach of current projects, a successful launch of ODAS will impact the Brody School of Medicine at multiple facets of its operations.

Strategic Level:
- dashboards that enable BSOM to track performance metrics against school-wide strategic goals
- refined processes for continuous quality improvement across the academic continuum at BSOM

Tactical Level:
- systems of information delivery that allow users to quickly visualize their data.
- establishment of data-driven decision-making processes

Operational Level:
- workflows that increase efficiency
- data governance structures that ensure the quality and integrity of data are maintained
- student performance dashboards that inform learners in real-time

The Office of Data Analysis and Strategy will measure success through the application of operational data workflows that increase communication between stakeholders leading to the increased production of scholarly products. The design of future products and an evaluation plan will be determined by a multi-stakeholder group to be formed in the immediate future.

ACKNOWLEDGEMENTS