

Integration Success:

**Combining Three Data Systems into One
to Gain Unprecedented Visibility**

MJ Darling & Phil Watson

DIUC22

Integration Success: Combining Three Data Systems into One to Gain Unprecedented Visibility



Our journey to combine healthcare data across 3 major vendor systems for a longitudinal record to improve analytics and standardize metrics

Agenda

- ▶ About Us
- ▶ CHKD Background
- ▶ Data Strategy
- ▶ Landscape
- ▶ Our Integration Journey
- ▶ Successes/Lessons Learned

About Us



MJ Darling

- 30+ years of experience with hospitals, IHDN, healthcare insurance plans, providers and vendors
- Supported Epic, Cerner, Siemens, and NextGen products
- 10+ years consulting
- Passion for data analytics and improved outcomes
- New Grandma!



Phil Watson

- 12 Years Experience in Healthcare IT as Business Analyst, Systems Analyst, Data Analyst, and Product Owner
- 2.5 years with CHKD as a Data Analyst / Developer
- 5 years consulting
- Fun facts:
 - I have two dogs (Lab and Lab/Basset-hound)
 - I have a son and one on the way (due October 2022)
 - I am a baseball coach and avid baseball fan

About **Children's Hospital of The King's Daughters**

- Children's Hospital of The King's Daughters is a 266-bed, freestanding children's hospital in Norfolk, VA established in 1961
- Newly opened 14-story Children's Pavilion, pediatric mental health hospital and outpatient center
- New, state of the art NICU opened in 2020
- Stats:
 - 4,100 Employees
 - 8,500 Admissions per year
 - 60,500 Emergency visits per year
 - 105,000 Urgent Care visits per year
 - 630,000 Clinic visits per year

 **Health • Healing • Hope**
for all children



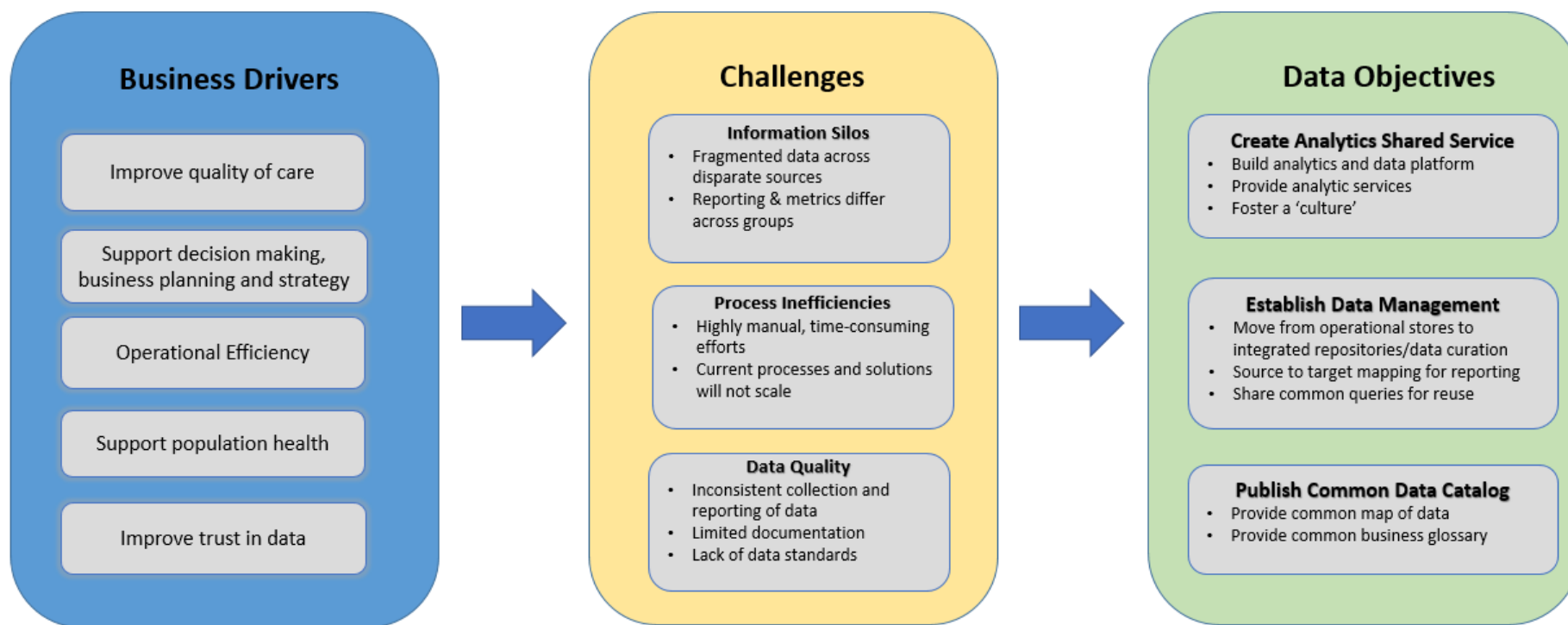
About the **Information Services Division**

- IS Division:
 - Biomedical
 - AV
 - Telecomm
 - Application Support
 - Technical Support
 - Data Analytics (started 2019)
- Analytics Shared Service Model
 - One stop for reporting, analytics, data stores, warehouses, dashboards, and data governance
 - Collaborate with Nursing and Ambulatory Informatics



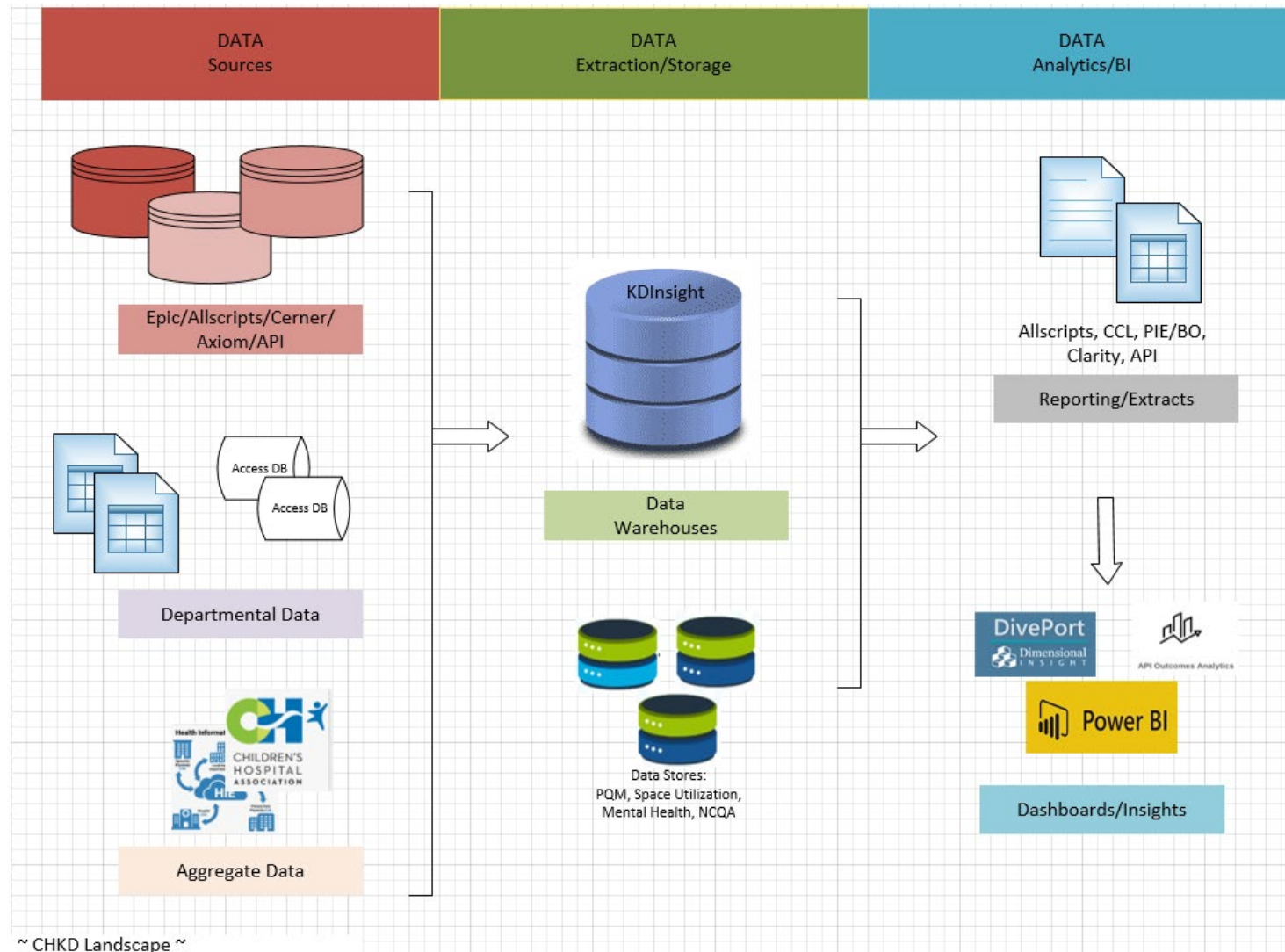
Data Strategy

Alignment with Business Drivers



Source: [himformatics](#) assessment 2018

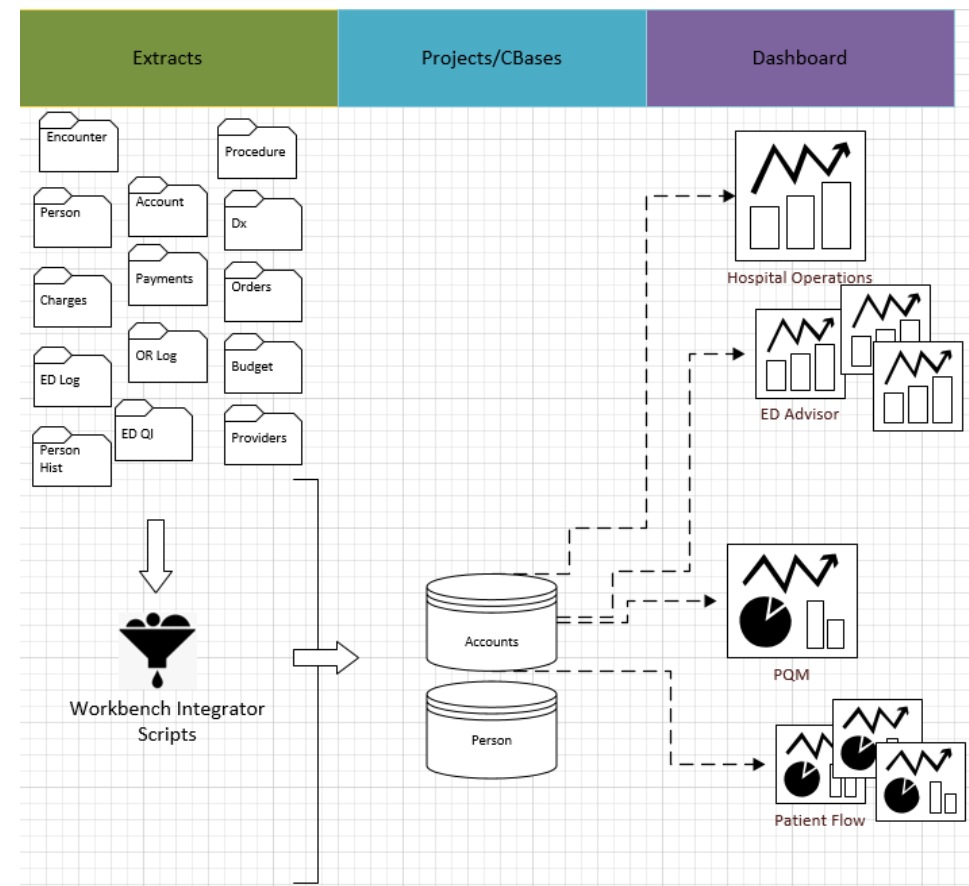
Landscape & Vision



Our Integration Journey

Tackle integration of data between Epic, Allscripts and Cerner

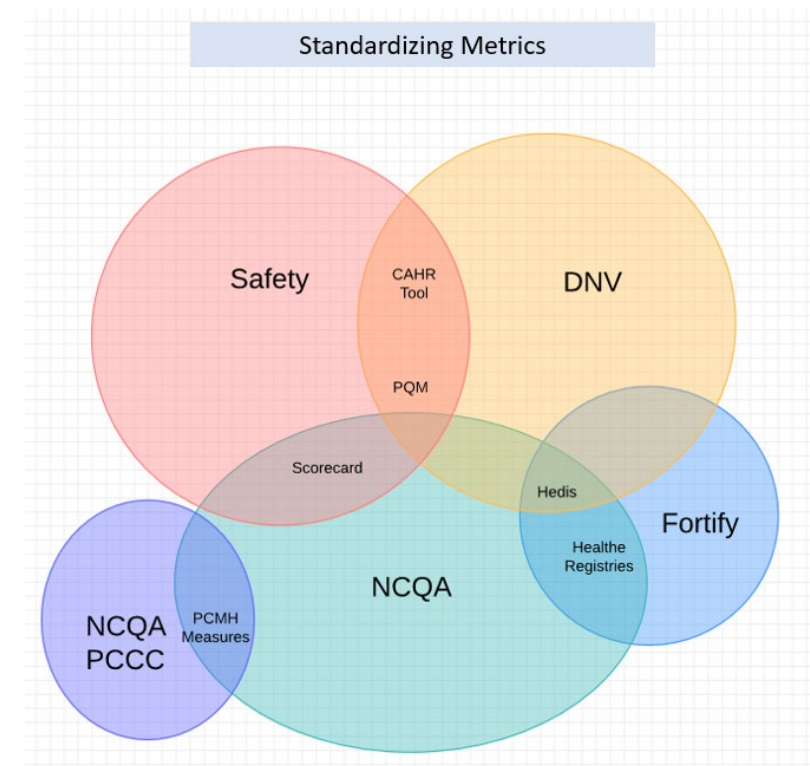
- Develop a data model that accomplished two goals:
 - Over-arching warehouse for all analytics
 - Support Dimensional Insight applications
- Currently maintain 23 data extract feeds and 39 million records to support two Dimensional Insight applications:
 - Hospital Operations Dashboard
 - ED Advisor Dashboard



Our Integration Journey

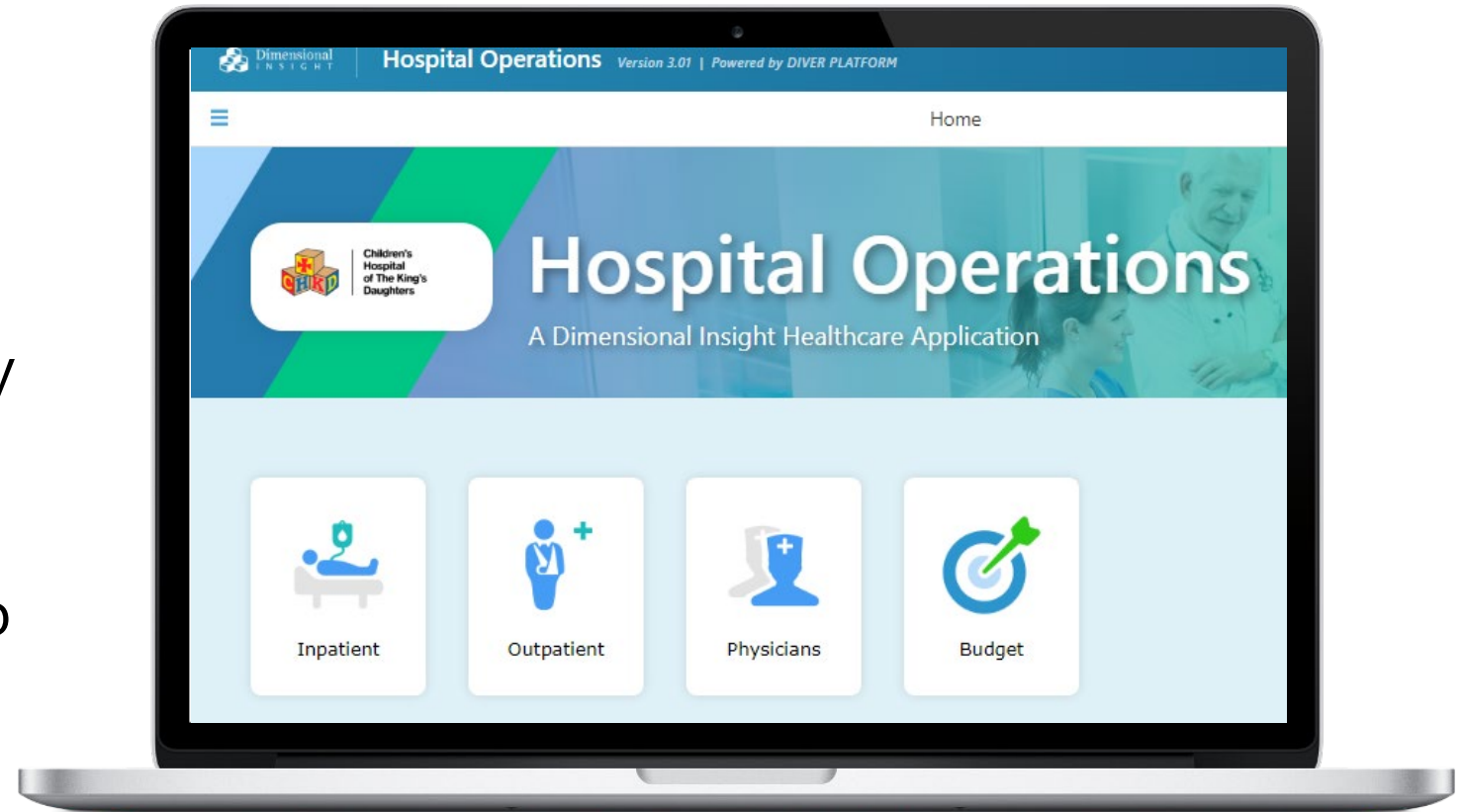
Tackle integration of data between Epic, Allscripts and Cerner

- Continue to expand our warehouse to support all analytics including regulatory and quality reporting needs



Successes

- Published our first executive dashboard, Hospital Operations dashboard
- Customized the Hospital Operations dashboard to display monthly actual vs. budgeted measures (see upcoming slide)
- Added/modified data extracts to support CHKD business needs



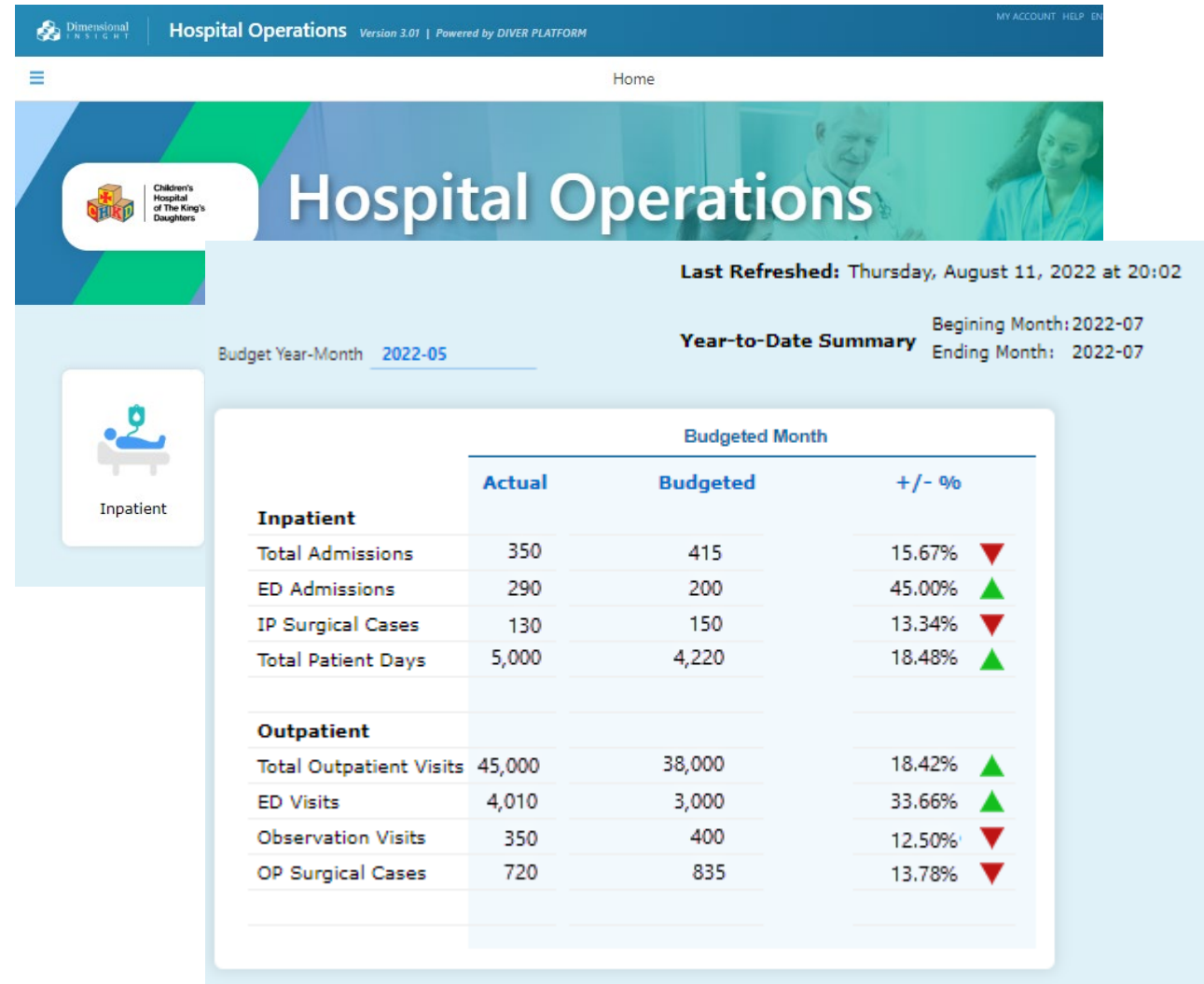
Successes

- Used knowledge and experience with Hospital Operations dashboard to “pave the way” for additional applications (i.e. ED Advisor)
- Added “Trend” view to ED Advisor Dashboard (pictured)



Successes (Budget Enhancement)

- Requested by the CEO
- Used the Dimensional Insight Design Library to create “Budget” menu item
- Accessed from the Home screen
- Compares budgeted volumes to actual measures values for a given month



Successes (Budget Enhancement)

- Accomplished by:
 - Ingesting a yearly budget file and use .build scripts to transform and output a budget cBase
 - Loaded cbase into our "data_sources_build" folder for measure factory
 - Added measures to measure factory to calculate "Budgeted" measures

1

Start budget file export for kdinsight.build X

budget file export for kdinsight.build

text budget file → calc date_form → output budget file

3

```
category "MV Budget Volumes" {
measure "Budget Total Admissions" `sum(value("B
measure "Budget Total Admissions % Change" `(measu
measure "Budget IP Cases" `sum(value("Budget Amount
measure "Budget IP Cases % Change" `(measure("IP S
measure "Budget OP Cases" `sum(value("Budget Amount
measure "Budget OP Cases % Change" `(measure("OP S
measure "Budget Total Patient Days" `sum(value("Bud
measure "Budget Total Patient Days % Change" `(mea
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measure "Budget Total Outpatient Visits % Change" `
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measure "Budget ED Visits % Change" `(measure("ED
measure "Budget ED Visits Admitted" `sum(value("Bud
measure "Budget ED Visits Admitted % Change" `(mea
measure "Budget Observation Visits" `sum(value("Bud
measure "Budget Observation Visits % Change" `(mea
measure "Budget OP Surgical Cases" `sum(value("Budg
measure "Budget OP Surgical Cases % Change" `(meas
}
```

2

Explorer

Find...

mf_hospital

- cbases
- client files
- config
- cplans
- data
- data_sources
- data_sources_build
 - _temp_k3ku4kv0.02c.txt
 - accounts.cbase
 - adjustments.cbase
 - charges.cbase
 - dailycensus.cbase
 - diagnosis.cbase
 - edlog.cbase
 - edorders.cbase
 - edqi.cbase
 - major_volumes_budget.cbase
 - orig.cbase
 - payments.cbase
 - procedures.cbase
 - TATs.cbase
- divebooks
- diveplans

Challenges

- Learn new software
- Incorporate data from multiple healthcare systems
- Understand business process
- Establish owners of the data

Lessons Learned

- Not all EMR data-sets are created equal
- Business owner input and process review is vital to success
- Always keep the department goals in mind when making decisions

What's Next

- Surgery Advisor
- Increase utilization of the dashboards
- Fulfill ad-hoc data requests and regulatory data submissions (e.g. PQM) from our data warehouse

Thank you!