From Complexity to Clarity: Transforming Healthcare Economic Intelligence

Work Summary

I translated a complex spreadsheet-based process into an intuitive digital application that provides actionable financial insights for healthcare executives.

Responsibilities

- Experience strategy
- Financial Modeling Translation
- Rapid prototyping
- Product design

Timeline & Team

Over 6 weeks, I collaborated with our internal Market Access Partner, Client's Product Manager and Business Intelligence, Regulatory Submissions, Engineer, and QA

Outcome

The digital solution provided hospital decision-makers an accessible tool to explore financial impacts across different healthcare scenarios.

Jazz Pharmaceuticals manufactures Vyxeos, a specialized treatment for acute myeloid leukemia (AML). Unlike typical medications, Vyxeos is a unique product purchased and held in hospital inventory before being administered to patients.

Limited face time with hospital decision makers, combined with the intricate cost-benefit analysis of Vyxeos, created significant challenges for Jazz Access and Reimbursement Managers in communicating the product's comprehensive value.

- Remote work environments demanded digital tools that could replace in-person sales interactions and enable comprehensive information sharing.

- Ineffective visualization of financial and clinical data hindered meaningful conversations about treatment value

By converting complex spreadsheets into an intuitive digital application, Area Reimbursement Managers (ARMs) gained the dynamic presentation tool they needed to drive engagement. The result was exceeding sales expectations across target accounts through data-driven value demonstration.

Increased Sales
Sales exceeded target goals by **16%** generating an additional **$10.5M**

Real-Time Results
Decision-makers had instant access to answers of their "what if" scenarios

Smart Planning
Facilitated hospitals' optimization of contracts based on their unique patient needs

Delivered a lightweight, FDA-compliant budget analysis tool in just 6 weeks, combining accuracy and professionalism to empower financial negotiations.

DAY 1

Onboarding Workshop

- Collaborated with stakeholders to review the existing spreadsheet and processes.

WEEK 1

Initial Mapping

Audited the spreadsheet to create low-fidelity frame flows for stakeholders.

Consulted with engineering to draft a lightweight technical approach.

WEEK 2

Wireframe & Prototype

Enhanced wireframe fidelity and created a non-computational prototype of the application flow.

WEEKS 3-4

Calculation Translation

Analyzed spreadsheet formulas and translated them into JavaScript-compatible mathematical equations.

MVP Testing Version

Collaboration with Engineer to build a lightweight testing version.

WEEKS 5-6

Visual Design

Designed a clean, professional UI tailored for business needs.
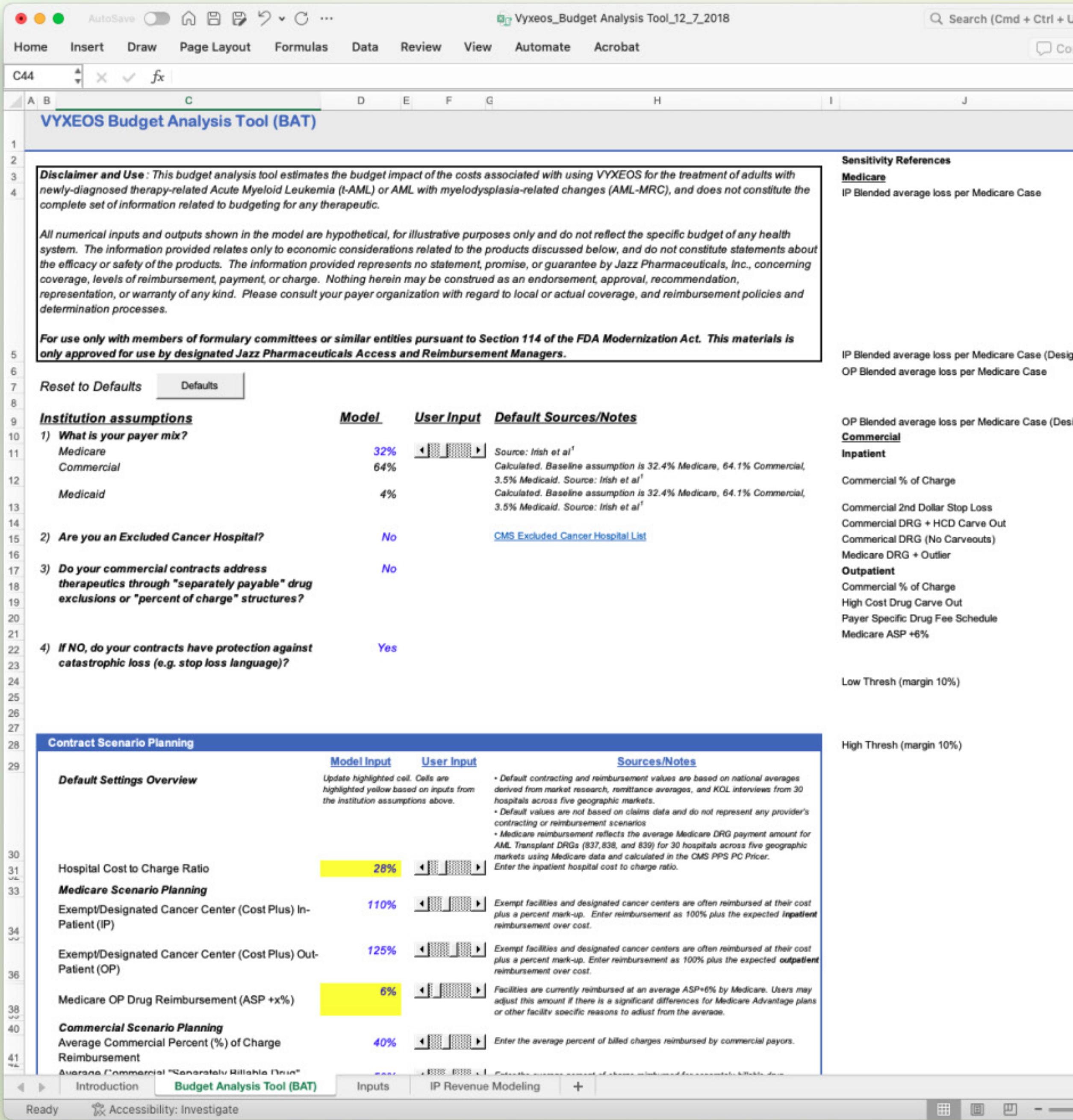
Final Development

Integrated the final design, and performed end-to-end testing.

Deployed the FDA-compliant tool for ARM use with hospital decision-makers.

I facilitated a collaborative workshop with Market Access Specialists, ARMs, Product Management, and Business Intelligence experts, reviewing the existing financial spreadsheet model, aligning project goals.
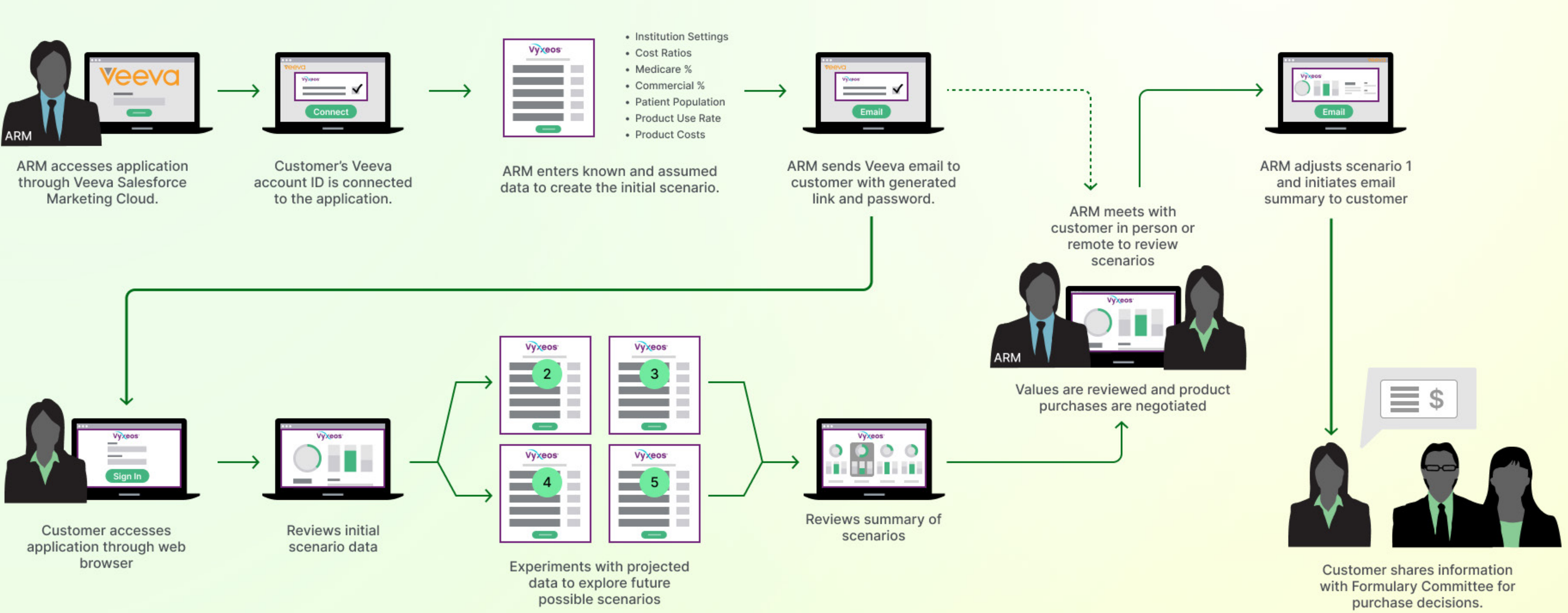
- Aligned on developing a secure and personalized web-based application compliant with regulatory standards.

- Prioritized clear, investigable scenarios presented through a modern, professional, minimalistic design.
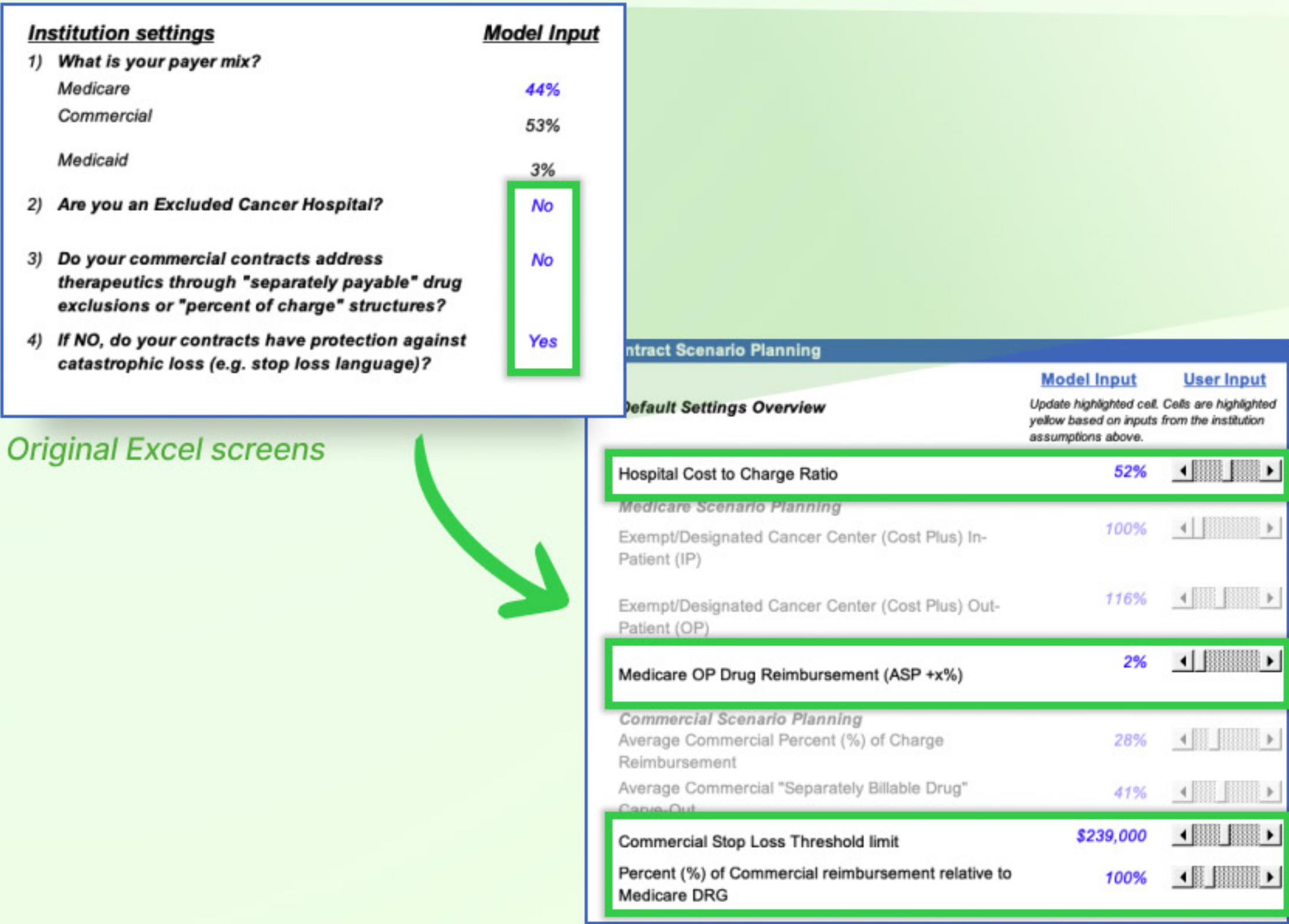
Workshop insights and initial understanding of spreadsheet usage were synthesized into a visual flow, validating stakeholder assumptions.
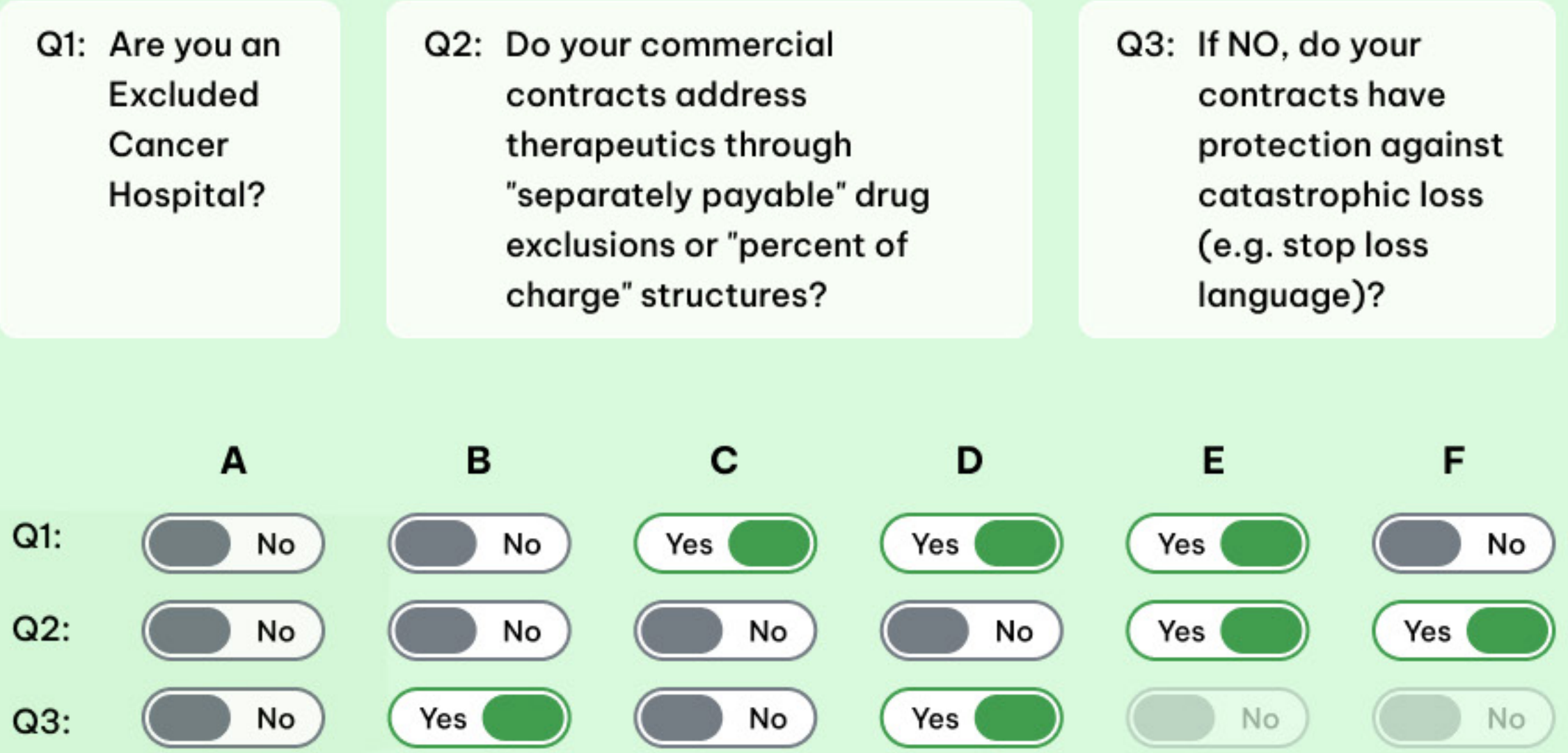

ARM accesses application through Veeva Salesforce Marketing Cloud.

Customer's Veeva account ID is connected to the application.

- Institution Settings
- Cost Ratios
- Medicare %
- Commercial %
- Patient Population
- Product Use Rate
- Product Costs

ARM enters known and assumed data to create the initial scenario.

ARM sends Veeva email to customer with generated link and password.

ARM adjusts scenario 1 and initiates email summary to customer

ARM meets with customer in person or remote to review scenarios

Values are reviewed and product purchases are negotiated

Customer accesses application through web browser

Reviews initial scenario data

2 3

4 5

Experiments with projected data to explore future possible scenarios

Reviews summary of scenarios

Customer shares information with Formulary Committee for purchase decisions.

Decoding the spreadsheet revealed how early inputs forked the ensuing paths, dynamically activating specific fields in the calculations.
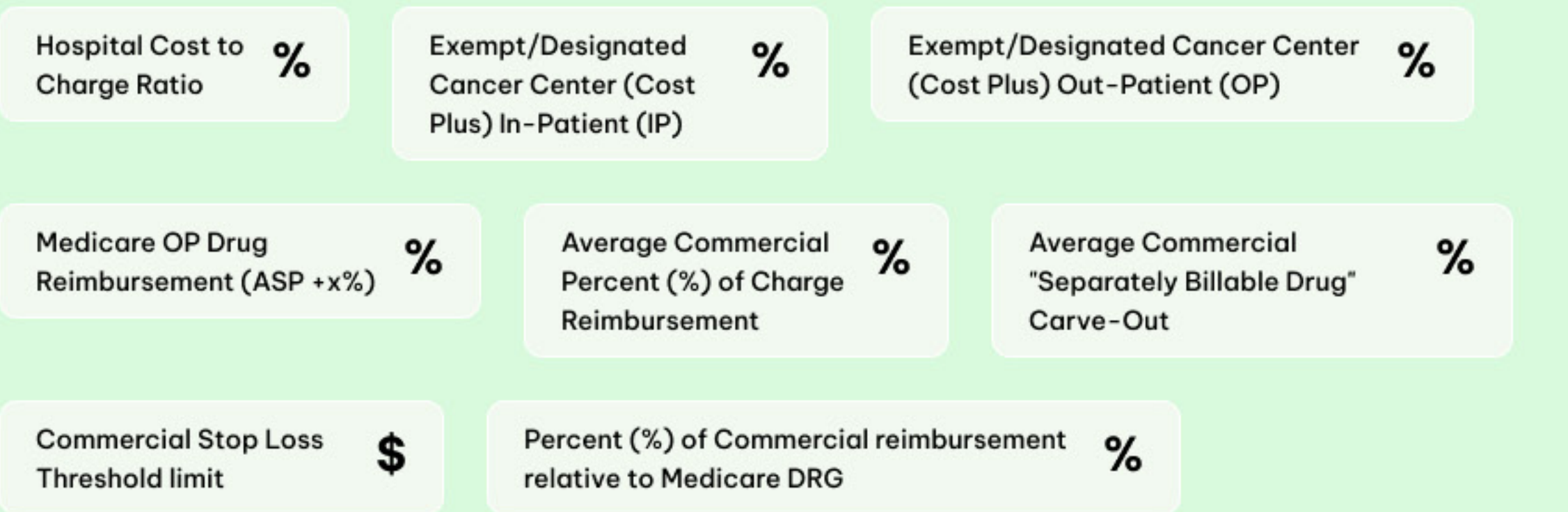
The initial question set created 6 use cases

Q1: Are you an Excluded Cancer Hospital?

Q2: Do your commercial contracts address therapeutics through "separately payable" drug exclusions or "percent of charge" structures?

Q3: If NO, do your contracts have protection against catastrophic loss (e.g. stop loss language)?

	A	B	C	D	E	F
Q1:	No	No	Yes	Yes	Yes	No
Q2:	No	No	No	No	Yes	Yes
Q3:	No	Yes	No	Yes	No	No

Impacting use of data fields:

Hospital Cost to Charge Ratio **%**	Exempt/Designated Cancer Center (Cost Plus) In-Patient (IP) **%**	Exempt/Designated Cancer Center (Cost Plus) Out-Patient (OP) **%**
Medicare OP Drug Reimbursement (ASP +x%) **%**	Average Commercial Percent (%) of Charge Reimbursement **%**	Average Commercial "Separately Billable Drug" Carve-Out **%**
Commercial Stop Loss Threshold limit **$**	Percent (%) of Commercial reimbursement relative to Medicare DRG **%**	

Original Excel screens

Institution settings — **Model Input**

1) **What is your payer mix?**
   - Medicare — **44%**
   - Commercial — 53%
   - Medicaid — 3%

2) **Are you an Excluded Cancer Hospital?** — *No*

3) **Do your commercial contracts address therapeutics through "separately payable" drug exclusions or "percent of charge" structures?** — *No*

4) **If NO, do your contracts have protection against catastrophic loss (e.g. stop loss language)?** — *Yes*

Contract Scenario Planning

Default Settings Overview — Model Input | User Input
Update highlighted cell. Cells are highlighted yellow based on inputs from the institution assumptions above.

	Model Input
Hospital Cost to Charge Ratio	52%
Medicare Scenario Planning	
Exempt/Designated Cancer Center (Cost Plus) In-Patient (IP)	100%
Exempt/Designated Cancer Center (Cost Plus) Out-Patient (OP)	116%
Medicare OP Drug Reimbursement (ASP +x%)	2%
Commercial Scenario Planning	
Average Commercial Percent (%) of Charge Reimbursement	28%
Average Commercial "Separately Billable Drug" Carve-Out	41%
Commercial Stop Loss Threshold limit	$239,000
Percent (%) of Commercial reimbursement relative to Medicare DRG	100%

Low fidelity wireframes were created to establish the site flow and validate high level steps necessary for all use cases.

1.1	Welcome
1.12	Summary
2.1	Institution Data
2.2	Contract Planning
2.2	Patient Volume
3.1	Costs
3.2	Budget Impact
4.1	Scenarios

Vyxeos® Budget Analysis Tool

Welcome

The VYXEOS Budget Analysis Tool has been developed to help your institution determine the potential cost savings that can be achieved by implementing VYXEOS® (daunorubicin and cytarabine) for the treatment of adult patients with newly diagnosed, therapy-related acute myeloid leukemia (t-AML) or AML with myelodysplasia-related changes (AML-MRC).

Email

Password

Forgot password?

Sign In

Vyxeos® Budget Analysis Tool

Scenario 1 -- Net Cost Recovery Impact

Medicare/Medicaid	-$192,000
Commercial	$302,000

$110,000

Review data

Send by Email

Send

Vyxeos Budget Analysis Tool

Scenario 1

What is your payer mix for AML patients?

Medicare	40%
Commercial	50%
Medicaid	10%
Total	100%

Are you an Excluded Cancer Hospital? Yes No

Do your commercial contracts address therapeutics through "separately payable" drug exclusions or "percent (%) of charge" structures? Yes No

If NO, do your contracts have protection against catastrophic loss (eg, stop loss language)? Yes No

Save and Continue   Reset

Vyxeos B

Scenario 1

Contract Scenario Planning

Hospital Cost-to-Charge Ratio 52%

Medicare Scenario Planning

Exempt/Designated Cancer Center (Cost Plus) In-Patient (IP) 100%

Exempt/Designated Cancer Center (Cost Plus) Outpatient (OP) 16%

Medicare OP Drug Reimbursement (ASP +x%) 2%

Commercial Scenario Planning

Average Commercial Percent (%) of Charge Reimbursement 28%

Average Commercial "Separately Billable Drug" Carve-Out 41%

Commercial Stop Loss Threshold limit $239,000

Percent (%) of Commercial Reimbursement Relative to Medicare 100%

Save and Continue

Vyxeos® Budget Analysis Tool

Scenario 1

Patient Volume

Number of AML patients per year in your institution   30

Proportion (%) of all AML patients that are newly diagnosed t-AML or AML-MRC Patients   36%   11 patients/year

Number of patients override   0

Average cycles per patient   1.78

Site of Care for VYXEOS treatment

Percent (%) Inpatient cycles of VYXEOS   73%

Vyxeos® Budget Analysis Tool

Scenario 1

Below are the costs and total cost impact based on your data input.

Wholesale Acquisition Cost (WAC) per vial	$7,983
Average vials per cycle	6
Average cost per cycle	$47,895
Average cycles per patient	1.78

A. Inpatient Non-Drug Costs

AML non-drug costs (with VYXEOS)	$304,000
AML non-drug costs (without VYXEOS)	$419,000

Vyxeos® Budget Analysis Tool

Scenario 1

Estimated Net Cost Recovery Impact

$110,000

Medicare/Medicaid	-$192,000
Commercial	$302,000

Vyxeos B

Scenario 1

Below are the costs and total cos

Wholesale Acquisition Cost (WAC) per

Are you su...
data to d

Yes

A. Inpat

AML non-drug costs (with VYXEOS)

AML non-drug costs (without VYXEOS)

Financial formulas translated into JavaScript-ready documentation delivered actionable insights for development. Clear breakdowns of complex calculations ensured a smooth and efficient engineering handoff.

Hard coded values.
H5.1 - Wholesale Acquisition Cost (WAC) per vial
H5.2 - Average vials per cycle
H5.3 - Average cost per cycle
H5.4 - 1.78 (Average cycles per patient)

Value ranges for each question:

R3.1 Hospital Cost-to-Charge Ratio
0 - 100; Increments of 1; Default: 28%

R3.2 Exempt/Designated Cancer Center (Cost Plus) Inpatient (IP)
100 - 125; Increments of 1; Default: 110%

R3.3 Exempt/Designated Cancer Center (Cost Plus) Outpatient (OP)
100 - 140; Increments of 1; Default: 125%

R3.4 Medicare OP Drug Reimbursement (ASP +x%)
0 - 50; Increments of 1; Default: 6%

InPt = IF (R4.2 = 0) { (Output 4.1 * 1.78 * H4.3) * (R2.1 + R2.3) }
ELSE { (R4.2 * 1.78 * H4.3) * (R2.1 + R2.3) }

OutPt = IF (R4.2 = 0) { (Output 4.1 * 1.78 * H4.4) * (R2.1 + R2.3) }
ELSE { (R4.2 * 1.78 * H4.4) * (R2.1 + R2.3) }

CinPt = IF (R4.2 = 0) { (Output 4.1 * 1.78) * R2.2 * H4.3 }
ELSE { (R4.2 * 1.78) * R2.2 * H4.3 }

CoutPt = IF (R4.2 = 0) { (Output 4.1 * 1.78) * R2.2 * H4.4 }
ELSE { (R4.2 * 1.78) * R2.2 * H4.4 }

vDelta73Cost = [(Regimen Cost * Average Cycles per Patient) - (7+3 Cost)]
Bolded values can change over time.
Regimen Cost = (Wholesale Acquisition Cost "WAC" per vial) * (Avg. vials per cycle)
where Wholesale Acquisition Cost "WAC" per vial = **8221.98**
&
Avg. vials per cycle = **6**

Average Cycles per Patient = **1.78**

7+3 Cost = **1908**

vOpDeltaCost = [(Regimen Cost * Average Cycles per Patient) + (OP Non-Drug Cost)]

OP Non-Drug Cost = **3500**

K13 =
roundTo1000

(ROUND((57000*R3.8),-3)) +
IF(((55000/R3.1)+(vDelta73Cost/R3.1))>R3.7) {
  = (ROUND(((((55000/R3.1)+(vDelta73Cost/R3.1))-R3.7)*R3.5),-3) } - vDelta73Cost - 55000 } * .5
ELSE = 0

+

(ROUND((30000*R3.8),-3)) +
IF(((28000/R3.1)+(vDelta73Cost/R3.1))>R3.7) {
  = (ROUND(((((28000/R3.1)+(vDelta73Cost/R3.1))-R3.7)*R3.5),-3) } - vDelta73Cost - 28000 } * .25
ELSE = 0

+

(ROUND((18000*R3.8),-3)) +
IF(((17000/R3.1)+(vDelta73Cost/R3.1))>R3.7) {
  = (ROUND(((((17000/R3.1)+(vDelta73Cost/R3.1))-R3.7)*R3.5),-3) } - vDelta73Cost - 17000 } * .25
ELSE = 0

K14 =
roundTo1000
((ROUND(57000 * R3.8),-3) + (ROUND((vDelta73Cost / R3.1) * R3.6),-3)) - vDelta73Cost - 55000) * .5
+
((ROUND(30000 * R3.8),-3) + (ROUND((vDelta73Cost / R3.1) * R3.6),-3)) - vDelta73Cost - 28000) * .25
+
((ROUND(18000 * R3.8),-3) + (ROUND((vDelta73Cost / R3.1) * R3.6),-3)) - vDelta73Cost - 17000) * .25

Outputs
Inpatient Non-Drug Costs
Output 5.1 - AML non-drug costs (with VYXEOS)
= IF (R4.2 = 0) { Output 4.1 * H4.3 * 38,750 }
ELSE { R4.2 * H4.3 * 38,750 }

Output 5.2 - AML non-drug costs (without VYXEOS)
= IF (R4.2 = 0) { Output 4.1 * 38,750 }
ELSE { R4.2 * 38,750 }

Output 5.3 - Inpatient cost impact
= Output 5.1 - Output 5.2

Outpatient Non-Drug Costs
Output 5.4 - AML non-drug costs (with VYXEOS)
= IF (R4.2 = 0) { Output 4.1 * (1-H4.3) * 3,500 }
ELSE { R4.2 * (1-H4.3) * 3,500 }

Output 5.5 - AML non-drug costs (without VYXEOS)
This value will always be 0 because final multiplier is hardcoded 0
= IF (R4.2 = 0) { Output 4.1 * 3,500 * 0 }

Round value to 1000th

VAR = INPUT

R = Range; H = Hard Value; Q = Option

R3.2 = Exempt/Designated Cancer Center (Cost Plus)
         Inpatient (IP)

H5.1 = Wholesale Acquisition Cost (WAC) per vial

Q2.1 = Are you an Excluded Hospital?

VAR= FUNCTION()

K18 = (ROUND((1908 / R3.1) * R3.5),-3) +
         (ROUND((vDelta73Cost / R3.1) * R3.5),-3) -
         vOpDeltaCost

K19 = 4000 + (ROUND((vDelta73Cost / R3.1) *
         R3.6),-3) - vOpDeltaCost

Output = FUNCTION()

Output 6.2 - Commercial (D87) =

IF (Q2.2 = "Yes") { CinPt*((K12+K14)/2) +
CoutPt*((K18+K19+K20)/3) }
  ELSE IF (Q2.2 = "No" && Q2.3 = "Yes") { CinPt*(K13) +
CoutPt*(K21) }
  ELSE (Q2.2 = "No" && Q2.3 = "No") { CinPt*(K15) +
CoutPt*(K21) }

With functional development underway, I designed a lightweight, business-first UI emphasizing data exploration while aligning to brand standards
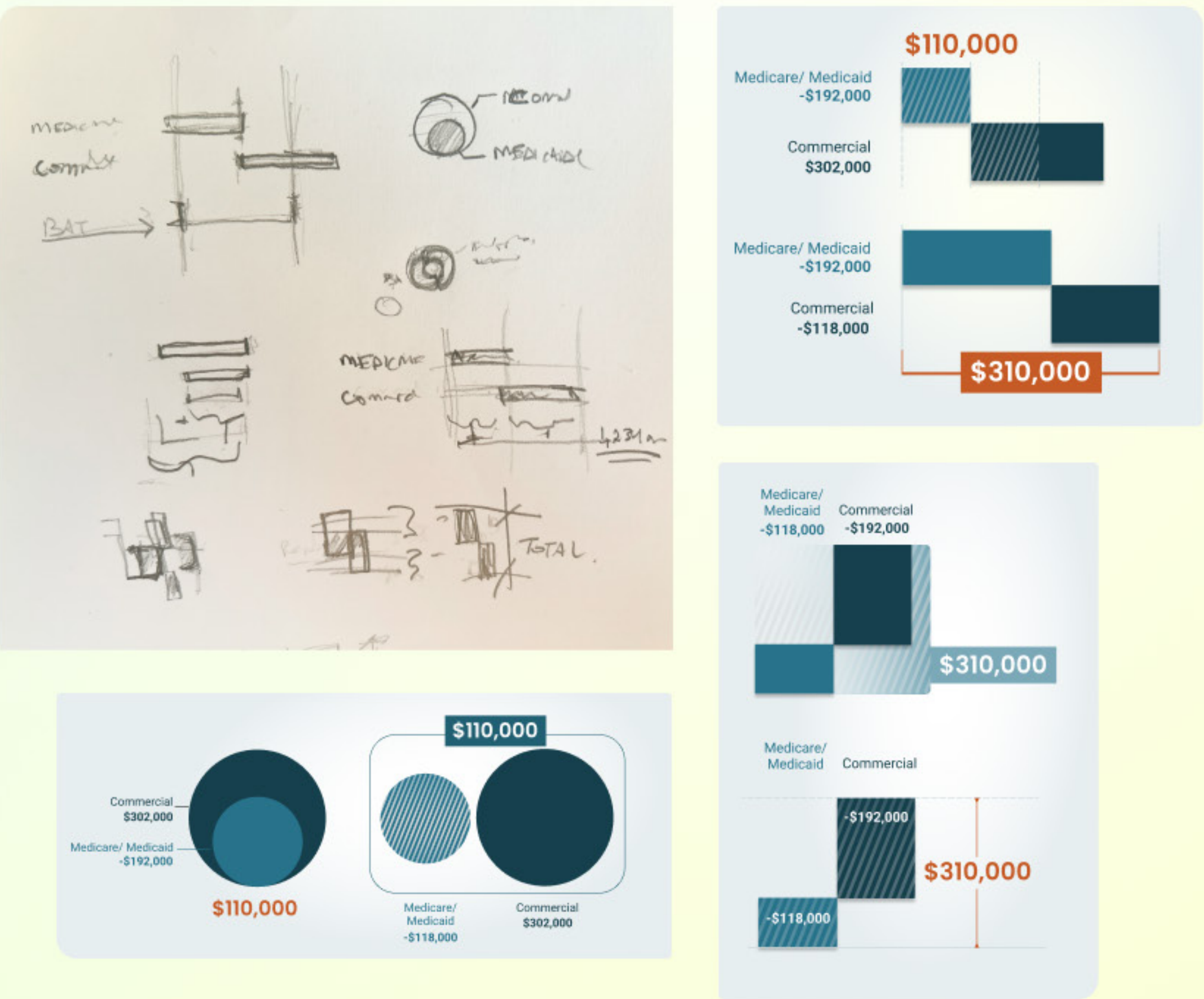
Data input

Style studies

The final summary screen needed a smart, flexible approach to handle diverse outputs, offering real-time insights and easy PDF export for users.

Results

Data visualization studies

The application transformed complex healthcare cost modeling into an intuitive digital tool, enabling data-informed decisions and advancing sales outcomes.

Success

Enhanced Decision-Making

Empowered users with real-time "what-if" scenarios, simplifying complex financial analyses.

Improved Sales Impact

Enabled ARMs to deliver compelling, data-driven presentations, leading to increased sales.

Efficient Collaboration

Successfully aligned cross-functional teams, including engineering, regulatory, and market access specialists, to deliver an FDA-compliant solution.

Areas to Improve

Future Scalability

Additional features like advanced scenario tracking and reporting tools could enhance long-term value.

Mobile Accessibility

The application was effective on desktops and tablets but lacked mobile optimization for quick access.

Questions?