Healthcare KPI Dashboard - Complete Definitions Guide

> **Document Version:** 1.0
>
> **Last Updated:** 2025-10-22
>
> **Data Source:** Database_CarePortals.xlsx
>
> **Dashboard URL:** View Dashboard

Table of Contents

Summary Statistics

These high-level metrics appear at the top of the dashboard and provide quick insights into the business.

1. Total Customers

What it is: The total number of unique customers in the system.

What it means: Represents the complete customer base that has ever interacted with the business.

How it's calculated:

```
data.customers.length
```

Data Source: `customers` sheet

Quality Indicator: Good if > 10 customers

2. Active Subscriptions

What it is: The count of currently active subscription records.

What it means: Indicates the number of subscriptions that are currently generating recurring revenue.

How it's calculated:

```
data.subscriptions.filter(s => s.Status === 'active').length
```

Data Source: `subscription.active` sheet

Filter Criteria: `Status = 'active'`

Quality Indicator: Higher is better; indicates healthy recurring revenue base

3. Total Orders

What it is: The cumulative count of all orders ever placed.

What it means: Represents the total transaction volume across all time.

How it's calculated:

```
data.orders.length
```

Data Source: `order.created` sheet

Quality Indicator: Good if > 10 orders

4. Total Revenue

What it is: The sum of all successful payments.

What it means: Gross revenue generated before refunds.

How it's calculated:

```
data.payments.reduce((sum, payment) => {
  return sum + (parseFloat(payment.amount) || 0);
}, 0)
```

Data Source: `payment_succesful` sheet

Formula: Sum(payment.amount) for all payments

Display Format: Currency (USD) with comma separators

Snapshot Metrics (Time-Independent)

These metrics represent the current state of the business and are not filtered by date range.

5. Active Patients

Section: Clinical & Patient Success

What it is: Count of subscriptions with active status.

What it means: Number of patients currently enrolled in treatment programs.

How it's calculated:

```
data.subscriptions.filter(s => s.Status === 'active').length
```

Data Source: `subscription.active` sheet

Filter: `Status = 'active'`

Quality Indicator: 'good' quality

Clinical Significance: Represents active patient census

6. Realized CLV (All Customers)

Section: Growth & Revenue Metrics

What it is: Average total revenue generated per customer across all customers.

What it means: Historical customer value based on actual transactions, not predictions.

How it's calculated:

```
// Step 1: Group orders by customer and sum revenue
const customers = {};
data.orders.forEach(order => {
  const customerId = order.customer_id;
  if (!customerId) return;

  const amount = parseFloat(order.total_amount) || 0;
  if (!customers[customerId]) {
    customers[customerId] = { totalRevenue: 0 };
  }
  customers[customerId].totalRevenue += amount;
});

// Step 2: Calculate average
let totalRevenue = 0;
let customerCount = 0;

Object.keys(customers).forEach(customerId => {
  totalRevenue += customers[customerId].totalRevenue;
  customerCount++;
});

const realizedCLV_all = customerCount > 0 ? totalRevenue / customerCount : 0;
```

Formula: `Sum(order.total_amount per customer) / Total Customers`

Data Sources: `order.created` sheet (order.total_amount, customer_id)

Methodology: Sum of all order amounts per customer, averaged across all customers

Quality Indicator: 'good' quality when sufficient data exists

Business Significance: Shows actual revenue per customer relationship

7. Realized CLV (Mature Customers)

Section: Growth & Revenue Metrics

What it is: Average total revenue per customer who has completed their initial prepaid period or cancelled.

What it means: More accurate CLV metric focusing only on customers who have had time to demonstrate their full lifecycle value.

Maturity Criteria:

1. Customer has cancelled subscription, OR
2. Customer has paused subscription = FALSE, AND
3. Number of orders > sale_cycle_duration (prepaid period), OR
4. Number of orders = sale_cycle_duration AND 1+ months since last order

Formula: `Sum(order.total_amount for mature customers) / Count(mature customers)`

Data Sources:

- `order.created` sheet (total_amount, customer_id, created_at)
- `subscription.cancelled` sheet (customer_id)
- `subscription.paused` sheet (customer_id)
- `products` sheet (sale_cycle_duration)

Quality Indicator: 'good' quality when sufficient mature customers exist

Business Significance: More accurate predictor of long-term customer value than all-customer CLV

8. Mature Customer Ratio

Section: Growth & Revenue Metrics

What it is: Percentage of customers who have reached maturity status.

What it means: Indicates how much of the customer base has been around long enough to demonstrate full lifecycle behavior.

Formula: `(Mature Customers / Total Customers) * 100`

Display: Percentage with 2 decimal places

Breakdown Displayed:

- Count of mature customers
- Total customer count

Business Significance: Higher ratio means more reliable CLV projections

9. Renewal Rate

Section: Clinical & Patient Success

What it is: Percentage of mature customers who placed at least one paid renewal order after their prepaid period.

What it means: Measures customer retention and satisfaction after the initial commitment period ends.

Formula: `(Renewed Customers / Mature Customers) * 100`

Renewed Customer Definition: A mature customer who has at least one paid order (amount > 0) after their prepaid period

Data Sources:

- `order.created` sheet (customer_id, total_amount, created_at, product_id)
- `products` sheet (sale_cycle_duration)
- `subscription.cancelled` sheet
- `subscription.paused` sheet

Display: Percentage with 2 decimal places, plus counts

Quality Thresholds:

- Excellent: ≥ 80%

- Good: 60-79%
- Needs Improvement: 40-59%
- Low: < 40%

Business Significance: Critical retention metric; higher renewal rates indicate product-market fit and customer satisfaction

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Timed Metrics (Date Range Sensitive)

These metrics are calculated based on the selected time period (daily, weekly, monthly, quarterly, annually, all-time, or custom range).

10. New Patient Enrollments

Section: Growth & Revenue Metrics

What it is: Count of unique customers whose first checkout order occurred in the selected date range.

What it means: New customer acquisition for the period.

Filter Criteria:

- `order.source = 'checkout'` (excludes renewal orders)
- First order by customer
- Order date within selected range

Formula: `Count(DISTINCT customer_id WHERE first_checkout_order.created_at BETWEEN startDate AND endDate)`

Data Sources: `order.created` sheet (customer_id, created_at, source)

Quality Indicator: Good: > 0 new patients | Low: 0 new patients

Business Significance: Primary growth indicator; tracks acquisition performance

11. Geographic Reach

Section: Operations & Logistics Metrics

What it is: Number of unique US states with orders in the selected date range.

What it means: Market penetration and geographic distribution of the customer base.

Formula: `COUNT(DISTINCT address.province_code WHERE order.created_at BETWEEN startDate AND endDate)`

Data Sources:

- `order.created` sheet (shipping_address_id, created_at)
- `addresses` sheet (address_id, province_code)

Join Condition: `order.shipping_address_id = address.address_id`

Display: Count of states + list of state codes

Business Significance: Indicates market expansion and regulatory compliance scope

12. Monthly Recurring Revenue (MRR)

Section: Growth & Revenue Metrics

What it is: Normalized monthly revenue from all active subscriptions.

What it means: Predictable recurring revenue stream; key metric for subscription businesses.

Formula: `Sum((product.renewal_price * 30) / product.renewal_cycle_duration) FOR active subscriptions`

Normalization: All renewal cycles converted to 30-day months

Data Sources:

- `subscription.active` sheet (Status, ProductID)
- `products` sheet (product_id, renewal_price, renewal_cycle_duration)

Filter: Only active subscriptions

Display: Currency (USD) with 2 decimal places

Business Significance: Core SaaS metric; indicates recurring revenue health

13. Average Revenue Per User (ARPU)

Section: Growth & Revenue Metrics

What it is: Average monthly revenue generated per customer.

What it means: Revenue efficiency metric; shows how much each customer contributes monthly.

Formula: `Average(customer.totalRevenue / customer.monthsActive) across all customers`

Months Active Calculation: `CEILING((lastOrderDate - firstOrderDate) / 30 days)` | Minimum: 1 month

Data Sources: `order.created` sheet (customer_id, total_amount, created_at)

Display: Currency (USD) with 2 decimal places

Business Significance: Used in Predictive CLV calculation; indicates per-customer revenue potential

14. Net Revenue After Refunds

Section: Financial Risk Metrics

What it is: Total revenue minus total refunds.

What it means: Actual realized revenue after accounting for returns and cancellations.

Formula: `Sum(payment.amount) - Sum(refund.amount)`

Refund Rate Formula: `(Total Refunds / Total Payments) * 100`

Data Sources:

- `payment_succesful` sheet (amount)
- `refund.created` sheet (amount)

Display Components:

- Net Revenue (USD)
- Total Payments (USD)
- Total Refunds (USD)
- Refund Rate (%)

Business Significance: True revenue metric; high refund rates indicate product or service issues

15. Payment Success Rate

Section: Financial Risk Metrics

What it is: Percentage of payment attempts that succeeded.

What it means: Payment processing reliability and customer payment method health.

Formula: `(Successful Payments / Total Payment Attempts) * 100`

Successful Payment Criteria: `payment.amount > 0`

Data Sources: `payment_succesful` sheet (amount)

Display: Percentage with 2 decimal places + counts

Quality Thresholds:

- Excellent: > 95%
- Good: 90-95%
- Needs Improvement: < 90%

Business Significance: Indicates payment infrastructure health; low rates suggest need for payment method updates or processor issues

16. Churn Rate

Section: Clinical & Patient Success

What it is: Percentage of subscriptions that were cancelled per month (based on last 90 days).

What it means: Customer attrition rate; inverse of retention.

Formula (90-day): `(Cancellations in last 90 days / Total Subscriptions) * (30 / 90) * 100`

Formula (Fallback): `(All Cancellations / Total Subscriptions) * 100`

90-Day Period: Used for more current churn rate estimate

Data Sources:

- `subscription.active` sheet (Status)

- `subscription.cancelled` sheet (customer_id, last_updated)

Display Components:

- Churn rate (%)
- Active customer count
- Cancelled customer count (90 days)
- Methodology description

Quality Thresholds:

- Excellent: < 5%
- Good: 5-10%
- Needs Improvement: > 10%

Business Significance: Critical retention metric; directly impacts CLV and long-term growth

17. Predictive CLV

Section: Growth & Revenue Metrics

What it is: Estimated total future lifetime value per customer.

What it means: Projected total revenue from an average customer over their entire lifecycle.

Formula: `ARPU / (Churn Rate / 100)`

Example:

- If ARPU = $200/month
- If Churn Rate = 5% per month (0.05)
- Then Predictive CLV = $200 / 0.05 = $4,000

Prerequisites:

- ARPU must be calculated
- Churn Rate must be > 0

Display: Currency (USD) with 2 decimal places, plus formula breakdown

Business Significance: Strategic metric for customer acquisition spend; indicates maximum acceptable CAC (Customer Acquisition Cost)

Note: Returns null if churn rate is 0 (division by zero)

18. Medication Adherence Rate

Section: Clinical & Patient Success

What it is: Percentage of customers enrolled for 90+ days who remain active.

What it means: Clinical success metric; measures patient compliance with treatment.

Formula: `(Adherent Customers / Eligible Customers) * 100`

Eligible Customer: Subscription created 90+ days ago

Adherent Customer: Active status OR completed 90+ days of treatment

Clinical Target: 80% (industry standard)

Data Sources: `subscription.active` sheet (Datetime Created, Status)

Display Components:

- Adherence rate (%)
- Adherent customer count
- Total eligible customer count
- Clinical target (80%)

Quality Thresholds:

- Excellent: ≥ 80%
- Good: 70-79%
- Needs Improvement: < 70%

Business Significance: Clinical effectiveness indicator; correlates with outcomes and retention

19. Order Processing Efficiency

Section: Operations & Logistics Metrics

What it is: Time between order creation and update (processing time).

What it means: Operational speed; how quickly orders move through the system.

Formula: `(order.updated_at - order.created_at) / 3600 seconds`

Metrics Reported:

- Median processing time (50th percentile)
- 90th percentile processing time (P90)
- Sample size (order count)

Time Filters: Only includes orders with 0-168 hour processing time (excludes outliers)

Data Sources: `order.created` sheet (created_at, updated_at)

Unit: Hours with 2 decimal places

Quality Thresholds:

- Excellent: Median < 24 hours
- Good: Median 24-48 hours
- Needs Improvement: Median > 48 hours

Business Significance: Operational efficiency indicator; faster processing improves customer satisfaction

20. Product Performance

Section: Operations & Logistics Metrics

What it is: Revenue and order metrics broken down by product.

What it means: Identifies top-performing products and revenue drivers.

Metrics Per Product:

- Product name
- Total order count
- Active subscription count
- Total revenue (USD)
- Unique customer count

Data Sources:

- `products` sheet (product_id, name)
- `order.created` sheet (order_id, product_id, customer_id)
- `subscription.active` sheet (ProductID, Status)
- `payment_succesful` sheet (order_number, amount)

Join Logic:

- `order.product_id = product.product_id`
- `subscription.ProductID = product.product_id`
- `payment.order_number = order.order_id`

Display: Top 5 products by revenue

Business Significance: Product strategy; identifies which offerings drive revenue

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Data Quality Indicators

Quality Assessment

The dashboard assesses data quality and displays it in metadata:

```
function assessDataQuality(data) {
  const quality = {
    customers: data.customers.length,
    orders: data.orders.length,
    payments: data.payments.length,
    subscriptions: data.subscriptions.length,
    overall: 'good'
  };

  if (quality.customers < 10 || quality.orders < 10) {
    quality.overall = 'low';
  }

  return quality;
}
```

Thresholds:

- Overall = 'low' if customers < 10 OR orders < 10
- Overall = 'good' otherwise

Displayed In: Metadata section at bottom of dashboard

Quality Levels by Metric

Each KPI includes a quality indicator:

- **'excellent':** Metric exceeds target thresholds
- **'good':** Metric meets baseline requirements
- **'needs_improvement':** Metric below targets but calculable
- **'low':** Insufficient data for reliable calculation
- **'error':** Calculation failed
- **'no_data':** No data available

Time Period Calculations

Date Range Determination

Monthly (default):

```
startDate = new Date(now.getFullYear(), now.getMonth(), 1); // First day of current month
endDate = new Date(now); // Today
```

Weekly:

```
startDate = new Date(now);
startDate.setDate(now.getDate() - now.getDay()); // Start of current week (Sunday)
startDate.setHours(0, 0, 0, 0);
endDate = new Date(now);
```

Quarterly:

```
const quarterStart = Math.floor(now.getMonth() / 3) * 3; // 0, 3, 6, or 9
startDate = new Date(now.getFullYear(), quarterStart, 1);
endDate = new Date(now);
```

All Time:

```
startDate = new Date('2020-01-01');
endDate = new Date(now);
```

Custom:

```
// User provides dates via date picker
startDate = new Date(startDateISO);
endDate = new Date(endDateISO);
endDate.setHours(23, 59, 59, 999); // Include full end day
```

Data Sources Reference

Spreadsheet Structure

Spreadsheet ID: `1PaCOgNJmKSb2VsJjCMjWpCG-gwrO7uVkuTAFUdrV-_o`

Sheet Names and Key Fields

customers:

- customer_id
- created_at
- email

order.created:

- order_id

- customer_id
- product_id
- total_amount
- created_at
- updated_at
- source ('checkout' or 'renewal')
- shipping_address_id

payment_succesful:

- order_number (joins to order.order_id)
- amount
- datetime

refund.created:

- order_id
- amount
- datetime

products:

- product_id
- name
- renewal_price
- renewal_cycle_duration (days)
- sale_cycle_duration (number of prepaid orders)

subscription.active:

- CustomerID
- ProductID
- Status
- Datetime Created

subscription.cancelled:

- customer_id
- last_updated

subscription.paused:

- customer_id
- last_updated

addresses:

- address_id
- province_code (US state)

Calculation Performance

Caching Strategy

- Cache duration: 6 minutes (360 seconds)
- Cache key format: `enhanced_kpis_{timePeriod}_{startTime}_{endTime}`
- Cache service: Google Apps Script CacheService

Calculation Order

1. Load all data from sheets
2. Calculate CLV metrics (includes ARPU, Churn, Predictive CLV)
3. Calculate Renewal Rate
4. Calculate time-dependent metrics with date filtering
5. Assess data quality
6. Cache results
7. Return JSON to frontend

Metadata Display

At the bottom of the dashboard, the following metadata is shown:

- **Last Updated:** Timestamp of KPI calculation
- **Time Period:** Selected time period (monthly, weekly, etc.)
- **Data Points:** Count of subscriptions, customers, and orders used in calculations

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Dashboard Sections

The KPIs are organized into 5 main sections:

1. **Growth & Revenue Metrics** (📈)
    - New Patient Enrollments
    - Realized CLV (All)
    - Realized CLV (Mature)
    - Mature Customer Ratio
    - MRR

    - ARPU
    - Predictive CLV
2. **Operations & Logistics Metrics** (⚙️)
    - Geographic Reach
    - Order Processing Efficiency
    - Product Performance
3. **Clinical & Patient Success Metrics** (📋)
    - Active Patients
    - Renewal Rate
    - Medication Adherence Rate
    - Churn Rate
4. **Financial Risk Metrics** (💰)
    - Net Revenue After Refunds
    - Payment Success Rate
5. **Order Flow & Stage Analysis** (🔄)
    - Order stage transition times

Pending KPIs (Placeholders)

The following KPIs are displayed as placeholders awaiting data integration:

1. **Customer Acquisition Cost (CAC)** - Requires: Marketing cost data integration
2. **Cancelled Order/Refund Rate** - Requires: Enhanced Stripe tracking
3. **Shipping SLA Compliance** - Requires: Shipping provider API integration
4. **Support Ticket Metrics** - Requires: Support system integration
5. **Average Weight Loss** - Requires: Patient outcome data extraction
6. **Lead-to-Consult Conversion** - Requires: Marketing funnel data integration

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Technical Notes

Google Apps Script Compatibility

- All Date objects converted to ISO strings for transmission
- Uses `google.script.run` for client-server communication
- HIPAA compliance checks on every request

- Audit logging for all dashboard access

Error Handling

- Multiple fallback calculation methods
- Minimal KPI structure returned on critical errors
- Detailed error logging to console
- User-friendly error messages displayed

Browser Compatibility

- Supports all modern browsers
- Mobile-responsive design
- Works with Google Workspace authentication

Version History

Version 1.0 (2025-10-22)

- Initial comprehensive documentation
- All 20+ KPIs documented with formulas
- Data source mapping complete
- Quality indicators defined

> ### Contact & Support
>
> For questions about KPI calculations or dashboard access:
>
> - Check Google Apps Script logs for detailed calculation traces
> - Review data quality indicators in dashboard metadata
> - Contact system administrator for data source issues

End of Document