CareLinkAI Metrics Overview

Introduction

This document provides a comprehensive overview of the analytics and metrics system implemented in CareLinkAI. The metrics dashboard gives administrators visibility into platform usage, growth trends, and key performance indicators.

Access

URL: `/admin/metrics`

Permission Required: ADMIN role only

Non-admin users will be redirected to the dashboard if they attempt to access this page.

Available Metrics

1. User Metrics

These metrics track user growth and distribution across different roles in the platform.

Total Users by Role

- **Description:** Count of all registered users, broken down by role
- **Roles Tracked:**
- FAMILY: Family members searching for care
- CAREGIVER: Individual caregivers/aides
- PROVIDER: Service provider organizations
- OPERATOR: Assisted living facility operators
- ADMIN: Platform administrators
- STAFF: Platform staff members
- AFFILIATE: Affiliate partners

New Users (Last 7 Days)

- **Description:** Number of new user registrations in the past 7 days, by role
- **Use Case:** Track recent growth and identify which user types are signing up most frequently

New Users (Last 30 Days)

- **Description:** Number of new user registrations in the past 30 days, by role
- **Use Case:** Monitor monthly growth trends and compare to previous periods

2. Lead/Inquiry Metrics

These metrics track the inquiry pipeline from families seeking care services.

Total Leads

- **Description:** Total number of active (non-deleted) leads in the system
- **Note:** Excludes soft-deleted leads

Leads by Status

Breakdown of leads by their current status:
- **NEW:** Recently created, not yet reviewed
- **IN_REVIEW:** Being reviewed by operators
- **CONTACTED:** Family has been contacted
- **CLOSED:** Lead successfully resolved
- **CANCELLED:** Lead cancelled or abandoned

Use Case: Identify bottlenecks in the lead follow-up process

Leads by Target Type

Distribution of leads by service type:
- **AIDE:** Inquiries about individual caregivers
- **PROVIDER:** Inquiries about service provider organizations

Use Case: Understand which services are in higher demand

Leads Created (Last 7 Days)

- **Description:** Number of new leads created in the past week
- **Use Case:** Track lead generation velocity

Leads Created (Last 30 Days)

- **Description:** Number of new leads created in the past month
- **Use Case:** Monitor monthly lead volume trends

3. Marketplace Metrics

These metrics provide insights into the supply side of the marketplace.

Active Aides

- **Description:** Number of caregivers/aides who are visible in the marketplace
- **Criteria:** `isVisibleInMarketplace = true`
- **Use Case:** Ensure adequate supply of caregivers

Active Providers

- **Description:** Number of service provider organizations currently active
- **Criteria:** `isActive = true`
- **Use Case:** Monitor provider engagement

Verified Providers

- **Description:** Number of providers who have completed verification
- **Criteria:** `isVerified = true`
- **Use Case:** Track verification progress and quality

Unverified Providers

- **Description:** Number of providers awaiting verification
- **Criteria:** `isVerified = false`
- **Use Case:** Identify verification backlog

Aide Background Check Status

Breakdown of caregivers by background check status:
- **NOT_STARTED:** Background check not initiated

- **PENDING:** Check in progress
- **CLEAR:** Passed background check
- **CONSIDER:** Results require review
- **EXPIRED:** Previous clearance has expired
- **FAILED:** Did not pass background check

Use Case: Monitor compliance and identify caregivers needing attention

4. Engagement Metrics

These metrics track user interaction and platform activity.

Total Messages

- **Description:** Total number of messages sent through the platform
- **Use Case:** Measure overall platform engagement

Messages (Last 7 Days)

- **Description:** Number of messages sent in the past week
- **Use Case:** Track recent activity levels and engagement trends

Dashboard Sections

The admin metrics dashboard is organized into the following sections:

Overview Cards

Four prominent cards showing key totals:
- Total Users (all roles combined)
- Total Leads
- Active Aides
- Active Providers

User Metrics Section

- Table showing users by role with growth indicators
- Columns: Role, Total, Last 7 Days, Last 30 Days

Lead Metrics Section

- Cards showing leads by status
- Cards showing leads by target type
- Trend indicators (7-day and 30-day lead creation)

Marketplace Metrics Section

- Cards for active aides and providers
- Verification status breakdown
- Background check status grid for aides

Engagement Metrics Section

- Total messages count
- Recent message activity (last 7 days)

API Endpoint

GET /api/admin/metrics

Authentication: Required (NextAuth session)

Authorization: ADMIN role only

Response Format:

```json
{
  "users": {
    "totalByRole": {
      "FAMILY": 12,
      "CAREGIVER": 8,
      "PROVIDER": 5,
      "OPERATOR": 3,
      "ADMIN": 2
    },
    "newLast7DaysByRole": {
      "FAMILY": 3,
      "CAREGIVER": 2
    },
    "newLast30DaysByRole": {
      "FAMILY": 8,
      "CAREGIVER": 5,
      "PROVIDER": 2
    }
  },
  "leads": {
    "total": 34,
    "byStatus": {
      "NEW": 10,
      "IN_REVIEW": 8,
      "CONTACTED": 12,
      "CLOSED": 3,
      "CANCELLED": 1
    },
    "byTargetType": {
      "AIDE": 20,
      "PROVIDER": 14
    },
    "createdLast7Days": 12,
    "createdLast30Days": 28
  },
  "marketplace": {
    "activeAides": 10,
    "activeProviders": 7,
    "verifiedProviders": 5,
    "unverifiedProviders": 2,
    "aidesByBackgroundCheck": {
      "CLEAR": 8,
      "PENDING": 2
    }
  },
  "engagement": {
    "totalMessages": 234,
    "messagesLast7Days": 45
  },
  "generatedAt": "2025-12-07T10:30:00.000Z"
}
```

Error Responses:
- `401 Unauthorized` : User not authenticated
- `403 Forbidden` : User lacks ADMIN role
- `500 Internal Server Error` : Server-side error

Performance Considerations

The metrics API uses efficient Prisma aggregation queries:
- `groupBy()` for categorical breakdowns
- `count()` for totals
- Date filtering at the database level

Query Efficiency:
- All queries use database indexes
- No data is loaded into memory unnecessarily
- Aggregations are performed by the database engine

Typical Response Time: < 500ms (depends on database size)

Interpreting the Metrics

Growth Indicators

- Compare 7-day vs 30-day new users to identify acceleration/deceleration
- Monitor which roles are growing fastest

Lead Health

- High "NEW" count → need more operator capacity
- Low "CLOSED" rate → review follow-up processes
- AIDE vs PROVIDER ratio → understand demand patterns

Marketplace Supply

- Low active aides/providers → recruitment needed
- High unverified providers → verification bottleneck
- Background check "PENDING" → follow up on checks

Engagement

- Messages per user (total messages / total users) → engagement depth
- Rising recent messages → healthy activity
- Flat message count → investigate barriers to communication

Security & Privacy

- **No PII Exposed:** All metrics are aggregate counts only
- **RBAC Enforced:** Strict admin-only access
- **Audit Logging:** All metrics requests are logged
- **Soft Deletes Respected:** Deleted leads are excluded from counts

Future Enhancements

Potential additions to the metrics system:

1. **Event Logging System**
   - Real-time activity feed
   - Audit trail for key actions

2. **Time Series Data**
   - Historical trend charts
   - Week-over-week / month-over-month comparisons

3. **Conversion Funnels**
   - Lead-to-hire conversion rates
   - Registration-to-active user rates

4. **Cohort Analysis**
   - User retention by signup period
   - Lead quality by source

5. **Export Functionality**
   - CSV/Excel export
   - Scheduled email reports

6. **Custom Date Ranges**
   - User-selectable date filters
   - Comparison between arbitrary periods

7. **Provider Performance**
   - Average response times
   - Lead-to-customer conversion by provider

8. **Financial Metrics**
   - Revenue tracking
   - Payment processing metrics

Troubleshooting

Dashboard shows "Loading…" indefinitely

- Check browser console for API errors
- Verify user has ADMIN role
- Ensure `/api/admin/metrics` is accessible

Metrics appear incorrect

- Verify database connection
- Check for soft-deleted records
- Review Prisma query logic

Access denied errors

- Confirm user role is ADMIN
- Check NextAuth session validity
- Review RBAC implementation

Related Documentation

- [RBAC Implementation](../src/lib/auth/rbac.ts) (../src/lib/auth/rbac.ts)
- [Provider MVP Summary](../PROVIDER_MVP_IMPLEMENTATION_SUMMARY.md) (../PROVIDER_MVP_IMPLEMENTATION_SUMMARY.md)
- [Family Lead Schema](../family_leads_schema_design.md) (../family_leads_schema_design.md)
- [Demo Flow](./DEMO_FLOW.md) (./DEMO_FLOW.md)

Changelog

v1.0.0 (December 2025)

- Initial metrics dashboard implementation
- User, Lead, Marketplace, and Engagement metrics
- ADMIN-only access with RBAC enforcement
- Efficient Prisma aggregation queries
- Responsive UI with overview cards and detailed sections