# MICHAEL ROYCE TAN, MPH, BSN, RN

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## PROFESSIONAL SUMMARY

Healthcare professional specializing in population health analytics with clinical foundation and developing expertise in R, SAS, and epidemiological research. Seven years of direct patient care experience including care coordination, clinical assessment, and multidisciplinary collaboration combined with MPH training in biostatistics and health data science. Demonstrated ability to translate complex health data into actionable insights by bridging analytical methods with clinical context. Focused on contributing to data-driven healthcare improvement through rigorous analysis and evidence-based recommendations.

## RESEARCH & DATA ANALYSIS PROJECTS

**Hospital Service Operations Analysis Visualizations using R.** *(2025)*

Project Portfolio

- Designed and developed R-based analytical visuals comparing cardiology and orthopedics service lines across 10+ performance metrics
- Analyzed 16,000+ patient encounters using ggplot2 and advanced data visualization, uncovering critical profitability gaps (-5.8% vs +9.1% margins)
- Applied statistical programming to examine demographic patterns, cost structures, and payer distributions
- Created executive-ready visualizations and strategic recommendations for healthcare operations improvement

**Age Distribution Analysis using SAS. California Teachers Study. City of Hope** *(2025)*

Project Portfolio | CTS Blog

- Analyzed 20+ years of longitudinal data (2000-2022) from 130,000-participant cohort using advanced SAS programming
- Implemented reproducible statistical methods to compare teacher longevity with general population benchmarks
- Discovered potential increased life expectancy among study participants with implications for occupational health policy
- Produced statistical report with 5+ data visualizations illustrating age distribution changes over time
- Collaborated with senior researchers to refine methodological approach and interpretation of findings

**Implementation Science: AI Preoperative Care Companion** *(2025)*

Project Portfolio

- Developed implementation strategy for AI companion supporting knee replacement surgery patients
- Applied Consolidated Framework for Implementation Research (CFIR) to identify system barriers and facilitators
- Designed multi-level evaluation framework using Proctor's model across implementation, service, and patient outcomes
- Created actionable implementation proposal utilizing Expert Recommendations for Implementing Change (ERIC) strategies

**GIS-Based Oral Health Disparities Dashboard—Alaska Department of Health** *(2024)*

Project Portfolio

- Built interactive ArcGIS dashboard integrating 4+ public health datasets mapping fluoridation status, provider availability, and geographic access barriers across Alaska
- Conducted spatial analysis correlating demographic and geographic factors with healthcare access patterns
- Delivered visualization tools that streamlined stakeholder access to regional health information for policy planning

## TECHNICAL SKILLS

**Programming Languages:** R (intermediate), SAS (intermediate), Python (developing), SQL

**Statistical Methods:** Descriptive analysis, regression modeling (linear, logistic), survival analysis, hypothesis testing

**Data Visualization:** ggplot2, Base R, SAS Viya

**Healthcare Systems:** Epic, Allscripts, Clinical Trial Data Management (EDC systems)

**Research Tools:** Markdown, LaTeX, GitHub, Excel, Access, Obsidian, Trello

## EDUCATION

**Master of Public Health (MPH)** | Population & Health Science
University of Michigan–Ann Arbor, MI | 2025
*Focus: Applied Epidemiology, Health Policy, Biostatistics*

**Bachelor of Science in Nursing (BSN)**
University of Central Florida | Orlando, FL

## SPECIALIZED TRAINING

- SAS Programming & SAS Viya Visual Statistic | SAS, 2025 (in-progress)
- Data Science Professional | Harvard University, 2023
- Statistical Analysis with R for Public Health | Imperial College London, 2024

## CLINICAL SKILLS

Care coordination, Clinical assessment, Multidisciplinary collaboration, Quality improvement, Risk identification

## LICENSES

- Registered Nurse, BSN, Nurse Licensure Compact
- Advanced Cardiac Life Support, American Heart Association
- Basic Life Support, American Heart Association

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## Professional Experience

**Student Coordinator** | **University of Michigan School of Public Health** *(2024 – Present)*

- Optimize learning management systems (Canvas) for 200+ users, applying data-driven approaches to improve course navigation and user experience
- Collaborate with faculty to implement evidence-based instructional design principles

**Clinical Device Training & Operations Specialist** | **Inovio Pharmaceuticals** *(2021 – 2022)*

- Analyzed device performance data across 5+ clinical trial sites to identify operational improvements and ensure protocol compliance
- Developed training materials and standard operating procedures that improved clinician comprehension and data quality
- Collaborated with cross-functional teams to optimize Electronic Data Capture (EDC) systems for DNA medicine clinical trials

**Registered Nurse** | **Orlando Health** *(2012 – 2019)*

**RN–Cardiac Stress Lab** *(2017 – 2019)*

- Coordinated care for 15-20 high-risk cardiac patients daily, including ECG interpretation, assessments, and vital sign monitoring
- Assisted cardiologists with nuclear, exercise, and pharmacological stress testing procedures

**RN–Cardiac Evaluation** *(2013 – 2017)*

- Managed complex cases requiring comprehensive cardiac assessments, monitoring, and coordination across multiple specialists
- Facilitated care transitions between emergency, inpatient, and outpatient settings

**RN–Neuroscience** *(2012 – 2013)*

- Conducted neurological assessments and participated in multidisciplinary care planning

## ASSOCIATIONS

American Nurses Association, American Public Health Association