CU College of Nursing **Proposal Justification**
Proposal for DNP (Doctor of Nursing Practice) Scholarly Project: **Quality Improvement**

Project Title: Implementing patient centered monitoring of metabolic risks among individuals receiving Second generation antipsychotics (SGA): A Quality Improvement Project
Project Site/Unit: PsyFiTMS Behavioral Health Clinic, Edina MN.
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Student Specialty: *Health System Leadership Program (I-LEAD).*
Faculty Advisor Name: Dr. Kelly Peterson / Dr. Claudia Amura, Dr. Traci Snedden (Sub)

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I. Aim Statement for Quality Improvement (QI)

The organization where the DNP student lead, will be implementing this project is PsyFiTMS Behavioral Health Clinic in Edina, Minnesota. The clinic's vision is to lead a paradigm shift in behavioral health care by setting new standards for excellence, integrating advanced treatment modalities, and promoting holistic, patient-centered approaches that transform lives and reduce stigma around mental health. This QI project aligns well with their vision as it aims to use patient-centered Quality improvement measures to mitigate adverse effects monitoring of second-generation antipsychotics (SGAs), a common reason that patients do not adhere to SGA treatment.

This DNP student lead QI project will improve metabolic adverse effect monitoring by implementing an electronic health record (EHR) appointment tickler to automatically send patients who are prescribed second-generation antipsychotics interval appropriate reminders to complete metabolic labs with their primary care providers (PCP) when monitoring is due.

The AIM of this QIP is:

To reduce the risk of diabetes, weight gain, and cardiovascular disease among patients who are prescribed second-generation antipsychotics at PsyFiTMS by improving metabolic adverse effect monitoring rates from 60% to 90% by October 2026.
Sub Aim: To increase adherence to interval-appropriate metabolic monitoring by 30% between April and October 2026.

II. Background and Significance

Research shows that second-generation antipsychotics (SGAs) substantially improve treatment for schizophrenia, schizoaffective disorder, and bipolar disorder, yet they impose significant metabolic risks; including rapid weight gain (Smith et al., 2025), dyslipidemia (Bui et al., 2024), impaired glucose regulation with a 3–4 fold increased diabetes risk (Iqbal et al., 2025), and a ~6–7% one-year incidence of new hypertension (Eyles et al., 2024); all of which contribute to elevated cardiovascular mortality and an 8–12-year reduction in life expectancy among individuals with serious mental illness (Poojari et al., 2025). Effective mitigation requires consistent monitoring of metabolic adverse effects, which can be strengthened through targeted patient–provider education that improves fidelity to assessments such as BMI, blood pressure, fasting glucose, hemoglobin A1c, and lipid profiles (Soda et al., 2021). Grounded in the Donabedian Model's structure, process, and outcome framework, this

approach aligns with evidence showing that metabolic adverse effects, particularly weight gain, may exceed efficacy differences in clinical significance (Leucht et al., 2024). Despite APA and ADA recommendations for structured metabolic monitoring, fewer than half of at-risk patients receive guideline-concordant care (Bui et al., 2024), underscoring the need for structured educational interventions to enhance monitoring quality, reduce preventable cardiometabolic complications, and support holistic, patient-centered care. Based on this literature, quality in our practice setting can be improved by increasing interval appropriate metabolic adverse effect monitoring to decrease the risk of diabetes, weight gain, and cardiovascular disease in adult patients who are prescribed second-generation antipsychotics

Evidence for Improvement

Evidence shows that using structured quality improvement strategies greatly improves adherence to metabolic monitoring guidelines. Research highlights that employing standardized protocols and teamwork significantly increases screening for glucose, lipids, and blood pressure(Shin et al., 2024). Additionally, studies show that combining education with structured documentation improves metabolic surveillance (Hwong et al., 2022; Soda et al., 2021). However, using isolated tools alone leads to only partial compliance (Al Saati et al., 2025). Overall, lasting improvement requires aligning systems rather than relying on standalone instruments.

Alignment With Organizational Goals and the Quintuple Aim

This QI initiative helps PsyfiTMS mission and advances the Quintuple Aim by improving the monitoring of metabolic side effects in patients. It aims to detect risks early, reduce costs, and support providers by making care more consistent. Standardized monitoring promotes health fairness and leads to better long-term patient results (Rangachari et al., 2025). The initiative streamlines workflows and encourages shared responsibility among providers. It also aligns with the Donabedian model to improve health care structures and processes through education, resulting in better monitoring and earlier metabolic risk detection(Issel, Wells, & Williams, 2021, p. 259).

III. Needs Assessment and Program Design

Inconsistent and suboptimal metabolic adverse effect monitoring of adult patients on antipsychotic medications at PsyfiTMS Behavioral Health Clinic was identified as a problem by the DNP student lead and other Clinic providers based on gaps between evidence-based guidelines and standard clinical practice, increasing risk for preventable metabolic complications, medication non-adherence, and adverse patient outcomes.

Applying formal needs assessment strategies

PsyfiTMS Behavioral Health Clinic completes baseline metabolic monitoring but does not consistently perform systematic ongoing monitoring. Issues include fragmented workflows without EHR appointment tickler-embedded reminders, limited staffing to track monitoring intervals, and varying provider awareness of responsibilities across psychiatrists, PMHNPs, primary care, and administrative teams. Documentation is further hindered due to the lack of a visual dashboard for tracking metabolic issues. Patients also receive minimal structured education on metabolic risks or self-monitoring practices, which affects early detection of complications.

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Interprofessional team members collaborating on this project include:

•Michaelina A. Bamah (DNP Student Project Lead)
• Sujit R.Varma, MBBS, MD, FAPA (Practicum Site Advisor)
• Stacie Gallentine, Pharmacist (Medication safety & counseling)
• Kristen Nickolas, Athenahealth Advisor, (EHR training & automation)
• Dr. Patrick Dixon, DNP, PMHNP (Clinical oversight & monitoring)
• Ingrid Leira, Office Manager, (Operational support & resources)
• Asha Varma, Students and External Clinic Coordinator (Coordinates communicates changes and update between students and preceptor)
• Amanda DeYoung, Administrative Staff (Scheduling & patient coordination)

An analysis of the various reasons that this problem exists for this population of patients within my organization :

The Root Cause Analysis (Appendix 1) indicates that inconsistent metabolic monitoring at PsyFiTMS is a multifactorial systems problem. Key contributors include workflow variability, insufficient EHR support, resource limitations, gaps in organizational engagement, and broader structural misalignment. Non-standardized workflows and unclear role delineation lead to inconsistent monitoring practices. These issues are reinforced by limited EHR functionality, such as absent alerts and embedded workflows, which hinder timely identification of overdue assessments. Resource constraints, including high patient volumes and limited staffing, further reduce the capacity for routine metabolic surveillance, even when clinicians recognize its importance. In addition, uneven organizational emphasis on monitoring weakens shared accountability and contributes to variability in execution. These interdependent factors collectively create a system unable to support reliable, guideline-concordant metabolic monitoring; therefore, education alone is insufficient. Sustainable improvement requires coordinated system-level redesign and codesigned workflows that strengthen therapeutic alliance, integrate patient and family education, address competing illness burdens, (e.g., fear of weight gain) with supportive lifestyle counseling, motivational strategies, and coordinated psychiatry–primary care follow-throughs.

IV. Methodology

A. Description of the Population to be Studied

All adult patients (≥18 years) at PsyFiTMS who were prescribed a second generation antipsychotic (SGA) within three months before the project started will be included. About 200–250 patients are treated with SGA in this facility annually. The DNP project lead retrospectively reviewed around 70% of patient records to understand diagnoses, SGA use duration, and baseline metabolic status. Eligible patients must have continuous SGA therapy within 90 days and be assessed as at risk for metabolic side effects.
Metabolic adverse risk was defined as meeting one or more of the following criteria based on EHR documentation:

- Weight gain ≥5% from baseline,
- Risk for or evidence of new or worsening dyslipidemia, including elevated LDL, elevated triglycerides, or reduced HDL,

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- Risk for or evidence of impaired glucose regulation, such as elevated fasting glucose or HbA1c,
- New diagnosis of metabolic syndrome, as defined by established clinical criteria.

B. Measures and Data Collection Procedures

Outcome Measures:

• ***Outcome Measure #1:*** Proportion of patients prescribed second-generation antipsychotics (SGAs who receive timely metabolic risk monitoring within 12 weeks of treatment initiation at PsyFiTMS Behavioral Health Clinic.

Definition: Newly identified metabolic risk monitoring set includes conducting and documentation of at least weight/BMI, and blood pressure, consistent with APA/ADA guidelines, and reflects whether patients receive the recommended early monitoring needed to detect preventable metabolic adverse effects.

Goal: Increase completion of guideline-concordant monitoring from 60% to 90% by October 2026

Baseline: A pre-intervention review (Jan–Mar 2026) indicates 60% of newly initiated SGA patients received complete metabolic monitoring within 12 weeks; 40% had incomplete or overdue assessments.

• ***Outcome Measure #2:*** Proportion of patients with newly identified metabolic laboratory abnormalities within 12 weeks of second-generation antipsychotics (SGAs) initiation at PsyFiTMS.

Definition: National recommendations call for metabolic assessment at 4, 8, and 12 weeks following SGA initiation. The 12-week assessment is emphasized as the critical interval for early detection of metabolic adverse effects. The proportion of patients prescribed SGAs who exhibit new-onset metabolic laboratory abnormalities, including impaired fasting glucose (≥100 mg/dL) or HbA1c ≥5.7%, and newly abnormal lipid panel values.

Goal: By October 31, 2026, increase the rate of early detection of metabolic abnormalities from baseline 65% (established) to at least 85%, reflecting improved identification of clinically meaningful changes.

Baseline: Current baseline detection rates is at 65% established via a retrospective chart audit of SGA initiations from Jan–Mar 2026. Preliminary data indicate minimal systematic detection due to inconsistent monitoring.

Process Measures:

• ***Process Measure* #1**:Proportion of interdisciplinary team members who complete evidence-based education on metabolic-adverse-effect monitoring within 30 days of project launch.

Goal: Achieve 90% completion of standardized metabolic monitoring education by all clinicians and providers.

Definition: Education includes structured instruction on metabolic risk assessment, documentation requirements, and correct use of the EHR "appointment tickler" function to support proactive follow-up and reduce missed monitoring intervals.

Baseline: No PsyFiTMS team members have previously received this standardized.

• ***Process measure # 2:*** Proportion of interdisciplinary team providers who consistently use the EHR Appointment Tickler to generate automated metabolic monitoring reminders for timely follow-up.

Goal: Achieve 95% provider utilization of the EHR appointment tickler function for metabolic monitoring reminders by project end.

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Definition: This measure evaluates provider engagement with two integrated workflow components by completing a standardized metabolic-risk education and routinely using the EHR appointment tickler prompts for patients. Together, these practices aim to reduce missed assessments, strengthen continuity of care, and support guideline-concordant metabolic screening for patients receiving SGAs.
Baseline Data: No standardized reminder workflow currently exists in the PsyFiTMS

Balancing Measures:
• ***Balancing Measure #1*:** Average duration of patient visits before and after workflow integration
Goal: Maintain the baseline average visit duration of 30 minutes for routine medication-management encounters, ensuring workflow changes do not increase visit burden.
What Is Measured: Visit duration is measured solely using automated EHR timestamps (check-in to check out in the scheduling module) to capture the average length of patient encounters before and after workflow implementation.
Definition: This measure reflects the impact of added monitoring steps, including metabolic assessments, lab ordering, results review, and patient education. A deviation >5 minutes from baseline indicates unintended workflow burden requiring remediation.
Baseline Data: Current average visit duration is 30 minutes, established using pre-implementation EHR timestamps.

C.* Plans for *PDSA cycles and potential EBP Intervention
This project will apply iterative Plan–Do–Study–Act (PDSA) cycles to test and refine strategies that improve metabolic adverse effect monitoring for patients prescribed SGAs. Each cycle will incorporate workflow data, provider input, and patient-centered feedback to ensure interventions remain feasible, acceptable, and effective. Evidence supports using multicomponent approaches to strengthen metabolic monitoring performance (Shin et al., 2024; Soda et al., 2021; Hwong et al., 2022).
Initial evidence-based interventions include:

- Targeted provider education on antipsychotic-related metabolic risks and guideline-concordant monitoring intervals to improve clinical knowledge and consistency (Shin et al., 2024; Soda et al., 2021).Within this QI project, provider education and patient reminders will be used to reinforce adherence to these evidence-based timelines.
- EHR-based clinical decision support (CDS) automated reminders, best-practice alerts, and standardized order sets, to prompt timely monitoring and reduce missed opportunities (Hwong et al., 2022; Shin et al., 2024).
- Standardized workflow protocols and checklists to reduce documentation variation and ensure complete, reliable tracking of monitoring requirements (Soda et al., 2021).
- Patient-engagement strategies, including motivational interviewing and shared decision-making by each provider, to improve understanding, adherence, and follow-through when results are abnormal or adherence declines (Shin et al., 2024).
- Interdisciplinary communication supports, such as brief team huddles and clarified role expectations, to enhance coordination and monitoring continuity across the care team (Hwong et al., 2022).

Each PDSA cycle will have clearly defined aims and integrate lessons learned, such as modifying CDS alert frequency to reduce alert fatigue or refining documentation templates to enhance usability. Ongoing sharing of cycle findings will maintain team engagement and emphasize

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incremental progress. If targets are not met, additional evidence-based strategies, such as standing lab orders, virtual patient education, or strengthened patient reminders, will be implemented in subsequent cycles (Shin et al., 2024; Soda et al., 2021).

Potential Scientific Problems

Several scientific challenges may influence the effectiveness and interpretability of the iterative PDSA cycles. First, incomplete or inaccurate data capture, including laboratory tests completed outside the clinic or inconsistently documented within the EHR, may lead to underestimation of true monitoring rates and obscure baseline-to-post-intervention change. Secondly, variable implementation fidelity among providers, such as inconsistent use of clinical decision support tools or workflow checklists, can introduce uncontrolled variability, threatening internal validity and limiting the ability to determine which components of the intervention are driving observed outcomes. Thirdly, patient engagement and adherence barriers remain a critical scientific and clinical challenge; missed appointments, refusal of laboratory testing, or competing psychosocial stressors may limit the project's capacity to achieve measurable improvements despite optimized workflows. Finally, alert fatigue and workflow burden may diminish provider responsiveness to EHR-based reminders, reducing the intervention's effectiveness and potentially compromising patient-centered outcomes. Acknowledging and proactively addressing these scientific problems will strengthen the rigor, reliability, and sustainability of the project's PDSA-driven improvements.

D. Data Collection Process and Data Security Plan:

Data for this quality improvement project will be obtained through retrospective and prospective electronic health record (EHR) extraction, standardized chart audits, and stakeholder feedback at the PsyFiTMS clinical site. Baseline data collected within the first 3 months will include completion of guideline-recommended metabolic monitoring measures (BMI/weight, blood pressure, fasting glucose or HbA1c, and lipid panel). Ongoing data will be captured at each PDSA cycle using EHR reports, clinical decision support (CDS) alert logs, and structured documentation templates. Charts with missing or externally completed laboratory results will be flagged for verification to ensure data integrity.

Complementary qualitative data will be collected through brief provider surveys, workflow observations, and informal feedback during team huddles to identify perceived barriers, workflow constraints, and patient-centered factors affecting adherence. All data will be assigned a unique study identifier prior to analysis, and no direct patient identifiers will be included in project datasets.

Electronic data will be stored in password-protected Excel files with audit-trail features enabled and maintained on clinic-approved secure servers. Any physical materials (e.g., handwritten notes) will be stored in a locked cabinet with access restricted to authorized personnel. Data access will be limited to the DNP project lead, clinical mentor, and designated data manager in accordance with institutional privacy and HIPAA requirements. Routine data-quality checks will be performed to ensure accuracy and completeness. All electronic files will be backed up using clinic-approved encrypted storage solutions.

All data will be maintained in a secure, HIPAA-compliant repository and reviewed at the end of each PDSA cycle to assess trends, evaluate intervention fidelity, and guide iterative refinements. In accordance with clinical site and IRB policies, all project-related data will be retained for three years following project completion and then securely destroyed using approved disposal methods.

E. Data Analysis Plan

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Analysis Table for Outcome, Process, and Balancing Measures

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Type of Measure	Measure	Goal	Baseline Data	Data Source	Level of Measurement	Statistical Analysis	Reasoning Behind Analysis
Outcome #1	Completion of guideline-concordant metabolic monitoring within 12 weeks.	Increase monitoring up to 90% by October 31, 2026.	60% of patients prescribed SGAs have complete and timely metabolic monitoring in the last three months.	EHR chart audit; lab interface reports	Nominal (complete vs incomplete)	Monthly run chart for the process measure focused on metabolic adverse-effect monitoring. Paired t-test.	Run charts display common-cause variation, which is normal, and special-cause variation, which signals problems or improvements. A paired t-test checks for significant differences between two related means, often measuring the same participants pre- and post-intervention.
Outcome #2	Early detection of metabolic laboratory abnormalities within 12 weeks of SGA initiation.	Achieve ≥85% detection of adverse effects to prescribed SGA treatments.	Current detection rate of 65%. – - Minimal systematic detection due to inconsistent monitoring via chart audit.	EHR chart review, health-maintenance flags; lab feeds; tickler logs	Nominal (up-to-date vs not)	Run chart, Paired t-test.	A run chart plots data points in chronological order, showing trends, patterns and changes in performance. Because the same group is

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							measured twice, the paired t-test isolates the impact of the intervention.
Process #1	Proportion of interdisciplinary team members completing standardized metabolic adverse-effect education within 30 days.	90% completion of training by all clinicians.	No structured training was completed by staff	Training attendance records; education completion logs.	Nominal (completed vs not)	A McNemar test. Descriptive statistics ,	McNemar test for the implementation measure to evaluate statistical significance. Descriptive statistics to rate the percent of completion.
Process #2	Proportion of providers consistently using the EHR Appointment Tickler to generate automated metabolic monitoring reminders.	95% provider utilization of the EHR tickler system.	Appointment Tickler automated reminder is a new workflow a PsyFiMS.	EHR tickler utilization logs; provider workflow activity reports.	Paired data / Provider-level; workflow adherence. (Used it? Yes/No). categorical with two levels	McNemar Test Descriptive statistics and run chart analysis.	The McNemar test shows whether a significant change occurred in a yes/no outcome for the same people over time Descriptive statistics and run chart analysis evaluates

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							adoption of workflow tools that support timely follow-up, reduce missed screenings, and improve continuity of care.
Balancing #1	Average duration of patient visits before and after workflow integration.	Maintain 30-minute average visit length without significant increase.	Average visit duration is 30 minutes, established using pre-implementation EHR timestamps.	EHR scheduling/encounter timestamp logs pulled monthly.	Ratio (minutes), System-level (efficiency metric)	Descriptive statistics and run chart trending over time.	Descriptive statistics summarize what is happening in the balancing measure before and after an intervention. A deviation >5 minutes from baseline indicates unintended workflow burden requiring remediation.

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Balancing #2	Antipsychotic Medication Discontinuation or Non-Adherence After Workflow Implementation	Maintain or improve adherence; avoid unintended treatment continuation or reduced patient engagement.	Pre-implementation data on adherence obtained at PsyFiTMS via: Pharmacy refill history (MPR/PDC) EHR medication records Provider notes on patient-reported adherence.	Pharmacy refill records, EHR medication lists, clinician documentation.	Nominal (adherent vs nonadherent)	Descriptive statistics. Run charts.	Descriptive statistic is useful when balancing measure is not continuous. Run charts and percent-change analysis will determine whether workflow introduction correlates with negative impacts on adherence. E.g.: % adherent with SGAs % non- adherent with SGAs

STATISTICAL CONSULT OCCURED ON (DATE) __ 3/16/2026___WITH (CONSULTANT)__ Mr. Marcus R. Waldman, Research Associate Center for Innovative Design & Analysis.__

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V. Potential Scientific Problems- including possible Conflicts of Interest (COI)

Although the EHR will support data extraction, additional time will be required to work with clinical and informatics staff at the clinical site to obtain the specific data points needed for analysis. Incomplete or inconsistent documentation may occur when clinicians omit required fields or when encounters fall outside the project's measurement periods. Appointment tickler alerts or workflow prompts may also experience occasional technical failures that lead to gaps in data capture. Historical documentation variability may limit the precision of baseline estimates. Provider adoption may fluctuate due to workflow demands, staffing shortages, or competing organizational priorities, which could reduce implementation

fidelity. While structured workflows, cross-training, and supplemental training modules will be used to support consistency, some deviation from intended processes remains possible. Analyst and operational capacity may also be constrained, necessitating careful scoping and prioritizing high-yield tasks. Because the DNP project lead holds both clinical and project oversight responsibilities, a potential conflict of interest may exist. To mitigate bias, data validation and outcome review will include neutral parties, and all results will be reported only in aggregated, de-identified form. The Clinical site's leadership is supportive of the project, and quality and informatics teams have expressed willingness to assist throughout planning, implementation, and evaluation

VI. Summarize Knowledge to be Gained

This quality improvement project aims to enhance evidence-based metabolic-adverse-effect monitoring for adults prescribed second-generation antipsychotics in an outpatient behavioral health clinic. It will establish baseline adherence to recommended monitoring, assess the accuracy and consistency of documented metabolic-monitoring elements, and evaluate providers' current knowledge, confidence, and workflow integration related to national and state monitoring guidelines. This quality improvement project is designed to strengthen evidence-based metabolic adverse effect monitoring practices for adults prescribed second generation antipsychotic medications in an outpatient behavioral health clinic setting. Knowledge to be gained includes the current baseline of metabolic-adverse effect monitoring adherence, the consistency and accuracy of documented monitoring elements, and the existing level of provider knowledge, confidence, and workflow integration related to national and state metabolic-monitoring guidelines. The project will examine how a focused provider education, EHR-integrated clinical decision support, standardized documentation processes, and structured patient-engagement strategies influence the adoption and reliability of best practices. The impact of these interventions will be evaluated using EHR-derived data and visual displays such as bar graphs and run charts to track changes in monitoring fidelity over time. The knowledge generated through this project will enhance understanding of the operational barriers and facilitators influencing guideline implementation and will help identify practical, low-cost strategies that promote long-term sustainability. Although the findings will not be generalizable, they may be valuable to comparable outpatient centers seeking to strengthen their metabolic monitoring practices. Accordingly, the results may be disseminated to similar behavioral health settings that are encountering challenges in integrating metabolic adverse-effect monitoring guidelines into consistent, high-quality clinical care.

VII. References

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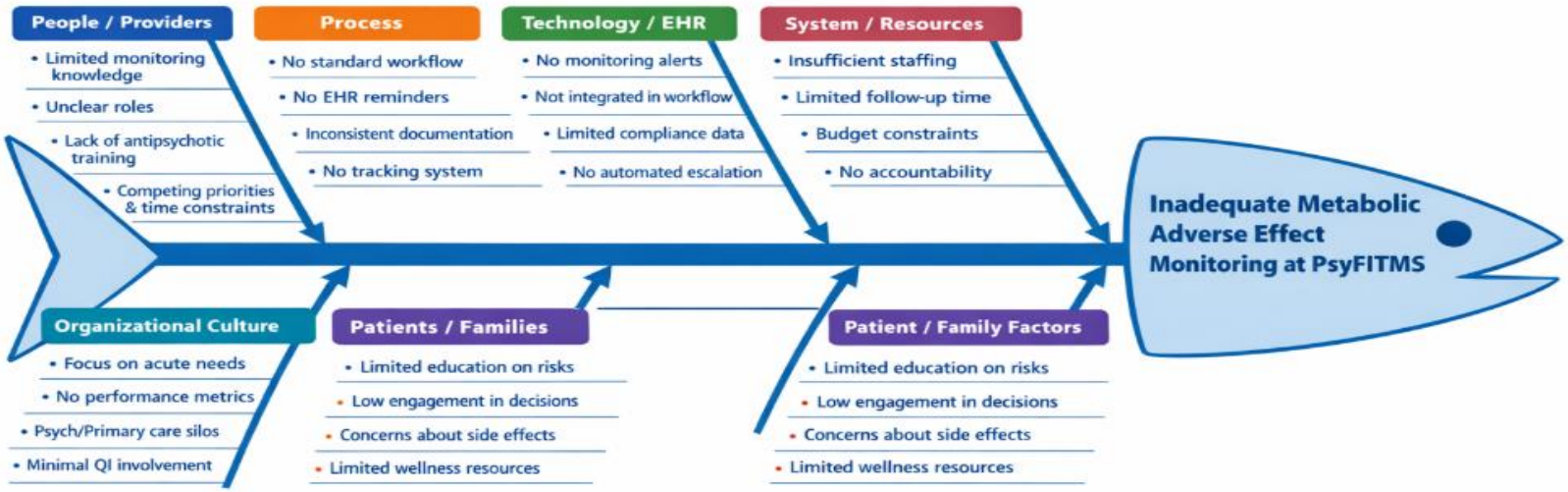
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Additional appendices that MAY be included:

- **Appendix 1: Fishbone Analysis Table (**RCA: Fishbone diagram (Ishikawa/Fishbone)

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- **Appendix 2:** SWOT analysis:

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STRENGTHS	WEAKNESSES
1. Strong leadership and mentorship from student preceptor. 2. Interprofessional team collaboration including pharmacists, educators, and providers. 3. Support from clinic administration for strategic planning and resource allocation.	1.Inconsistent monitoring practices among prescribing providers. 2. Limited time and capacity for staff training and education. 3. Lack of standardized protocols for metabolic side effect tracking.
OPPORTUNITIES	**THREATS**
1. Develop and implement provider education modules to improve monitoring. 2.Engage patients and families to co-create feedback-informed care strategies. 3. Collaborate with advocacy groups to influence policy and public awareness.	1. Potential resistance to change from staff due to workload concerns. 2.Technological limitations in tracking and reporting patient outcomes. 3 Risk of patient non-compliance or lack of follow-through with monitoring plans.

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APPENDIX C: Project Implementation Timeline

