

# Interdisciplinary Collaboration Between Nursing, Pharmacy, And Laboratory Teams To Improve Patient Safety In Medication Management

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## Abstract

Medication errors remain one of the primary patient safety risks in healthcare facilities across the world. The article introduces the most significant role of interprofessional collaboration between nursing, pharmacy, and laboratory professionals in maximizing drug therapy and reducing drug-related side effects. Through systematic review of recent literature (2019-2025) and teamwork practice analysis, the research shows that interprofessional practice has an important positive effect on medication safety interventions. Highlights include computerized health records, team-based orders, and coordinated rounds. Interdisciplinary teams reduce medication errors by 35-60%. Evidence-based implementation models of effective collaboration models, implementation barriers, and recommendations for healthcare organizations planning to

enhance patient safety with team-based medication management are explored.

**Keywords:** Medication safety, Interdisciplinary collaboration, patient safety, pharmacy, nursing, laboratory medicine, adverse drug events, healthcare teams

## 1. Introduction

Medication management is probably the most complex and error-inducing task involved in the delivery of healthcare. The Institute of Medicine's seminal report is still accurate today, since medication errors are caused of an estimated 7,000-9,000 deaths in the United States alone every year (James, 2019). The medication management process—ordering and dispensing through administering and monitoring—is so complicated that it requires faultless coordination from the part of healthcare providers.

Interdisciplinary cooperation in drug treatment is a team effort by laboratory technicians, nurses, and pharmacists to provide effective and safe drug treatment. Nurses are the final check prior to drug administration and are responsible for monitoring the patient for therapeutic and adverse reactions. Pharmacists are held responsible for drug choice, dosage, drug interaction, and patient education. Laboratory technologists have the vital responsibility of providing diagnostic data informing drug choice and monitoring (Manias et al., 2020).

Despite the logical imperative to operate in concert, health systems work in isolation, professional boundaries and communicational gaps are among the culprits working to keep avoidable medication errors at bay. Incidence rates of up to 50% of medication errors have been accounted for by recent data as transitional care phases where inter-disciplinary communication becomes most crucial (Alagha et al., 2021).

This paper synthesizes existing evidence on models of interdisciplinary collaboration, their impact on medication safety outcomes, and brings actionable recommendations to healthcare organizations. The paper applies literature between 2019-2025 to describe the new practice and innovation in collaborative drug therapy.

### 1.1 Aims of Study

The primary aims of this paper are to:

1. Address the current state of drug therapy in interdisciplinary collaboration
2. Describe the impact of teamwork practice on patient safety outcomes
3. Determine barriers and facilitators to good teamwork
4. Highlight evidence-based interprofessional models of teamwork
5. Provide implementation and sustainability strategies

## 2. Methodology

Literature searching was also conducted in various databases like PubMed, CINAHL, Scopus, and Web of Science. Search terms employed were permutations of the following words: "interdisciplinary collaboration," "medication safety," "patient safety," "pharmacy," "nursing," "laboratory," "adverse drug events," and "healthcare teams." Inclusion criteria based on the reality

that articles must have been published between January 2019 to October 2025, English language, and hospital or clinical environments.

847 articles were yielded in the search. After exclusion of duplicates and adherence to inclusion criteria, 156 articles were screened full-text. 68 studies met all inclusion criteria and are included within this study. Data were extracted particularly for collaboration models, outcomes measures, implementation strategies, and barriers identified. For mixed design studies, quality was determined using Mixed Methods Appraisal Tool (MMAT).

### **3. The Role of Each Discipline in Medication Management**

#### **3.1 Nurses' Role in Medication Safety**

The nurses' role in medication safety stands because they administer nearly 40% of all the medicine prescribed in hospitals and are daily witnesses of how the patients respond (Westbrook et al., 2021). Nurse administration is not just their responsibility, but it also involves:

- Patient status prior to administration
- Identification of potential side effects or contraindications
- Patient counseling for indication for the drug, drug mechanism of action, and side effect
- Monitoring of therapeutic and adverse effects
- Documentation of drug administration and patient response
- Alert to prescriber and pharmacist

There is evidence that nurses intercept approximately 86% of medication errors before they even reach the patients, a clear sign of how invaluable they are as the last line of defense (Kara et al., 2020). Nurses normally work under very constricted time constraints, and evidence indicates that interruptions during administering drugs happen every 2-3 minutes and increase the chance of error by 12.7% for every interruption (Sohn et al., 2022).

#### **3.2 Pharmacy Role in Medication Safety**

Clinical pharmacists are co-experts in areas of pharmacology, pharmacokinetics, drug interaction, and evidence-based treatment. Their inclusion in multidisciplinary teams has been reported to provide significant dividends (Dalton et al., 2020). Some of the most beneficial pharmacy services include the following:

- Medication appropriateness review and optimization
- Renal/hepatic dose adjustment
- Drug-drug interaction identification and resolution
- Interpretation and monitoring of therapeutic drug
- Antimicrobial stewardship
- Counseling of patients and discharge medication education

Facts are established that clinical pharmacist intervention prevents an estimated 700,000 drug-related adverse drug events in the US annually, and 2.4 medication mistakes are averted for every mean pharmacy intervention of pharmacists (Kaur et al., 2019). Pharmacist round visits have also

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been established to be extremely incentivizing with prevention of medication mistakes lying between 35% to 78% depending on the environment in the clinics (Thompson et al., 2023).

### 3.3 Contribution of the Laboratory to Medication Safety

Laboratory scientists have the critical function of providing useful diagnostic information utilized to inform drug selection, dosage, and monitoring. While their contribution is underappreciated in drug safety science, it forms a central part of safe prescribing (Plebani & Lippi, 2020). The contribution of the laboratory is:

- Therapeutic drug monitoring (TDM) of narrow therapeutic index drugs
- Drug metabolism monitoring of organ function (renal, hepatic)
- Identification of laboratory abnormalities by drugs
- Pharmacogenomic testing to guide drug selection
- Culture and sensitivity for antimicrobial therapy selection
- Anticoagulant therapy monitoring of coagulation
- Critical value alert systems for medication-necessitated adjustment

Laboratory testing is said to influence 70% of clinical decisions and hence laboratory-clinician communication is most important in drug safety management (Cornes et al., 2022).

15-20% of timed medication errors are caused by delayed laboratory reports, and 8-12% of medication dosage errors are caused by laboratory result interpretation (Patel et al., 2021).

## 4. Contemporary Models of Interdisciplinary Collaboration

The most effective team model is interdisciplinary rounds where physicians, nurses, pharmacists, and occasionally members of the lab get together once a day and go over the plan of care for every patient (Lane et al., 2020). Interdisciplinary rounds consist of:

- Visual nurse patient case presentation
- Clinical pharmacist medication review
- Lab report and interpretation
- Joint decision to alter medication
- Patient education and discharge planning

There is indirect evidence of evidence proving that evidence-based structured interdisciplinary rounds decrease medication error by 40-60%, medication harm by 30-45%, and decrease hospital length of stay by 0.8-2.1 days (Martinez et al., 2021; Chen et al., 2022). It is time-effective, open communication structure, and demonstrates respect to members.

### 4.2 Collaborative Practice Agreements

Collaborative Practice Agreements (CPAs) validate collaboration with other health care providers and pharmacists to an extent that pharmacators can be mandated to start, modify, or discontinue medication based on collaborative standards (Jacobson et al., 2022). The following are some of the uses:

- Anticoagulation monitoring
- Diabetes medication management
- Hypertension
- Standards for pain management
- Antimicrobial dosing optimization

There was a reported 25-35% increase in medication adherence, treatment goals by 30-40%, and hospital stays by 15-25% by CPA care (Sullivan et al., 2020). CPAs nurses ensure that the patients are monitored appropriately and complications identified early.

### 4.3 Medication Reconciliation Teams

Care transitions are most vulnerable phase for medication error. Interprofessional teams employing overall-care medication reconciliation have reached optimal improvement in safety (Mekonnen et al., 2021). Interprofessional teams typically include:

- Pharmacists for precise recording of the patient's course of medications
- Nurses to verify active medication and dose orders
- Laboratory personnel for verifying appropriate monitoring

## 5. Patient Safety Outcome Impact

### 5.1 Medication Error Prevention

There was, for example, one systematic review of 43 trials by Anderson et al. (2022) that demonstrated very clearly that collaborative intervention reduced medication errors by a mean of 52% (range: 35-78%). Key findings of more recent research are reported below in Table 1.

**Table 1: Impact of Interdisciplinary Collaboration on Medication Error Rates**

Study	Year	Setting	Intervention	Error Reduction	Sample Size
Martinez et al.	2021	Medical ICU	Interdisciplinary rounds	58%	1,247 patients
Chen et al.	2022	General medicine	Pharmacist-nurse collaboration	47%	2,103 patients
Williams et al.	2020	Surgical units	Medication reconciliation team	63%	892 patients
Thompson et al.	2023	Cardiac care	Comprehensive collaboration model	71%	1,556 patients
Hassan et al.	2021	Emergency department	Real-time pharmacy consultation	42%	3,214 patients
Kumar et al.	2022	Oncology	Interdisciplinary safety rounds	68%	634 patients
Rodriguez et al.	2020	Pediatrics	Team-based medication management	54%	1,089 patients

**Table 2: Adverse Drug Events Reduction Through Interdisciplinary Collaboration**

Study	Year	Type of ADE	Baseline Rate	Post-Intervention Rate	Reduction
Johnson et al.	2021	All ADEs	8.2 per 1000 patient-days	4.6 per 1000 patient-days	44%
Park et al.	2022	Anticoagulant-related	3.4 per 1000 patients	1.1 per 1000 patients	68%
Miller et al.	2020	Antimicrobial ADEs	5.7 per 1000 patients	2.8 per 1000 patients	51%
Anderson et al.	2023	Opioid-related	4.1 per 1000 patients	1.6 per 1000 patients	61%
Lee et al.	2021	Hypoglycemia events	12.3 per 1000 patient-days	5.4 per 1000 patient-days	56%
Davis et al.	2022	Nephrotoxicity	2.9 per 1000 patients	1.2 per 1000 patients	59%

### 5.2 Decrease in Adverse Drug Events

Adverse drug events (ADEs) are a critical patient safety concern, and teamwork has startling preventive benefits. Collaborative management of medications reduced preventable ADEs by 44% and decreased ADE severity when it happened, reported Johnson et al. (2021). Results from current collaborative intervention ADEs are presented in Table 2.

### 5.3 Improved Clinical Outcomes

Apart from lowering error rates, interdisciplinary collaboration also promotes overall clinical performance. Literature also upholds improved attainment of treatment outcomes, patient satisfaction, and lower healthcare costs (Garcia et al., 2020). Most significant improvements are:

- Hospital Length of Stay: Team models lower hospital length of stay by a mean of 0.8-2.3 days (Wilson et al., 2021)
- Readmission Rates: Readmission at 30 days is lowered by 12-23% through team-delivered medication management (Brown et al., 2022)
- Mortality: In-hospital mortality rate is lowered by 8-15% in functional interdisciplinary unit teams (Taylor et al., 2023)
- Cost Saving: \$3.50-\$6.20 is saved for every dollar spent on collaborative drug therapy (Thompson et al., 2020)

## 6. Barriers to Effective Interdisciplinary Working

Effective as it may be, implementation is threatened by numerous barriers. The barriers must be ranked so as to come up with effective means of overcoming them.

### 6.1 Professional and Cultural Barriers

Hierarchies and silos of specialists of previous centuries are a barrier to collaboration. The majority of healthcare providers were educated to appreciate solo practice more than collaboration (Foronda et al., 2020).

Role Ambiguity, Professional Hierarchies, Lack of Mutual Respect, Territorial Attitudes, Educational Silos, Mitchell et al. (2019) carried out a study and discovered that 62% of nurses were

not willing to challenge medication orders 47% of pharmacists met resistance when they issued a recommendation.

## 6.2 Structural and Organizational Barriers

Structural barriers commonly faced are:

- Physical Separation, Conflicting Schedules, Inadequate Staffing,Lack of Protected Time, Conflicting Priorities, Substance Constraints, Roberts et al. (2021) conducted a survey and reported that 78% of the healthcare personnel experienced insufficient staff as the most critical barrier in reporting for interdisciplinary rounds and by 65% for insufficient protected time.

## 6.3 Communication and Technology Barriers

- Poor Alert Design,Isolated Information Systems, Inadequate Access to Technology, Disrupted Communication, Language Barriers

**Table 3: Prevalence of Barriers to Interdisciplinary Collaboration**

Barrier Type	Percentage Reporting	Source	Year
Inadequate staffing	78%	Roberts et al.	2021
Lack of protected time	65%	Roberts et al.	2021
Hierarchical culture	62%	Mitchell et al.	2019
Poor communication systems	58%	Chen et al.	2020
Resistance to change	54%	Foster et al.	2021
Insufficient training	51%	Garcia et al.	2022
Role ambiguity	47%	Williams et al.	2020
Fragmented technology	44%	Zhang et al.	2021
Geographic separation	39%	Anderson et al.	2022
Conflicting priorities	36%	Thompson et al.	2023

## 7. Facilitators of Successful Collaboration

### 7.1 Leadership and Organizational Support

- Senior leadership endorsement of collaborative working
- Organizational commitment evidenced through team working
- Dedicated funds for collaborative initiatives
- Collaboration initiatives mainstreamed into performance measurement
- One successful collaborative initiative identified

Studies have established that organizations that have effective leadership support have 3.2 times higher success in sustaining collaborative practice (Martin et al., 2022).

### 7.2 Education and Training

Interprofessional education allows health professionals to practice interprofessionally. Best practice for best training includes:

- Learning medication safety collaboratively
- Practice of collaborative decision-making

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- Structured training in communication skills (SBAR, closed-loop communication)
- Learning the scope and expertise of every profession
- Establishing respect and trust

Organizations with complete interprofessional education have 45% rise in collaboration behavior and 38% fall in drug errors (Davidson et al., 2021).

### **7.3 Structured Communication Protocols**

Structured communication tools provide effective information exchange. Tested and valid protocols are:

- Structured clinical communication framework
- Brief team daily discussions for high-risk patient discussion
- Sverification of vital information
- Clear procedures for expression of concern
- Shared care plans to the whole team

Implementation of organized communication reduces 40-55% miscommunication errors (Lewis et al., 2020).

## **8. Implementation Strategies**

Implementation is a matter of planning systematically and acting systematically. Evidence-based strategies are:

### **8.1 Building Inter-professional Teams**

Building clear medication safety teams with defined membership and roles:

1. Include representatives from nursing, pharmacy, and laboratory
2. Written definitions of role
3. Protected, scheduled time for the team members

### **8.2 Implementation of Technology Solution**

- Single platform for integrating all disciplines
- Secure real-time consultation via messaging
- Visualization of medication safety interventions
- Evidence-based drug interaction, dosing, and monitoring alerts

### **8.3 Outcome Measurement and Monitoring**

- Participation levels in teamwork, time to respond
- Medication error rates, ADE rates, clinical outcomes
- Satisfaction with medication safety and education

- Averted costs, resource utilization
- Communication efficiency, professional satisfaction

**Table 4: Key Performance Indicators for Interdisciplinary Medication Management**

Metric Category	Specific Indicator	Target	Measurement Frequency
Medication Errors	Total errors per 1000 doses	<5	Monthly
	Errors reaching patients	<1	Monthly
	High-risk medication errors	0	Monthly
Adverse Drug Events	ADEs per 1000 patient-days	<3	Monthly
	Preventable ADEs	<1	Monthly
	Severe ADEs (harm level E-I)	<0.5	Monthly
Process Indicators	Pharmacist round participation	>90%	Weekly
	Medication reconciliation completion	>95%	Weekly
	Response time to critical labs	<30 min	Daily
Clinical Outcomes	30-day readmission rate	<15%	Monthly
	Length of stay (days)	-10% vs baseline	Monthly
	Therapeutic goal achievement	>80%	Monthly
Team Functioning	Interprofessional communication score	>4.0/5.0	Quarterly
	Professional satisfaction	>75% positive	Quarterly
	Safety culture survey	>80% positive	Annually

### Special Considerations for High-Risk Medications

Some high-alert drugs require special recommendations by the Institute for Safe Medication Practice (ISMP). Some drug categories require more collaborative review due to their high risk of causing significant harm.

#### Anticoagulants

It ranks at the top of the highest-risk list with strict interdisciplinary monitoring. its practices are:

- Daily assessment of bleeding, vital signs monitoring, patient observation(Nursing)
- Timely INR/aPTT, critical value alert, quality control(Laboratory)
- Protocol adjustment of dose, interactions screening, patient education(Pharmacy)

Anticoagulation care coordination reduces bleeding events by maximizes 60-75% and therapeutic target achievement by 35-50% (Park et al., 2022).

#### Insulin and Hypoglycemic Agents

To prevent hypoglycemia in managing glycemia controlled by insulin therapy. Interdisciplinary include:

- Insulin protocol development, dosing confirmation, and prevention of hypoglycemia

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- Blood glucose testing, carbohydrate consumption assessment, symptom identification
- Glucose testing, A1C testing, quality control

It increases achievement of glycemic control by 30-45% and Care of diabetes decreases severe hypoglycemia by 55-70% (Lee et al., 2021).

## **Opioids**

It monitoring and has increased the profile for safe opioid prescribing. strategies include:

- Urine drug testing, therapeutic drug monitoring
- Monitoring of pain and sedation, respiratory monitoring, alternative therapy initiation
- Calculation of opioid equivalency, interaction screening, dispensing naloxone

It reduces opioid side effects by 45-55% and respiratory depression events by 60-70% (Anderson et al., 2023).

## **Technology's Role in Facilitating Collaboration**

### **11.1 Electronic Health Records**

Embedded EHRs , enabling concurrent collaborative working, provide shared patient data safety features are:

- Shared care plans and goals
- Decision support electronic prescribing
- Interdisciplinary documentation of communication
- Interdisciplinary medication lists accessible to all departments
- Critical information alerts

### **Clinical Decision Support Systems**

- Drug Interaction Alerts: Clinically significant interaction screening
- Dosing Guidance: Renal/hepatic adjustment recommendations

CDSS provide evidence-based recommendations at the point of care. Valuable systems are:

- Duplicate Therapy Warnings: Alerts for duplicate drugs
- Allergy Checking: Patient allergy checking
- Lab-Triggered Alerts: Abnormal result interventions

CDSS reduce prescribing errors by 40-60%, as rates are less than 15% (Rashid et al., 2019). alerts lead to alert fatigue, with over 90% override rates, reflecting safety benefits.

### **Mobile Communication Platforms**

- Timeliness of communication
- Fewer dependencies on paging systems

- Immediacy of consultation without delay
- Sharing of images and data
- Faster response rates to pressing issues

Installation of mobile communication systems reduces response time to drug issues by 50-70% and improves team satisfaction with communication by 60-80% (Johnson et al., 2021).

**Table 5: Technology Platforms Supporting Interdisciplinary Medication Management**

Platform Type	Key Features	Implementation Cost	Error Reduction	User Satisfaction	Evidence Level
Integrated EHR	Unified documentation, shared access, decision support	High (\$2-5M)	45-65%	65-75%	Strong
CDSS	Real-time alerts, evidence-based guidance	Moderate (\$500K-1M)	40-60%	55-70%	Strong
Mobile Communication	Secure messaging, rapid consultation	Low (\$50-100K)	25-35%	80-90%	Moderate
Telepharmacy	Remote pharmacist consultation	Moderate (\$200-500K)	30-45%	70-80%	Moderate
Laboratory Integration	Automated alerts, result notification	Moderate (\$300-600K)	35-50%	75-85%	Strong
AI/ML Algorithms	Predictive analytics, risk stratification	High (\$1-3M)	20-40%	60-75%	Emerging

**Table 6: Economic Impact of Interdisciplinary Medication Management Programs**

Study	Setting	Program Cost	Annual Savings	ROI Ratio	Payback Period
Thompson et al. (2023)	Academic medical center	\$850,000	\$3,200,000	3.8:1	3.2 months
Park et al. (2022)	Community hospital	\$180,000	\$650,000	3.6:1	3.3 months
Hassan et al. (2021)	ICU stewardship	\$320,000	\$1,800,000	5.6:1	2.1 months
Martinez et al. (2021)	Medical units	\$425,000	\$1,950,000	4.6:1	2.6 months
Williams et al. (2020)	Surgical units	\$290,000	\$1,100,000	3.8:1	3.2 months
Kumar et al. (2022)	Oncology	\$380,000	\$1,450,000	3.8:1	3.1 months
Davis et al. (2022)	Nephrology	\$210,000	\$820,000	3.9:1	3.1 months

### Economic Impact of Interdisciplinary Collaboration

#### Cost Savings Due to Avoided Errors

Medication errors are excessively expensive through unwarranted hospitalization, non-medication care, and court proceedings. Collaborative projects are free of cost savings due to:

- saves \$4,700-\$8,500 in direct cost (Wilson et al., 2021) due to avoided ADE

## **8. Discussion**

### **8.1. Criticism of the Evidence and its Relevance to the Saudi Environment**

In Saudi, GCC, or even any Arab health settings, inter-professional success is heavily dependent on local culture, communication among staff, and available healthcare infrastructure (Almalki et al., 2017).

The barriers section effectively identifies global to having the flat, team-based culture required to deliver effective collaboration (Alshamsi et al., 2020). As one specific example, the finding that 62% of nurses would not question drug orders (Mitchell et al., 2019) would be virtually certain to be exaggerated in a culture where deferential compliance to doctors is an entrenched tradition, unless specifically dealt with through culturally responsive training.

### **8.2. Situating the Findings in the Context of Saudi Arabia's Development in the Healthcare Field**

The relevance of the subject is greatest with the wide-ranging goals of Saudi Vision 2030, levying a huge responsibility on enhancing quality and efficacy of health care services. The Kingdom's program for transforming the health sector indeed favors well-integrated model care and patient safety initiatives (MOH, 2023). Interprofessional values of collaboration are thus not only beneficial but directly contributory to national health goals.

The economic benefit figures are especially persuasive to Saudi healthcare managers. Presented with an ROI of 3.6:1 to 5.6:1 and a payback period of only 2-4 months (as in Table 6) is a compelling budget-case for investment in cooperative plans. It meets Vision 2030's objective of creating more private sector involvement and greater fiscal strength for health.

### **8.3. A Call to Fill the Gap: Localized Research and Application**

The facilitators the facilitators have identified—strong leadership, interprofessional education, and technology—are global but must be localized. For example:

- Leadership and Organizational Support: The top-down structure of most Saudi healthcare organizations can be an excellent facilitator if there is leadership that begins to see things in support of collaboration, as required in the national transformation plan.

- Training and Education: Saudi hospitals and training universities must enhance the incorporation of Interprofessional Education (IPE) into training curricula with a goal of preparing a future projected health workforce capable of collaborative practice (Khan et al., 2022).

- Solutions through Technology: The Kingdom's vast investments in digital health, for instance, the Healthcare Integrated Platform ("Nphies"), present a historic opportunity of developing the integrated EHRs and communication tools upon which collaboration is founded.

One of the main shortcomings of the present evidence base is the lack of locally based studies. There is a specific need for King Faisal Specialist Hospitals, King Saud Medical Cities, and other tertiary centers to:

1. Apply rates of error reduction and ROI to Saudi contexts drawing on international literature.

2. Determine locally relevant barriers and facilitators.

3. Pilot test and establish implementation models that are sensitive to and build on local professional cultures.

Through critical examination of international evidence and observation of local practice and research, Saudi Arabia is not only able to adopt the best in the world but also to be able to generate value ideas specific to the international community of patient safety.

## **Future Directions and Innovations**

### **Telepharmacy and Virtual Collaboration**

Telepharmacy extends pharmacist services to remote areas without pharmacy presence. Its applications are:

- Remote authorization and review of medication orders
- Involvement in virtual interdisciplinary rounds
- Video consultation for patient counseling
- Real-time consultation for challenging medication decision-making
- Long off-hours shifts

Evidence indicates telepharmacy is as secure as in-patient pharmacy with more access to information from the pharmacy (Miller et al., 2020).

### **Pharmacogenomics Integration**

Pharmacogenomic screening guides the selection of medication according to one's own genetic difference that can affect drug action and metabolism. Multidisciplinary integration involves:

- Lab: Scheduling genetic testing and result interpretation
- Pharmacy: Translating the genetic information into prescribing the drug
- Registry and record building for nursing
- Shared Decision-Making: Optimal drugs selected on the basis of genetic profiles

Evidence indicates that treatment led by pharmacogenomics reduces ADEs 30-50% for highly genetically associated medicines (Patel et al., 2021).

### **Shared Decision-Making and Patient Engagement**

New models engage patients as active members of the drug team. Strategies:

- Patients are brought in rounds and drug discussions
- Tools enabling shared decision making regarding drug selection
- Medicine listings and patient-readable education materials
- Mobile health devices to track medicine and communicate
- Patient-reported outcome application

Evidence shows concomitant management of medicine by patients enhances 35-50% patient compliance and 40-60% patient satisfaction .

## Conclusion

Team working between nursing, pharmacy, and laboratory staff is a good patient safety approach to rationalize management of medicine. Evidence results attribute great value to collaborative interventions with 35-78% decreases in medication errors, and 30-68% decreases in adverse drug events, and with important cost savings and quicker return on investment. Evidence does not exist due to multi-dimensional obstacles such as professional silos, organizational systems, and communication systems. Organisations will be required to make a commitment to leadership-driven cultural change, funding, education, technology, and metrics. The strategies and models offered here are prescriptive directions for healthcare organizations to take in order to achieve improved medication safety through collaboration. With the drift of healthcare toward value-based care, in which value will be placed on safety, quality, and efficiency, inter-professional collaboration will become more essential. Emerging technologies like artificial intelligence, telepharmacy, and pharmacogenomics have potential for ongoing improvement in collaborative practice. But technology is facilitating and never a replacement for human option, collaboration, and communication.

The final objective of interprofessional practice exceeds prevention of error to a built-in change in the manner in which healthcare professionals collaborate in order to maximize drug use. As their separate knowledge is integrated together as a team by nurses, pharmacists, and laboratory staff, they constitute a net of defense protecting patients from drug-induced harm while optimizing therapeutic effect. Health care organizations that embark on the creation of collaborative cultures and systems risk becoming the greatest deliverers of high-quality, safe, patient-centered care.

There is a research agenda for the future that needs to take into account creating best-practice models of collaboration tailored for specific clinical settings, examine methods of attaining long-term collaborative program longevity, examine the patient as an active collaborator in a team, and expand the integration of new and emerging technology to support teamwork. Second, wider measures of value like patient experience, professional satisfaction, and organization reputation need to be integrated into economic analysis.

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