



**State Health Insurance Fund  
of the Republic of Uzbekistan**



# Artificial Intelligence for Health Insurance: Uzbekistan Perspective

**Dr. Mircea Buga**  
State Health Insurance Fund  
Republic of Uzbekistan



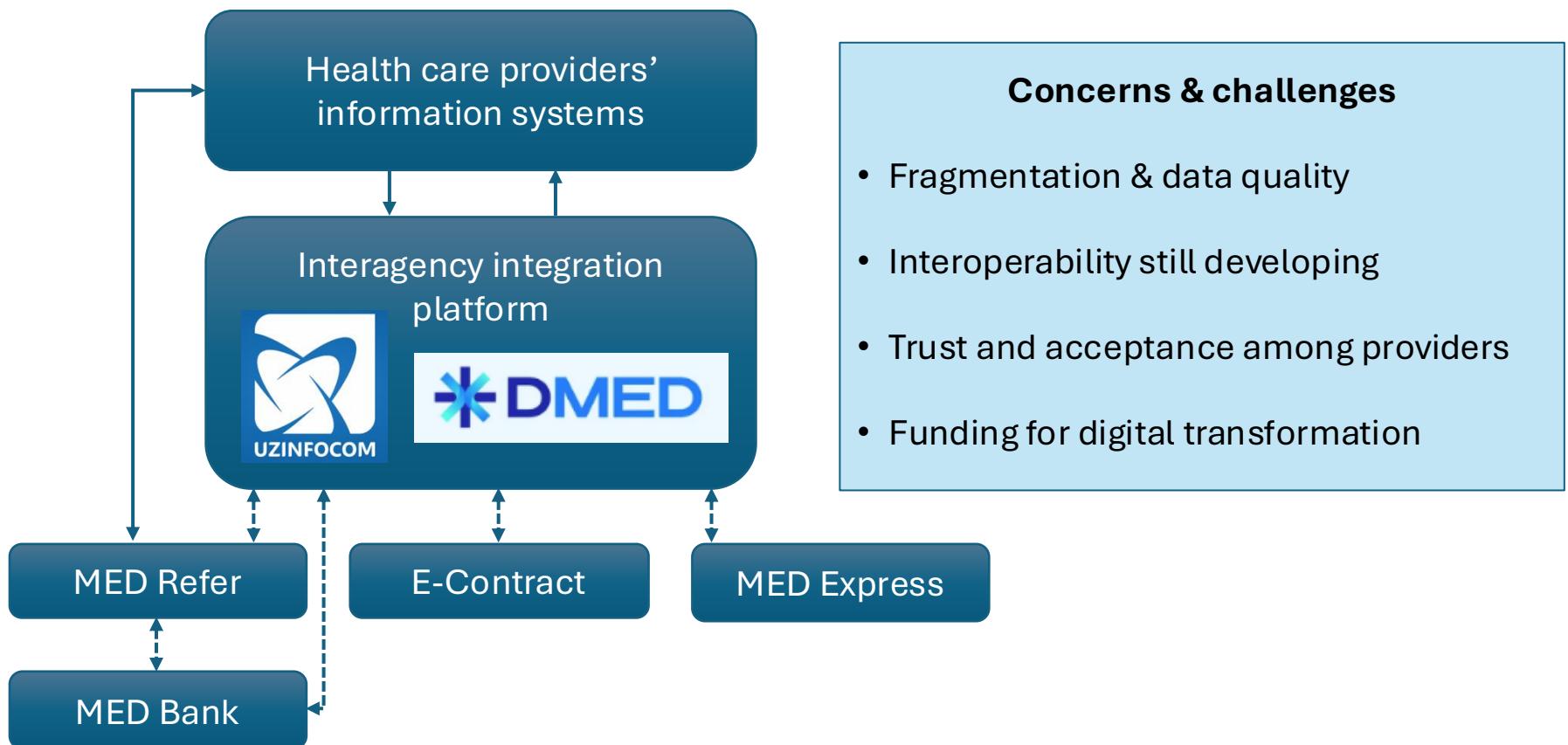
# Uzbekistan: map & demographics

- Population: ~38 million (2025 estimate)
- ~450 thousand km<sup>2</sup>
- Urban vs rural: ~50/50%
- Life expectancy: 75.1 (all), 72.5 (male), 76.9 (female)
- Health insurance coverage: ~100% (8 pilot regions), nationwide by the end of 2026 (+ 6 regions)





# Current information system architecture





## EShartnoma

- Concluded contracts: terms and financial amounts
- Contracted healthcare providers (public and private)
- Volume of contracted services



- Medicines reimbursement programme
- Contracted pharmacies
- Patients covered

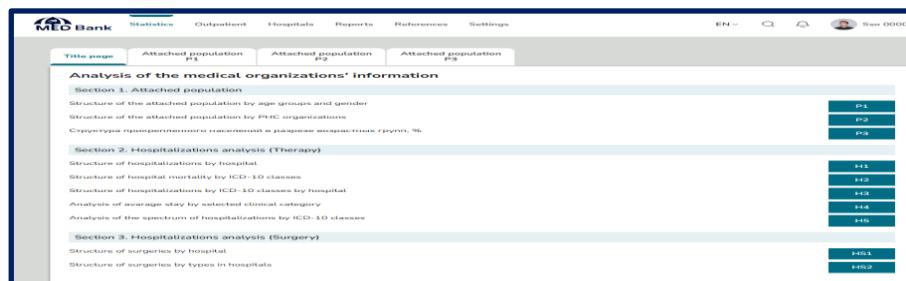
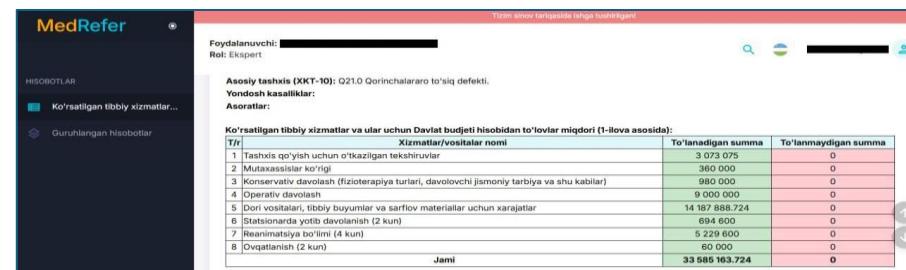
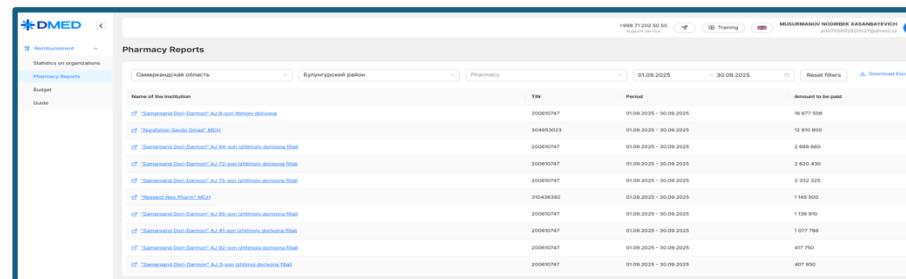
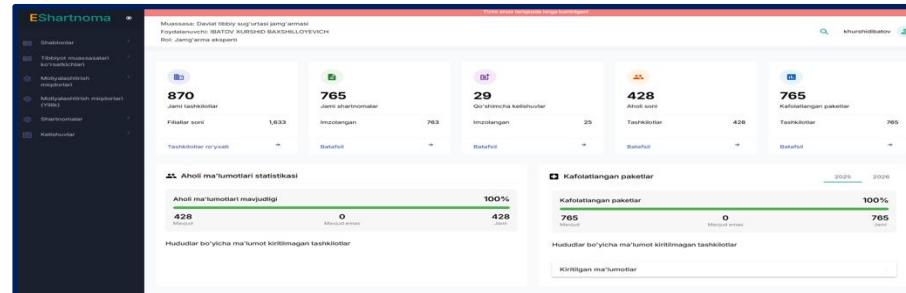
## MedRefer

- Guaranteed benefits package
- Beneficiary categories
- Tariffs for contracted services
- Referrals to specialized care



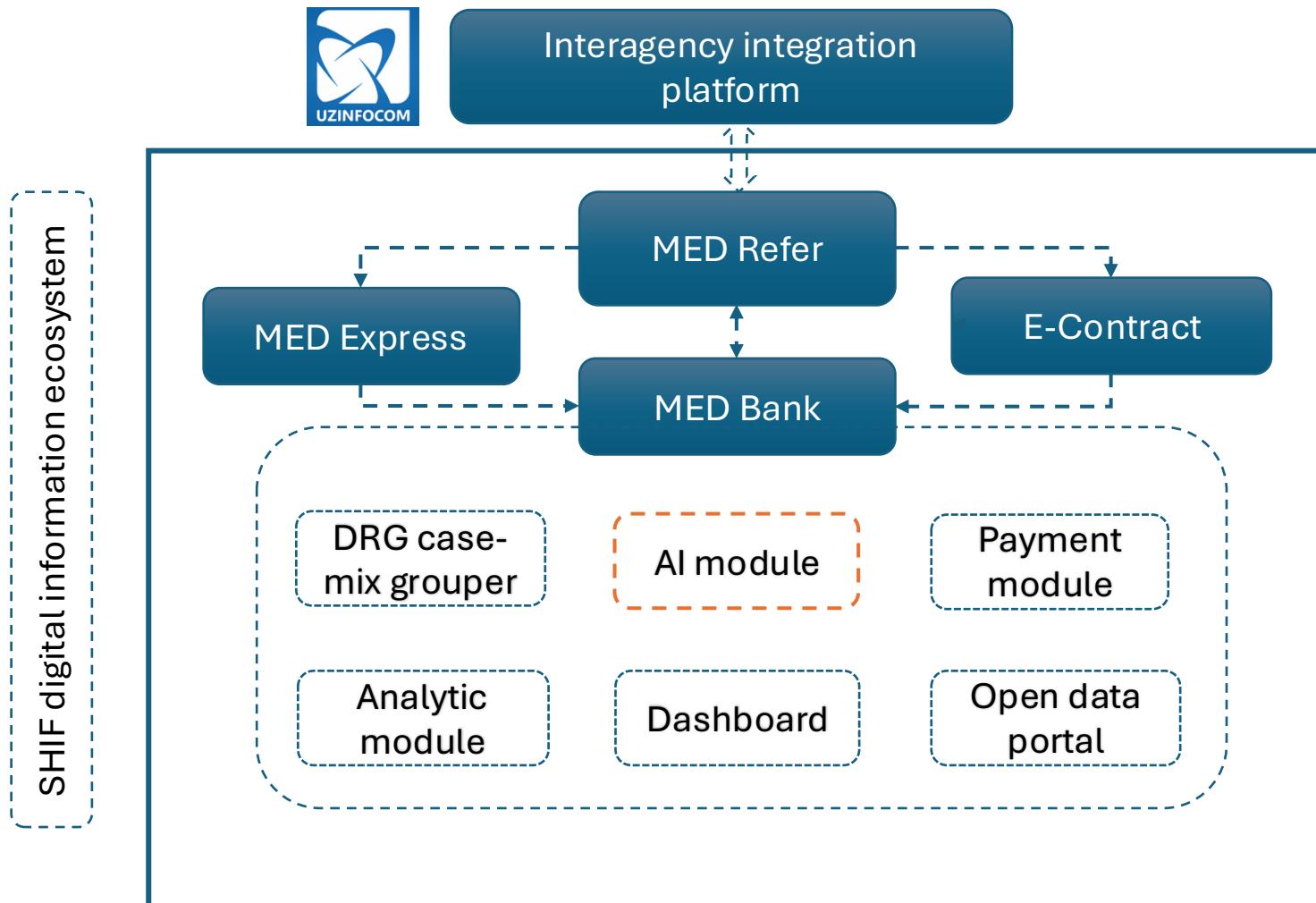
- Claims management (capitation in PHC, inpatient treated cases)
- DRG case-mix grouper
- Payment module

# SHIF's information systems





# Planned information system architecture



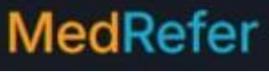


## Potential areas for AI use

- Claims automation for faster approvals
- Fraud detection: duplicate & abnormal claims
- Predictive analytics: service demand & financial needs
- Provider performance monitoring
- Policy support: tariff setting, budgeting



# Integration within existing IS framework

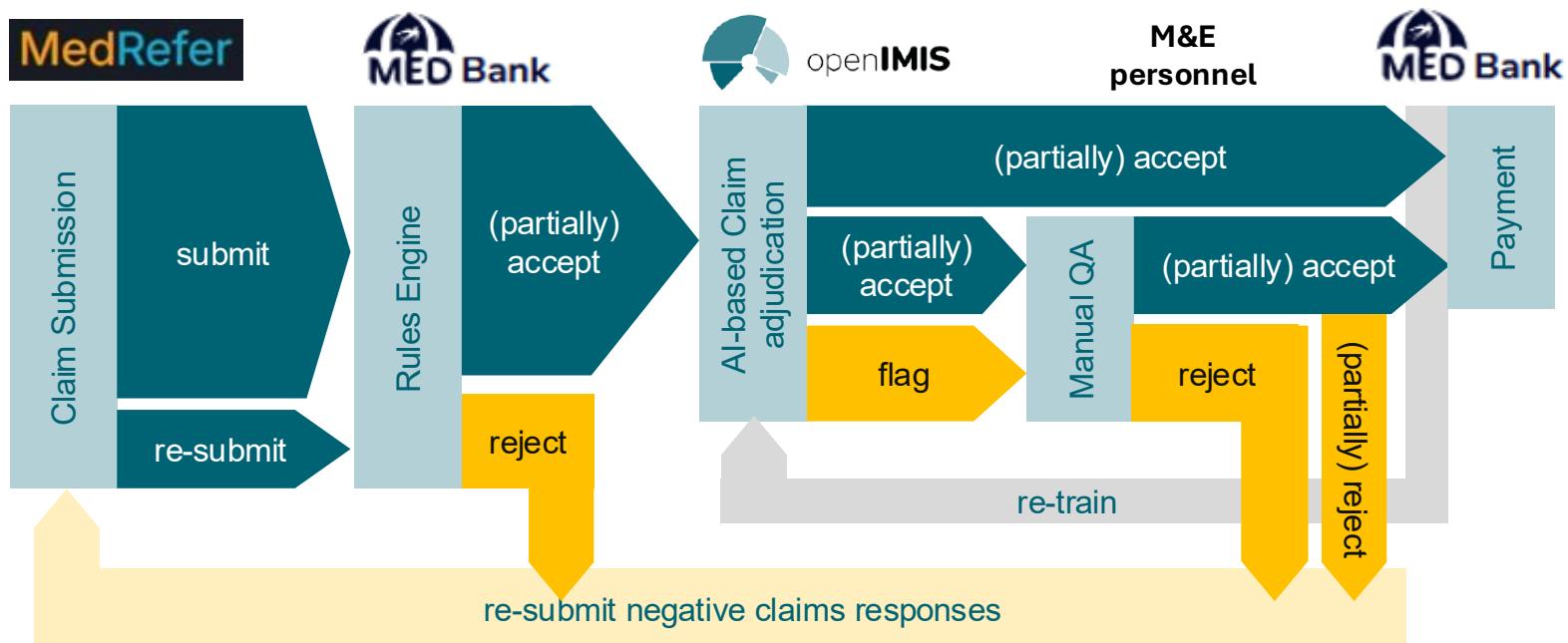
| Existing System   | Function   | AI integration opportunity  |
|---|--|---|
|    | Stores population registration data and socio-demographic profiles       | Use AI to detect duplicate enrollments, predict risk profiles, and forecast utilization trends                        |
|    | Holds patient medical histories and episodes of care, including for DRGs | Automate claims workflows; Identify frauds & risks; Enable predictive modeling for case severity and cost forecasting |
|   | Processes prescription reimbursements                                    | AI to identify prescription anomalies, assess therapeutic compliance, and forecast drug expenditure                   |
|  | Tracks referrals to specialized care                                     | Machine learning to analyze referral patterns and detect inefficiencies or overutilization                            |



# Implementation pathway (1)

**Assessment & planning:** Conduct an assessment across existing IS. Prioritize 2–3 high-impact use cases: in-patient claims categorization & fraud detection, and drug reimbursement analytics. Define AI scheme design & operationalization.

**Scheme design:** AI-based adjudication workflow





## Implementation pathway (2)

**Scheme operationalization:** Procurement of AI model training hardware. Upgrade existing hosting infrastructure. Recruit AI experts / data scientists.

**Adaptation:** Define data-sharing protocols. Localize AI algorithms to Uzbek data and coding standards (ICD-10, DRG codes, tariff catalogues, etc.). Integrate models via secure APIs into MED Bank test environment. Train SHIF staff. Establish AI monitoring dashboard.

**Pilot:** Start in Syrdarya region (existing pilot experience, manageable size ~900K population). Select 2–3 hospitals, ~20k claims, focus on in-patient services (later could be extended to out-patient). Track accuracy, adjudication time, coding consistency. Measure improvements and refine models.

**Scale-up:** Extend AI-supported modules nationwide with iterative model retraining. Embed AI-supported decision tools into SHIF's contract management and budgeting workflows.



**State Health Insurance Fund  
of the Republic of Uzbekistan**

*Thank you for your attention!*