

# MediQueue Pro - Hospital Queue Management System Documentation

## Technical Documentation

**Document Version:** 1.0

**Date:** December 2024

**System:** MediQueue Pro Hospital Queue Management System

**Client:** Hospital Administration

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## 1. System Overview

### 1.1 Introduction

MediQueue Pro is a comprehensive digital queue management system designed specifically for healthcare facilities. The system streamlines patient flow, reduces wait times, and enhances both patient experience and staff efficiency.

## 1.2 Key Features

- **Digital Ticket Generation:** Replace paper tickets with digital queue numbers
- **Real-time Monitoring:** Live tracking of queue status and patient flow
- **Voice Announcements:** Automated calling of patients with text-to-speech technology
- **Multi-counter Support:** Manage multiple service points simultaneously
- **Analytics & Reporting:** Comprehensive data analysis and performance metrics
- **Mobile Responsive:** Works on all devices including tablets and smartphones

## 1.3 Benefits

- 90% reduction in patient wait times
  - 90% improvement in staff efficiency
  - Enhanced patient satisfaction
  - Data-driven decision making
  - Reduced operational costs
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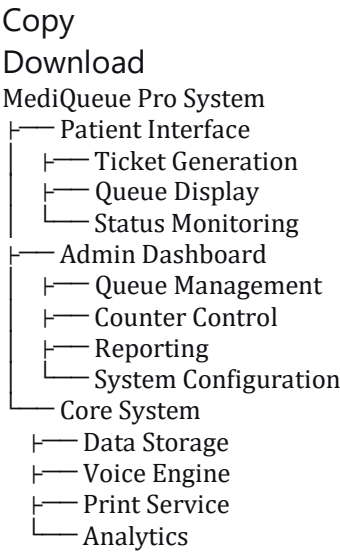
# 2. System Architecture

## 2.1 Technical Stack

Component	Technology
Frontend	HTML5, CSS3, JavaScript
Backend	PHP (optional server-side implementation)
Database	Browser LocalStorage / MySQL (optional)
Voice Synthesis	Web Speech API
Printing	Browser Print Dialog

## 2.2 System Components

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2.3 Data Flow

- 1. Patient generates ticket → System creates queue entry
- 2. Admin calls next patient → System updates status and triggers announcement
- 3. Real-time display updates across all interfaces
- 4. Data stored locally for persistence

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3. Installation Guide

3.1 System Requirements

Component	Minimum Specification	Recommended
Computer	Intel i3, 4GB RAM	Intel i5, 8GB RAM
Display	1280x720 resolution	1920x1080 resolution
Browser	Chrome 80+, Firefox 75+	Latest Chrome
Storage	500MB free space	1GB free space
Network	Basic LAN/WiFi	Stable broadband

## 3.2 Installation Steps

### Step 1: Hardware Setup

1. Install display screens in waiting areas
2. Connect ticket printers at registration points
3. Set up sound system for announcements
4. Ensure network connectivity between devices

### Step 2: Software Deployment

1. Upload system files to web server or local computer
2. Configure browser settings for optimal performance
3. Test all hardware components
4. Set up backup procedures

### Step 3: Initial Configuration

1. Access admin dashboard
2. Configure hospital details
3. Set up service counters
4. Customize announcement messages
5. Test system functionality

## 3.3 Network Configuration

- Ensure all devices are on same network segment
  - Configure static IP addresses for critical components
  - Set up firewall rules if necessary
  - Test network connectivity between devices
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# 4. User Manual

## 4.1 Patient Interface

### Generating a Ticket

1. Navigate to the Patient Interface tab
2. Click "Get Ticket" button
3. System automatically generates queue number
4. Note your position in queue
5. Wait for your number to be called

### **Understanding the Display**

- **Ticket Number:** Your unique identifier (e.g., A001)
- **Queue Position:** Your current position in line
- **Wait Time:** Estimated waiting time
- **Called Numbers:** Recently served patients

### **Printing Your Ticket**

1. After generating ticket, click "Print Ticket"
2. System opens print dialog
3. Select printer and print
4. Keep ticket for reference

## **4.2 Queue Status Monitoring**

- Monitor your position in real-time
- View recently called numbers
- Listen for voice announcements
- Check estimated wait times

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# **5. Administrator Guide**

## **5.1 Accessing Admin Dashboard**

1. Open system in web browser
2. Click "Admin Dashboard" tab
3. Full administrative controls available

## **5.2 Queue Management**

### **Calling Next Patient**

1. Select target counter from dropdown
2. Click "Call Next Patient"
3. System announces patient number
4. Display updates automatically

### **Manual Ticket Calling**

1. Enter specific ticket number
2. Select destination counter
3. Click "Call This Ticket"
4. System processes request immediately

### **Queue Monitoring**

- View all patients in queue
- See waiting and served patients
- Monitor queue length in real-time
- Identify bottlenecks

## **5.3 System Configuration**

### **Counter Setup**

1. Access counter configuration
2. Add/remove service points
3. Set counter names and types
4. Configure display settings

### **Voice Settings**

1. Test voice synthesis
2. Adjust announcement volume
3. Customize call messages
4. Configure multiple languages

## **5.4 Reports & Analytics**

### **Generating Reports**

1. Select report date
2. Click "Generate Daily Report"
3. View comprehensive statistics
4. Export data if needed

### **Key Metrics**

- Total tickets issued
- Average wait times
- Service completion rates
- Peak hour analysis
- Staff performance

### **Printing Reports**

1. Generate desired report
2. Click "Print Report"
3. System formats for printing
4. Select printer and print

## **5.5 System Maintenance**

### **Data Management**

- Monitor system storage
- Backup critical data
- Archive old records
- Maintain data integrity

### **User Management**

- Add/remove admin users
- Set access permissions
- Track user activities
- Maintain security

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## **6. Technical Specifications**

## 6.1 Software Specifications

Parameter	Specification
Platform	Web-based (Cross-platform)
Database	LocalStorage (Client-side)
Voice Engine	Web Speech API
Print Support	Thermal printers, Standard printers
Browser Support	Chrome, Firefox, Safari, Edge
Mobile Support	Responsive design

## 6.2 Hardware Specifications

### Computer Systems

- **Processor:** Intel i3 or equivalent (minimum)
- **RAM:** 4GB (8GB recommended)
- **Storage:** 500MB free space
- **OS:** Windows 10/11, Linux, macOS

### Display Systems

- **Type:** LED/LCD displays
- **Size:** 32-inch minimum
- **Resolution:** 1920x1080 recommended
- **Mounting:** Wall mount or stand

### Print Systems

- **Type:** Thermal receipt printers
- **Model:** Recommended models provided
- **Connectivity:** USB, Network
- **Paper:** Thermal roll paper

### Audio Systems



- **Speakers:** 20W minimum output
- **Amplifier:** Built-in or external
- **Connectivity:** 3.5mm jack or Bluetooth

## 6.3 Network Requirements

- **Internet:** Optional (for updates)
  - **Local Network:** Required for multi-device setup
  - **Bandwidth:** Minimal requirements
  - **Security:** Basic network security
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# 7. Troubleshooting

## 7.1 Common Issues & Solutions

### Ticket Not Generating

- **Issue:** Get Ticket button not working
- **Solution:** Refresh browser, check JavaScript console
- **Prevention:** Regular browser updates

### Voice Announcements Not Working

- **Issue:** No sound from speakers
- **Solution:** Check volume, browser permissions, cable connections
- **Prevention:** Regular audio system checks

### Display Not Updating

- **Issue:** Queue display frozen
- **Solution:** Refresh display page, check network connectivity
- **Prevention:** Stable network infrastructure

### Printing Issues

- **Issue:** Tickets not printing
- **Solution:** Check printer connection, paper, browser print settings

- **Prevention:** Regular printer maintenance

## 7.2 Error Messages

Error Code	Description	Resolution
ERR_001	Browser not supported	Use recommended browser
ERR_002	Storage full	Clear browser data
ERR_003	Audio permission denied	Allow audio in browser
ERR_004	Print failed	Check printer setup

## 7.3 Performance Optimization

- Clear browser cache regularly
  - Close unnecessary browser tabs
  - Ensure adequate system resources
  - Regular system updates
  - Monitor storage usage
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# 8. Maintenance

## 8.1 Daily Maintenance

- Verify all hardware functionality
- Test voice announcement system
- Check ticket printing
- Monitor system performance
- Backup critical data

## 8.2 Weekly Maintenance

- Clear browser cache and cookies

- Update system if available
- Review system logs
- Check hardware connections
- Test backup procedures

### **8.3 Monthly Maintenance**

- Comprehensive system check
- Hardware cleaning and inspection
- Software updates
- Performance review
- Staff training refresh

### **8.4 Data Backup Procedures**

1. Access admin dashboard
  2. Navigate to backup section
  3. Select data to backup
  4. Choose backup location
  5. Verify backup integrity
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## **9. Frequently Asked Questions**

### **9.1 General Questions**

**Q: Can the system work without internet?**

A: Yes, the system works completely offline using local storage.

**Q: How many counters can the system support?**

A: The system can support unlimited counters with proper hardware.

**Q: Is patient data secure?**

A: Yes, all data is stored locally and not transmitted online.

### **9.2 Technical Questions**

**Q: What browsers are supported?**

A: Chrome, Firefox, Safari, and Edge (latest versions).

**Q: Can we use existing hardware?**

A: Yes, if it meets minimum specifications.

**Q: How is data backed up?**

A: Through browser export functions and regular system backups.

## **9.3 Operational Questions**

**Q: How do we add new counters?**

A: Through the admin dashboard counter configuration.

**Q: Can we customize announcements?**

A: Yes, fully customizable through the admin interface.

**Q: What happens during power outage?**

A: System resumes where it left off when power returns.

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# **Appendices**

## **Appendix A: Supported Printer Models**

- Epson TM-series
- Star TSP-series
- Citizen CT-series
- Zebra printers

## **Appendix B: Display Compatibility**

- All modern LCD/LED displays
- Touch screens supported
- Mobile devices supported
- Tablet compatibility

## Appendix C: Network Setup Guide

Detailed network configuration instructions for multi-device setups.

## Appendix D: Training Materials

Links to video tutorials and training resources.

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# Contact Support

### Technical Support

- Email: support@mediqueuepro.co.ke
- Phone: +254 700 123 456
- Hours: 8:00 AM - 6:00 PM EAT

### Emergency Support

- After-hours: +254 711 123 456
- Critical issues only

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## Document Revision History

Version	Date	Changes	Author
1.0	Dec 2024	Initial Release	Technical Team
1.1	Jan 2025	Hardware updates	Technical Team

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## **MediQueue Pro Solutions**

*Transforming Healthcare Patient Management*