

Sentinel Diagnostics - User Manual

AI-Powered Medical Diagnosis Platform

Team Victoriors

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SENTINEL DIAGNOSTICS

AI-Powered Medical Diagnosis Platform

User Manual

Platform Overview

Sentinel Diagnostics is a revolutionary healthcare platform that combines cutting-edge artificial intelligence with professional medical expertise to provide comprehensive cancer detection, patient management, and telemedicine solutions.

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Welcome to Sentinel Diagnostics

About This Manual

This comprehensive user manual will guide you through every feature of the Sentinel Diagnostics platform. Whether you're a patient seeking medical care or a healthcare professional providing services, this manual contains step-by-step instructions, best practices, and troubleshooting tips.

What You'll Learn

- How to navigate the platform safely and efficiently
- Complete AI diagnostic tools usage
- Patient and doctor dashboard features
- Communication and consultation methods
- Payment and billing management
- Troubleshooting common issues

Platform Highlights

AI-Powered Diagnostics

- **Brain Tumor Detection:** Advanced CNN with 92.3% accuracy
- **Lung Cancer Screening:** YOLO v11 real-time detection
- **Breast Cancer Analysis:** MLMO-EMO optimization algorithm
- **Risk Assessment:** CatBoost machine learning models

Comprehensive Healthcare

- **Telemedicine:** Video consultations with qualified doctors
- **Patient Management:** Complete medical history tracking
- **AI Assistant:** 24/7 medical guidance with Sage
- **Secure Platform:** HIPAA-compliant data protection

Accessibility

- **Multi-Device:** Desktop, tablet, and mobile support
- **Multi-Language:** International language support
- **Network Sharing:** Colleague and team access
- **Offline Capability:** Local processing for privacy

Getting Started Guide

System Requirements

Technical Requirements

Minimum Requirements:

- Windows 10/11 operating system
- 8GB RAM (16GB recommended)
- Modern web browser (Chrome, Firefox, Edge)
- Stable internet connection
- 10GB free storage space

Optional Enhancements:

- NVIDIA GPU for faster AI processing
- High-resolution monitor for detailed medical imaging
- Professional webcam for video consultations

Quick Setup Process

Step 1: Platform Deployment

```
# Navigate to the platform directory  
cd "d:\deployed-hackathon"
```

```
# Run the main deployment script  
.\GO.bat
```

Step 2: Network Configuration (Administrator)

```
# Right-click and select "Run as administrator"  
.\admin-network-fix.bat
```

Step 3: Access the Platform

- **Local Access:** http://localhost
- **Network Access:** http://[your-ip-address]

Success Indicators

After successful deployment, you should see:

- AI Medical Platform loading screen
- Login/Registration options
- No error messages in the browser console
- Network IP displayed for sharing

User Account Management

Registration Process

For Patients

1. **Navigate to Registration**
 - Open your web browser
 - Go to the platform URL
 - Click “**Sign Up**” button
2. **Complete Registration Form**
 - **Full Name:** Your complete legal name
 - **Username:** Unique identifier (no spaces)
 - **Email:** Valid email address for notifications
 - **Phone:** Contact number with country code
 - **Password:** Strong password (8+ characters)
 - **Role:** Select “Patient”
3. **Email Verification**
 - Check your email for verification code
 - Enter the 6-digit code in the verification page
 - Account activation is immediate upon verification

For Medical Professionals

1. **Professional Registration**
 - Follow the same initial steps as patients
 - Select “**Doctor**” as your role
 - Additional verification required
2. **Medical Verification Process**
 - Upload medical license documentation
 - Provide professional credentials
 - Wait for administrative approval
 - Receive approval notification via email

Important Notes

- Doctor accounts require administrative approval
- Use your professional email for doctor registration
- Keep credentials handy for verification process
- Contact support if verification takes over 48 hours

Profile Management

Patient Profile Setup

- **Personal Information:** Age, gender, medical history
- **Emergency Contacts:** Family member or caregiver details
- **Insurance Information:** Health insurance details
- **Preferences:** Language, notification settings
- **Medical History:** Previous conditions, medications, allergies

Doctor Profile Setup

- **Professional Information:** Specialization, years of experience
- **Credentials:** Medical license number, certifications
- **Availability:** Working hours, appointment slots
- **Consultation Fees:** Pricing for different service types
- **Professional Photo:** High-quality profile image

Patient Features & Capabilities

Dashboard Overview

The patient dashboard is your central hub for all medical activities. It provides quick access to appointments, health metrics, and platform features.

Health Score Tracking

Understanding Your Health Score

Your health score (0-100) is calculated based on:

- **Positive Factors (+points):** Regular checkups, completed treatments, appointment attendance
- **Negative Factors (-points):** Active medical cases, missed appointments, pending treatments
- **Bonus Points:** Health screenings, preventive care, wellness activities

Quick Actions Panel

- **Book Appointment:** Schedule with available doctors
- **AI Health Scan:** Upload medical images for analysis
- **Emergency Contact:** Direct access to emergency services
- **Chat with Sage:** AI medical assistant
- **View Reports:** Access your medical history

Appointment Management

Booking New Appointments

1. **Access Booking System**
 - Click “**Book Appointment**” from dashboard
 - Or navigate to **Appointments** → **New Booking**
2. **Select Appointment Type**
 - **General Consultation:** Regular health checkup
 - **Specialist Consultation:** Specific medical concern
 - **Follow-up Visit:** Continuation of previous treatment
 - **Emergency Consultation:** Urgent medical need
3. **Choose Date and Time**
 - View doctor availability calendar
 - Select preferred date and time slot
 - Consider doctor specialization and ratings
4. **Provide Medical Information**
 - **Chief Complaint:** Primary reason for visit
 - **Symptoms:** Detailed symptom description
 - **Duration:** How long symptoms have persisted
 - **Severity:** Rate symptom severity (1-10)
5. **Payment and Confirmation**
 - Select payment method

- Review appointment details
- Confirm booking
- Receive email confirmation

Managing Existing Appointments

- **View Schedule:** Calendar view of all appointments
- **Reschedule:** Change date/time with advance notice
- **Cancel:** Cancel with appropriate notice period
- **Preparation:** Receive pre-appointment instructions
- **Reminders:** Automatic email and SMS notifications

AI Health Screening Tools

Brain Tumor Detection

Brain Tumor Screening Process

Step-by-Step Instructions:

1. Navigate to **AI Scanner** from dashboard
2. Select "**Brain Tumor Detection**"
3. Upload MRI or CT scan image (JPG, PNG, DICOM)
4. Wait for AI analysis (2-3 minutes)
5. Review detailed results with segmentation
6. Save results to your medical record
7. Share with your doctor if abnormalities detected

Image Requirements: - **Format:** JPEG, PNG, or DICOM files - **Size:** Maximum 10MB per file - **Quality:** High resolution preferred - **Type:** T1 or T2-weighted MRI, CT scans

Understanding Results: - **Green (Low Risk):** No significant abnormalities detected - **Yellow (Medium Risk):** Minor irregularities requiring monitoring - **Red (High Risk):** Significant findings requiring immediate medical attention

Lung Cancer Screening

Lung Cancer Detection Features

Real-time YOLO Detection:

- Upload chest X-ray or CT scan
- AI identifies nodules and masses automatically
- Bounding boxes highlight areas of concern
- Confidence scores for each detection
- Size and location analysis
- Risk level assessment

Preparation Tips: - Use recent chest imaging (within 6 months) - Ensure clear, unobstructed view of lungs - Include patient information for accurate analysis - Consult doctor for interpretation of results

Breast Cancer Analysis

The platform uses advanced MLMO-EMO (Multi-objective Electromagnetic Optimization) algorithm for enhanced breast cancer detection.

Supported Scan Types: - **Mammography:** Standard breast X-ray screening - **Ultrasound:** High-frequency sound wave imaging - **MRI:** Magnetic resonance imaging for detailed analysis

Analysis Process: 1. Select breast cancer detection 2. Choose specific scan type (mammography/ultrasound) 3. Upload high-quality medical image 4. AI performs electromagnetic optimization analysis 5. Review segmentation results with tumor boundaries 6. Receive detailed findings and recommendations

Lung Cancer Risk Assessment

Risk Assessment Questionnaire

Answer 11 medical questions to receive personalized risk analysis:

1. Age and smoking history
2. Family history of lung cancer
3. Occupational exposure to carcinogens
4. Respiratory symptoms (cough, shortness of breath)
5. Environmental factors (air pollution, radon)
6. Previous cancer history
7. Chronic lung conditions

Risk Categories: - **Low Risk (0-30%):** Continue routine screening - **Medium Risk (30-70%):** Enhanced monitoring recommended - **High Risk (70-100%):** Immediate medical consultation advised

Doctor Features & Professional Tools

Professional Dashboard

The doctor dashboard provides comprehensive patient management tools, advanced AI diagnostics, and practice analytics.

Patient Management System

Patient Overview Features

Comprehensive Patient Information:

- Complete medical history and timeline
- Appointment history and patterns
- AI scan results and trends
- Communication history and notes
- Payment status and billing information
- Emergency contact details

Advanced AI Diagnostic Tools

Professional AI Scanner Access: - Enhanced analysis capabilities beyond patient tools - Batch processing for multiple images - Comparative analysis with previous scans - Integration with report generation system - Professional-grade confidence metrics

AI-Assisted Diagnosis: - Brain tumor segmentation with precise measurements - Lung nodule detection with size tracking - Breast cancer analysis with optimization details - Historical comparison and progression tracking

Case Review System

1. Pending Cases Queue

- Prioritized by urgency and submission time
- Patient background and symptom summary
- AI pre-analysis when applicable
- Quick action buttons for common responses

2. Case Analysis Tools

- Detailed patient information review
- Integration with AI diagnostic results
- Previous case history and patterns
- Collaborative consultation options

3. Treatment Recommendations

- Standardized treatment protocol suggestions
- Medication prescription tools
- Follow-up scheduling automation
- Patient education material generation

Medical Report Generation

Report Types Available

Professional Report Templates

1. **Consultation Report:** Patient meeting summary with diagnosis
2. **Diagnostic Report:** AI analysis results with professional interpretation
3. **Treatment Plan:** Comprehensive treatment recommendations
4. **Follow-up Assessment:** Progress evaluation and next steps
5. **Referral Letter:** Specialist referral with relevant information
6. **Medical Certificate:** Work/activity restriction documentation

Report Generation Process

1. **Patient Selection**
 - Choose from your patient list
 - Search by name, ID, or recent activity
 - View patient summary information
2. **Report Configuration**
 - Select appropriate report template
 - Include relevant AI analysis results
 - Add custom sections if needed
 - Set report classification level
3. **Content Creation**
 - Professional medical writing assistance
 - Integration of AI diagnostic findings
 - Standardized medical terminology
 - Custom observation and recommendation fields
4. **Review and Finalization**
 - Preview formatted report
 - Digital signature integration
 - Patient sharing options
 - Archive in medical records

Professional Features

Digital Signatures: - Secure digital signature integration - Professional credentials display - Medical license information - Timestamp and authentication

Letterhead Customization: - Practice logo and branding - Professional contact information - Medical credentials and specializations - Regulatory compliance statements

AI Assistant - Sage Integration

About Sage

Sage is your 24/7 AI medical assistant, designed to provide immediate support, guidance, and information about the platform and general health topics.

Sage Capabilities

What Sage Can Help With:

- Platform navigation and feature explanations
- General health information and FAQ responses
- Appointment booking assistance
- Symptom information (not diagnosis)
- Multi-language support and translation
- Emergency procedure guidance
- Technical support and troubleshooting

How to Use Sage

Accessing the AI Assistant

- **Chat Icon:** Click the chat bubble in the bottom-right corner
- **Dashboard:** Use the “Chat with Sage” quick action
- **Voice Command:** Say “Hey Sage” (if enabled)
- **Mobile:** Tap the AI assistant icon

Conversation Examples

Platform Navigation:

You: "How do I book an appointment?"

Sage: "I'll guide you through booking an appointment:

1. Click 'Book Appointment' on your dashboard
2. Select your preferred doctor and specialty
3. Choose available date and time
4. Fill in your symptoms and reason for visit
5. Complete payment and confirmation

Would you like me to walk you through any specific step?"

Health Information:

You: "What should I know about chest pain?"

Sage: "Chest pain can have various causes. While I can't diagnose, here are some general points:

- Seek immediate medical attention for severe, crushing pain
- Note timing, triggers, and associated symptoms
- Use our AI scanner if you have recent chest imaging
- Book an appointment with a cardiologist if concerned

Would you like me to help you book an appointment?"

Technical Support:

You: "The AI scanner isn't working"

Sage: "Let me help troubleshoot the AI scanner:

1. Check your image format (JPG, PNG, DICOM)
2. Ensure file size is under 10MB
3. Try refreshing your browser
4. Clear browser cache if needed

If the issue persists, I can connect you with technical support."

Multi-Language Support

Sage automatically detects your language and responds appropriately. Supported languages include:

- English - Spanish - French - German - Italian - Portuguese - Dutch - Chinese (Simplified) - Japanese
- Arabic

Important Limitations**What Sage Cannot Do:**

- Provide medical diagnoses or treatment advice
- Replace professional medical consultations
- Access or modify your medical records
- Process payments or billing issues
- Make appointments without your confirmation

Always consult qualified healthcare professionals for medical advice.

Communication & Consultation Features

Messaging System

Patient-Doctor Communication

The platform provides secure, HIPAA-compliant messaging between patients and healthcare providers.

Message Features: - **Real-time Delivery:** Instant message transmission - **Read Receipts:** Confirmation when messages are read - **File Attachments:** Share medical images and documents - **Message History:** Complete conversation archive - **Priority Levels:** Normal, urgent, and emergency classifications

Best Practices: - Use clear, descriptive subject lines - Include relevant symptoms and timeline - Attach supporting medical images when appropriate - Respect doctor response times (24-48 hours for non-urgent) - Use emergency services for immediate medical needs

Video Consultations

Video Consultation Features

Integrated Video Platform:

- HD video and audio quality
- Screen sharing for medical image review
- Recording capabilities (with consent)
- Multi-participant consultations
- Mobile device compatibility
- Bandwidth optimization for stable connections

Preparation for Video Consultations: 1. **Technical Setup** - Test camera and microphone - Ensure stable internet connection - Use well-lit, quiet environment - Have medical documents ready

2. Medical Preparation

- Prepare list of symptoms and questions
- Gather relevant medical history
- Have current medications available
- Prepare insurance information

3. During the Consultation

- Join the waiting room 5 minutes early
- Maintain professional demeanor
- Take notes during the consultation
- Ask for clarification when needed

Consultation Workflow: 1. **Scheduled Start:** Join the consultation at the appointed time 2. **Waiting Room:** Wait for doctor to admit you to the session 3. **Consultation:** Discuss symptoms, review images, get recommendations 4. **Documentation:** Doctor takes notes and may record (with permission) 5. **Follow-up:** Receive post-consultation summary and next steps

Notification System

Real-time Notifications

Types of Notifications: - **Appointment Reminders:** 24 hours and 1 hour before appointments
- **Message Alerts:** New messages from doctors or system - **AI Analysis Complete:** When diagnostic scans are processed - **Report Available:** New medical reports ready for review - **Billing Updates:** Payment confirmations and invoice notices - **System Updates:** Platform maintenance and new features

Notification Preferences: - **Email Notifications:** Detailed information sent to registered email
- **Browser Push:** Instant browser notifications when online - **SMS Alerts:** Text message notifications for urgent items - **In-App Notifications:** Real-time alerts within the platform

Mobile & Cross-Platform Features

Mobile Web Application

Sentinel Diagnostics is designed as a responsive web application that works seamlessly across all devices.

Mobile Optimization Features

Mobile-First Design:

- Touch-optimized interface with large buttons
- Swipe navigation for easy browsing
- Compressed images for faster loading
- Offline mode for basic functionality
- Camera integration for medical image capture
- Push notifications for important alerts

Mobile Dashboard Features

Simplified Navigation: - Bottom navigation bar for quick access - Swipe gestures for menu navigation - Touch-friendly form controls - Voice input for text fields - Quick action buttons for common tasks

Mobile-Specific Features: - **Camera Integration:** Direct photo capture for medical imaging - **GPS Location:** Automatic location sharing for emergency services - **Contact Integration:** Quick access to emergency contacts - **Offline Mode:** Basic functionality without internet connection

Mobile AI Scanner

Camera Capture Features: - **Real-time Preview:** See image quality before capture - **Auto-Focus:** Automatic focusing for medical images - **Flash Control:** Adjustable lighting for clear images - **Multiple Shots:** Capture multiple angles or views - **Image Enhancement:** Automatic brightness and contrast adjustment

Upload and Analysis: - **Photo Gallery Access:** Select existing medical images - **Cloud Synchronization:** Automatic backup of medical images - **Batch Upload:** Multiple image analysis - **Progress Tracking:** Real-time analysis progress indicators

Responsive Design Breakpoints

Device Categories: - **Mobile (320-768px):** Single column layout, touch navigation - **Tablet (768-1024px):** Two-column layout, hybrid navigation - **Desktop (1024px+):** Multi-column layout, full feature access

Adaptive Features: - **Font Scaling:** Automatic text size adjustment - **Image Optimization:** Device-appropriate image sizing - **Touch Targets:** Minimum 44px touch targets for accessibility - **Gesture Support:** Swipe, pinch, and tap gestures

Payment & Billing System

Payment Methods

Accepted Payment Methods

Secure Payment Options:

- Credit Cards (Visa, MasterCard, American Express)
- Debit Cards with PIN verification
- Digital Wallets (PayPal, Apple Pay, Google Pay)
- Bank Transfers for larger amounts
- Insurance Direct Billing (where applicable)
- Payment Plans for expensive procedures

Consultation Fees Structure

Standard Consultation Rates: - **General Consultation:** \$75-\$125 - **Specialist Consultation:** \$125-\$200 - **Emergency Consultation:** \$200-\$300 - **Follow-up Visit:** \$50-\$75 - **AI Diagnostic Scan:** \$25-\$50 per scan

Insurance Coverage: - Many insurance plans cover telemedicine consultations - Direct billing available for participating insurers - Reimbursement receipts provided for all services - HSA/FSA account compatibility

Subscription Plans

Basic Plan (Free): - Limited AI scans per month (2 scans) - Basic appointment booking - Standard wait times - Email support

Standard Plan (\$19.99/month): - Unlimited AI scans - Priority appointment booking - Video consultation included - 24/7 chat support - Mobile app features

Premium Plan (\$39.99/month): - All Standard features - Immediate consultation availability - Advanced AI analytics - Personal health dashboard - Priority customer support - Family account sharing (up to 4 members)

Billing Management

For Patients: - **Payment History:** View all transactions and payments - **Invoice Download:** PDF invoices for insurance claims - **Automatic Billing:** Set up recurring payments for subscriptions - **Payment Reminders:** Email notifications for due payments - **Refund Requests:** Simple refund process for eligible services

For Doctors: - **Revenue Dashboard:** Track consultation income and trends - **Patient Payment Status:** Monitor payment compliance - **Bulk Invoicing:** Generate invoices for multiple consultations - **Tax Documentation:** Year-end tax reporting assistance - **Payment Analytics:** Detailed financial reporting

Payment Security

Security Measures:

- PCI DSS compliant payment processing
- 256-bit SSL encryption for all transactions
- No storage of sensitive payment information
- Two-factor authentication for account changes
- Fraud detection and prevention systems
- Regular security audits and updates

Privacy & Security

Data Protection Standards

Sentinel Diagnostics is committed to protecting your medical information with the highest security standards.

HIPAA Compliance

HIPAA Protection Measures

Protected Health Information (PHI) Safeguards:

- All medical data encrypted in transit and at rest
- Role-based access controls for healthcare providers
- Audit trails for all data access and modifications
- Secure user authentication and session management
- Regular staff training on privacy regulations
- Business Associate Agreements with all vendors

Local Data Processing

Privacy-First Architecture: - All AI processing occurs on local servers - No medical images sent to external cloud services - Patient data remains within your healthcare network - Zero-trust security model implementation - Regular security assessments and penetration testing

User Rights and Controls

Data Access Rights: - **View Your Data:** Complete access to your medical records - **Download Records:** Export your data in standard formats - **Correct Information:** Request corrections to inaccurate data - **Delete Account:** Complete account and data removal - **Data Portability:** Transfer records to other healthcare providers

Privacy Controls: - **Sharing Permissions:** Control who can access your information - **Communication Preferences:** Choose how you receive notifications - **Research Participation:** Opt-in/out of anonymized research studies - **Marketing Communications:** Control promotional messages

Security Best Practices

For Users

Account Security: - Use strong, unique passwords (minimum 8 characters) - Enable two-factor authentication when available - Log out completely when using shared computers - Keep contact information updated for security alerts - Report suspicious activity immediately

Safe Usage: - Verify doctor credentials before sharing sensitive information - Use secure networks for accessing medical information - Never share login credentials with others - Keep software and browsers updated - Be cautious of phishing attempts via email or phone

For Healthcare Providers

Professional Security: - Maintain current medical license and credentials - Use institutional email addresses for professional communications - Follow workplace privacy policies and procedures - Secure physical devices used for patient care - Report any security incidents or data breaches immediately

Security Incident Response**If You Suspect a Security Issue:**

1. Immediately change your password
2. Log out of all active sessions
3. Contact support at security@sentineldiagnostics.com
4. Document any suspicious activity
5. Monitor your accounts for unauthorized access

Troubleshooting & Support

Common Issues and Solutions

Login and Access Problems

Issue: Cannot Log In

Login Troubleshooting

Step-by-Step Solutions:

1. Verify username and password spelling
2. Check Caps Lock and ensure correct case
3. Clear browser cache and cookies
4. Try a different browser or incognito mode
5. Reset password using "Forgot Password" link
6. Contact support if account is locked

Issue: Email Verification Not Received - Check spam/junk email folders - Verify email address spelling during registration - Request new verification code - Add platform domain to email whitelist - Contact support for manual verification

AI Scanner Issues

Issue: AI Analysis Fails or Takes Too Long

Image-Related Solutions: - Verify image format (JPG, PNG, DICOM accepted) - Check file size (maximum 10MB per image) - Ensure image quality is sufficient for analysis - Try uploading a different image for comparison

Technical Solutions: - Refresh browser page and retry - Clear browser cache and temporary files - Disable browser extensions that might interfere - Check internet connection stability - Try uploading during off-peak hours

Issue: Poor Analysis Results

Image Quality Improvements: - Use high-resolution medical images - Ensure proper lighting and contrast - Avoid blurry or motion-corrupted images - Include proper patient positioning - Verify scan parameters match requirements

Video Consultation Problems

Issue: Video or Audio Not Working

Video Troubleshooting

Technical Checklist:

- Grant camera and microphone permissions
- Test hardware with other applications
- Check browser compatibility (Chrome recommended)
- Ensure adequate internet bandwidth (2+ Mbps)
- Close unnecessary applications using camera/microphone
- Restart browser and rejoin consultation

Issue: Poor Video Quality - Test internet speed (use speedtest.net) - Move closer to WiFi router - Close bandwidth-intensive applications - Switch to mobile data if WiFi is unstable - Lower video quality settings if available

Mobile App Issues

Issue: App Features Not Working on Mobile - Update browser to latest version - Enable JavaScript in browser settings - Check mobile data or WiFi connection - Clear mobile browser cache - Try landscape orientation for better display - Use desktop version if mobile version fails

Payment and Billing Issues

Issue: Payment Failed or Declined - Verify credit card information accuracy - Check card expiration date and CVV - Ensure sufficient funds or credit limit - Contact bank to verify international transactions - Try alternative payment method - Contact billing support for assistance

Getting Additional Help

Support Channels

Immediate Assistance: - **Sage AI Assistant:** Available 24/7 for instant help - **Live Chat:** During business hours (9 AM - 6 PM) - **Emergency Support:** For critical technical issues

Email Support: - **General Support:** support@sentineldiagnostics.com - **Technical Issues:** tech@sentineldiagnostics.com - **Billing Questions:** billing@sentineldiagnostics.com - **Security Concerns:** security@sentineldiagnostics.com

Phone Support: - **Main Support:** 1-800-SENTINEL (1-800-736-8463) - **Emergency Technical:** 1-800-TECH-911 - **Business Hours:** Monday-Friday, 8 AM - 8 PM EST

Before Contacting Support

Information to Gather

Help Us Help You Faster:

- Your username and registered email address
- Detailed description of the problem
- Steps you've already tried to resolve the issue
- Browser type and version
- Operating system information
- Error messages (screenshot if possible)
- Time and date when the issue occurred

Self-Service Resources

Knowledge Base: - Comprehensive FAQ section - Step-by-step tutorial videos - Feature documentation and guides - Best practices for optimal platform use

Community Forum: - User discussion and help - Feature requests and feedback - Tips and tricks from experienced users - Announcements and updates

Appendices

Appendix A: Medical Disclaimer

Important Medical Disclaimer

AI Diagnostic Limitations:

The AI diagnostic tools provided by Sentinel Diagnostics are designed to assist healthcare professionals and should not be used as the sole basis for medical decisions. These tools:

- Are not FDA-approved medical devices
- Should not replace professional medical consultation
- May produce false positive or false negative results
- Require professional interpretation for clinical use
- Are intended for educational and screening purposes only

Always consult qualified healthcare professionals for:

- Medical diagnosis and treatment decisions
- Interpretation of AI analysis results
- Emergency medical situations
- Medication management and prescriptions
- Serious or persistent symptoms

Appendix B: Technical Specifications

AI Model Performance Metrics

Brain Tumor Detection: - Accuracy: 92.3% - Sensitivity: 89.7% - Specificity: 94.1% - Processing Time: 2-3 seconds average

Lung Cancer Detection (YOLO): - mAP@0.5: 84.7% - Precision: 83.2% - Recall: 79.8% - Processing Time: <1 second

Breast Cancer Analysis (MLMO-EMO): - Segmentation Accuracy: 91.4% - Dice Coefficient: 0.89 - Processing Time: 4-7 seconds

Lung Cancer Risk Assessment: - Overall Accuracy: 86.7% - AUC-ROC: 0.91 - Calibration Score: 0.89

Supported File Formats

Medical Images: - JPEG (.jpg, .jpeg) - PNG (.png) - DICOM (.dcm) - Maximum file size: 10MB

Documents: - PDF (.pdf) - Microsoft Word (.doc, .docx) - Text files (.txt) - Maximum file size: 5MB

Browser Compatibility

Recommended Browsers: - Google Chrome 90+ - Mozilla Firefox 88+ - Microsoft Edge 90+ - Safari 14+ (macOS)

Mobile Browsers: - Chrome Mobile - Safari Mobile - Samsung Internet - Firefox Mobile

Appendix C: Quick Reference Cards

Emergency Quick Actions

For Patients: 1. **Emergency Consultation:** Dashboard → Emergency Appointment 2. **Urgent AI Scan:** AI Scanner → Upload → Emergency Analysis 3. **Contact Doctor:** Messages → Select Doctor → Mark Urgent 4. **Emergency Services:** Call local emergency number (911, 112, etc.)

For Doctors: 1. **Emergency Case Review:** Cases → Sort by Urgent 2. **Immediate Consultation:** Availability → Emergency Slots 3. **Critical Results:** Reports → Mark as Critical → Notify Patient 4. **Escalation Protocol:** Contact senior physician or specialist

Daily Use Quick Guide

Patient Daily Tasks: - Check appointment reminders - Review new messages from doctors - Complete health assessments if prompted - Chat with Sage for quick questions

Doctor Daily Tasks: - Review pending case queue - Respond to patient messages - Update availability calendar - Generate consultation reports

Appendix D: Contact Information

Team Victoriors Contact Information

Development Team:

- **Devansh Madake** - Lead Developer & AI Architecture
- **Jay Hatapaki** - Backend Development & Integration
- **Ujjwal Arora** - Frontend Development & UI/UX
- **Pranad Nair** - Medical AI Models & Data Science
- **Kanderp Thakore** - DevOps & Deployment

Project Information:

- Project Name: Sentinel Diagnostics
- Version: 1.0
- Release Date: October 2025
- Platform: AI-Powered Medical Diagnosis System

Thank you for choosing Sentinel Diagnostics!

Revolutionizing healthcare through artificial intelligence and compassionate care.

Team Victoriors

October 2025

SENTINEL DIAGNOSTICS

"Where AI meets compassionate healthcare"

Powered by Team Victoriors
Advanced AI Medical Platform
Version 1.0 - October 2025