Healthcare Translation Assistant - User Guide

Quick Start Guide

System Requirements

- **Browser**: Chrome (recommended), Edge, or Safari
- **Permissions**: Microphone access required
- **Internet**: Stable connection for translation services
- **Device**: Desktop, tablet, or mobile phone

Initial Setup

1. Open the application in your web browser
2. **Grant microphone permission** when prompted
3. Select languages:
   - **Patient Language**: Choose patient's native language
   - **Clinician Language**: Choose healthcare provider's language
4. Optional: Enter OpenAI API key for premium translation quality

Core Features

1. Patient Communication (Left Panel)

Recording Patient Speech

1. Click " 🎙 **Record Patient**" button
2. **Speak clearly** in the selected patient language
3. Click " ⬜ **Stop Recording**" when finished
4. View transcribed text in **"Original (Patient)"** box
5. See translation in **"For Clinician"** box

Playback Options

- 🎧 **Play Recording**: Hear the original patient recording
- 🔊 **Speak Translation**: Text-to-speech of the translation

2. Clinician Communication (Right Panel)

Option A: Type Message

1. Select **"Type Message"** radio button

2. Type your message in English (or selected clinician language)

3. Click " ➡️ **Translate & Send**"

4. Translation appears in **"For Patient"** box

Option B: Voice Recording

1. Select **"Record Voice"** radio button

2. Click " 🎤 **Record Clinician**" button

3. Speak your message clearly

4. Stop recording when finished

5. View transcription and translation

3. Conversation History

Features

- **Chronological Record**: All conversations saved during session

- **Dual Playback**: Play original recordings and translated speech

- **Time Stamps**: Each conversation entry shows exact time

- **Role Identification**: Clear Patient/Doctor labeling

Using History

- Scroll through past conversations

- Click 🎧 **Play Original** to hear recorded speech

- Click 🔊 **Speak Translation** for text-to-speech playback

- Review conversation flow for better understanding

Language Support

Supported Languages

- **Urdu (اردو)**: Full speech recognition and translation

- **English**: Complete functionality

- **Hindi (हिन्दी)**: Good support with Web Speech API

- **Arabic (العربية)**: Basic support, varies by browser

Medical Terminology

The app includes specialized medical vocabulary for:

- **Common Symptoms**: headache, fever, pain, nausea

- **Body Parts**: head, throat, stomach, chest
- **Medical Instructions**: take medicine, rest, drink water
- **Questions**: What's wrong? Where does it hurt? Since when?

Troubleshooting

Speech Recognition Issues

Problem: "Speech recognition not supported"

Solutions:

- Use Chrome or Edge browser
- Update browser to latest version
- Check microphone permissions in browser settings

Problem: "No speech detected"

Solutions:

- Speak louder and clearer
- Check microphone is working
- Ensure stable internet connection
- Try different browser

Problem: Inaccurate transcription

Solutions:

- Speak slower and more clearly
- Reduce background noise
- Use medical terminology when possible
- Try shorter phrases

Translation Issues

Problem: "Translation failed"

Solutions:

- Check internet connection
- Wait a few seconds and try again
- Try typing instead of voice input
- Contact support if persistent

Problem: Poor translation quality

Solutions:

- Add OpenAI API key for better accuracy
- Use common medical phrases
- Speak in short, clear sentences
- Avoid colloquial expressions

Audio Playback Issues

Problem: No sound from speakers

Solutions:

- Check device volume settings
- Allow audio permissions in browser
- Try refreshing the page
- Use headphones if available

Best Practices

For Healthcare Providers

Before Each Session

- Test microphone and speakers
- Select appropriate languages
- Ensure quiet environment
- Have backup communication method ready

During Conversations

- Speak clearly and slowly
- Use simple medical terminology
- Confirm understanding with patient
- Keep sentences short and focused

After Sessions

- Review conversation history if needed
- Note any translation issues
- Clear session data for privacy

For Optimal Results

Speech Recognition

- **Clear Pronunciation**: Enunciate words clearly
- **Normal Pace**: Don't speak too fast or too slow
- **Quiet Environment**: Minimize background noise
- **Short Phrases**: Break complex sentences into parts

Translation Accuracy

- **Simple Language**: Use common medical terms
- **Context Clues**: Provide relevant medical context
- **Verification**: Always verify critical information
- **Backup Methods**: Have alternative communication ready

Privacy and Security

Data Protection

- **No Permanent Storage**: Conversations stored in browser memory only
- **Session-Based**: All data cleared when browser closed
- **No Server Storage**: Audio recordings not uploaded to servers
- **Local Processing**: Speech recognition happens in browser

HIPAA Compliance Notes

- This is a prototype for demonstration purposes
- Do not use with real patient information
- Implement proper security measures for production use
- Consult legal counsel for healthcare compliance

Recommended Security Practices

- Use on secure, private networks
- Clear browser data after sessions
- Don't store sensitive patient information
- Use HTTPS connections only

Advanced Features

OpenAI Integration

- **Premium Translation**: Higher accuracy for medical terms

- **Context Understanding**: Better handling of complex medical language

- **API Key Required**: Enter your OpenAI API key in settings

- **Cost Consideration**: Usage charges apply per translation

Multiple Translation APIs

The app automatically tries multiple translation services:

1. **OpenAI** (if API key provided)

2. **MyMemory Translation API** (free)

3. **Lingva Translate** (Google proxy)

4. **Offline Dictionary** (backup for common phrases)

Mobile Optimization

- **Touch-Friendly**: Large buttons for easy mobile use

- **Responsive Design**: Adapts to all screen sizes

- **Orientation Support**: Works in portrait and landscape

- **PWA Ready**: Can be installed as mobile app

Technical Support

Browser Compatibility

- **Chrome 70+**: Recommended, full feature support

- **Edge 79+**: Full compatibility

- **Safari 14+**: Limited speech recognition support

- **Firefox 80+**: Basic functionality

Performance Tips

- **Close Unused Tabs**: Improves browser performance

- **Strong Internet**: Better for real-time translation

- **Updated Browser**: Latest versions work best

- **Clear Cache**: Refresh if experiencing issues

Getting Help

For technical support or feature requests:

1. Check this user guide first

2. Try troubleshooting steps

3. Test in different browser

4. Document specific error messages

5. Contact development team with details

Frequently Asked Questions

Q: Why isn't my speech being recognized?

A: Ensure microphone permissions are granted and you're using a supported browser (Chrome recommended).

Q: Can I use this offline?

A: Speech recognition works offline, but translation requires internet connection for best results.

Q: How accurate are the translations?

A: Accuracy depends on language pair and complexity. Medical terminology is optimized but may need verification.

Q: Is my conversation data saved?

A: No, all data is stored locally in browser memory and cleared when session ends.

Q: Can I export conversation history?

A: Currently not supported. This is a prototype version with basic functionality.

Q: What languages work best?

A: English and Urdu have the most extensive support. Hindi and Arabic have basic functionality.

Version: 1.0

Last Updated: September 2025

Support: For technical issues, refer to troubleshooting section above