Best Practices Summary

10 Key Best Practices
Lessons learned from medical LLM fine-tuning

✅ Do's

- **Start Small:** Begin with PEFT methods (LoRA r=8)
- **Validate Extensively:** Use multiple medical benchmarks
- **Monitor Safety:** Track harmful output rates continuously
- **Use Mixed Precision:** FP16 for memory efficiency
- **Document Everything:** Model cards, training logs

❌ Don'ts

- **Don't Skip Validation:** Always use held-out test sets
- **Don't Ignore Forgetting:** Monitor general capabilities
- **Don't Over-tune:** Stop at validation peak
- **Don't Deploy Untested:** Require expert review
- **Don't Forget Privacy:** De-identify training data

🔍 Common Mistakes

- Using too high learning rates (causes instability)
- Insufficient data preprocessing (noise in medical texts)

- Ignoring class imbalance (rare diseases underrepresented)
- Not using gradient accumulation (memory constraints)

📋 Pre-Deployment Checklist

- ☑ Performance validated on multiple test sets
- ☑ Safety metrics within acceptable thresholds
- ☑ Expert review completed (3+ medical professionals)
- ☑ Regulatory compliance documented