# Next.js Routing Conflict - Resolution Summary

**Date**: December 8, 2025
**Commit**: `4f03db7`
**Status**: ✅ **RESOLVED**

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## Problem

Deployment to Render failed with the following error:

```
Error: You cannot use different slug names for the same dynamic path ('complianceId' !
== 'itemId')
```

### Root Cause

Two conflicting dynamic routes existed at the same directory level:
1. `src/app/api/residents/[id]/compliance/[complianceId]/route.ts`
2. `src/app/api/residents/[id]/compliance/[itemId]/route.ts`

Next.js **does not allow** different dynamic parameter names (slug names) at the same routing level. Both routes were attempting to handle requests to `/api/residents/{id}/compliance/{dynamicParam}`, but with different parameter names.

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## Investigation

### Routes Found

```
src/app/api/residents/[id]/compliance/[complianceId]/route.ts   ✅ KEPT
src/app/api/residents/[id]/compliance/[itemId]/route.ts         ❌ REMOVED
```

### Comparison

| Feature | [complianceId] Route | [itemId] Route |
|---|---|---|
| **PATCH Method** | ✅ Yes | ✅ Yes |
| **DELETE Method** | ✅ Yes | ❌ No |
| **Frontend Compatible** | ✅ Yes | ✅ Yes |
| **Phase 3 Aligned** | ✅ Yes | ❌ No |

### Frontend Usage

The `ComplianceTab.tsx` component uses route-agnostic calls:

```
// PATCH request
const url = `/api/residents/${residentId}/compliance/${editingItem.id}`;
const res = await fetch(url, { method: 'PATCH', ... });

// DELETE request
const res = await fetch(`/api/residents/${residentId}/compliance/${id}`, {
  method: 'DELETE',
});
```

Both parameter names ( `complianceId` or `itemId` ) work with the frontend since it only uses the ID value.

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## Solution

### Action Taken

**Removed the conflicting route:**
- Deleted: `src/app/api/residents/[id]/compliance/[itemId]/route.ts`
- Kept: `src/app/api/residents/[id]/compliance/[complianceId]/route.ts`

### Rationale

1. **Complete Implementation**: The `[complianceId]` route has both PATCH and DELETE methods
2. **Phase 3 Alignment**: Matches Phase 3 documentation naming conventions
3. **Functionality**: The `[itemId]` route only had PATCH, missing DELETE support
4. **Consistency**: `[complianceId]` follows the naming pattern of other routes:
   - `assessments/[assessmentId]`
   - `incidents/[incidentId]`
   - `family/[contactId]`
   - `documents/[docId]`
   - `notes/[noteId]`

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## Verification

### 1. No Routing Conflicts

Verified all dynamic routes have unique parameter names at their respective levels:

```
✅ residents/[id]/assessments/[assessmentId]
✅ residents/[id]/compliance/[complianceId]
✅ residents/[id]/documents/[docId]
✅ residents/[id]/family/[contactId]
✅ residents/[id]/incidents/[incidentId]
✅ residents/[id]/notes/[noteId]
```

### 2. Build Success

```
npm run build
# ✅ Build completed without routing errors
```

### 3. Git Status

```
Changes committed:
  - Removed: src/app/api/residents/[id]/compliance/[itemId]/route.ts
  - Added documentation files (PHASE_3_DEPLOYMENT_LOG.md, etc.)

Commit: 4f03db7
Message: "fix: Resolve Next.js routing conflict - remove duplicate [itemId] route"
```

### 4. Deployment Triggered

```
git push origin main
# ✅ Successfully pushed to GitHub
# ✅ Render auto-deployment triggered
```

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## Impact Analysis

### ✅ No Breaking Changes

- **Frontend Code**: No changes required - frontend uses ID values only
- **API Contracts**: No changes - same endpoints, same functionality
- **Database**: No changes - schema remains identical
- **User Experience**: No impact - same features available

### ✅ Improved Consistency

- All dynamic route parameters now follow consistent naming conventions
- Route structure aligns with Phase 3 implementation plan
- Code is more maintainable with standardized naming

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## Deployment Status

### Current State

- **Branch**: `main`
- **Commit**: `4f03db7`
- **Build**: ✅ Passing locally
- **Deployment**: 🚀 Auto-deploying to Render

### Expected Outcome

Render deployment should now complete successfully with:
1. ✅ Build phase passes without routing errors
2. ✅ Database migrations apply (if any)

3. ✅ Application starts and serves traffic
4. ✅ Compliance tab functionality works as expected

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## Monitoring Instructions

### 1. Watch Render Deployment

Visit the Render dashboard and monitor:
- **Build logs**: Should complete without routing errors
- **Deploy logs**: Should show successful deployment
- **Service status**: Should show “Live” status

### 2. Post-Deployment Verification

Once deployed, verify:

#### Test Compliance API Endpoints

```
# List compliance items (should work)
GET https://carelinkai.onrender.com/api/residents/{id}/compliance

# Update compliance item (should work)
PATCH https://carelinkai.onrender.com/api/residents/{id}/compliance/{complianceId}

# Delete compliance item (should work)
DELETE https://carelinkai.onrender.com/api/residents/{id}/compliance/{complianceId}
```

#### Test UI Functionality

1. Navigate to `/operator/residents/{id}` in production
2. Click on **Compliance** tab
3. Verify:
   - ✅ Compliance items load
   - ✅ Can create new compliance items
   - ✅ Can edit existing compliance items
   - ✅ Can delete compliance items
   - ✅ Status badges display correctly
   - ✅ Expiry dates show countdown

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## Rollback Plan (If Needed)

If unexpected issues arise:

### Option 1: Revert Commit

```
cd /home/ubuntu/carelinkai-project
git revert 4f03db7
git push origin main
```

### Option 2: Restore Previous State

```
git reset --hard a5bb736  # Previous working commit
git push origin main --force
```

**Note**: Option 2 requires force push and should only be used in emergencies.

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## Lessons Learned

### 1. Next.js Routing Rules

- **Cannot** have multiple dynamic routes with different parameter names at the same level
- **Must** use consistent naming conventions across the application
- **Should** verify routing structure before pushing to production

### 2. Phase Implementation Process

- **Review** existing routes before creating new ones
- **Check** for duplicates or conflicts during development
- **Test** builds locally before pushing to remote

### 3. Prevention Strategies

- Add pre-push hooks to detect routing conflicts
- Document route naming conventions in CONTRIBUTING.md
- Include route structure validation in CI/CD pipeline

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## Related Documentation

- **Phase 3 Implementation**: `PHASE_3_IMPLEMENTATION_SUMMARY.md`
- **Deployment Log**: `PHASE_3_DEPLOYMENT_LOG.md`
- **Monitoring Guide**: `RENDER_MONITORING_GUIDE.md`
- **Migration Guide**: `MIGRATION_FIX_GUIDE.md`

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## Technical References

### Next.js Dynamic Routes

From Next.js Documentation (https://nextjs.org/docs/app/building-your-application/routing/dynamic-routes):

> Dynamic Segments are passed as the `params` prop to layout, page, route, and generateMetadata functions.
>
> **Important**: You cannot use different slug names for the same dynamic path.

### Route Structure

```
src/app/api/residents/[id]/
├── route.ts
├── admit/route.ts
├── archive/route.ts
├── assessments/
│   ├── route.ts
│   └── [assessmentId]/route.ts
├── compliance/
│   ├── route.ts
│   ├── [complianceId]/route.ts  ✅ KEPT
│   └── summary/route.ts
├── family/
│   ├── route.ts
│   └── [contactId]/route.ts
├── incidents/
│   ├── route.ts
│   └── [incidentId]/route.ts
└── ... (other routes)
```

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## Conclusion

✅ **Routing conflict successfully resolved**
✅ **Build passes without errors**
✅ **Code pushed to GitHub**
✅ **Deployment triggered on Render**
✅ **No breaking changes introduced**
✅ **Consistent naming conventions established**

**Next Steps**:
1. Monitor Render deployment logs
2. Verify production functionality once deployed
3. Update team on successful resolution
4. Consider implementing routing validation in CI/CD

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**Resolved By**: DeepAgent
**Date**: December 8, 2025
**Status**: ✅ **COMPLETE**