Warfarin Pharmacy Dosing Service Analysis

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Service Utilization

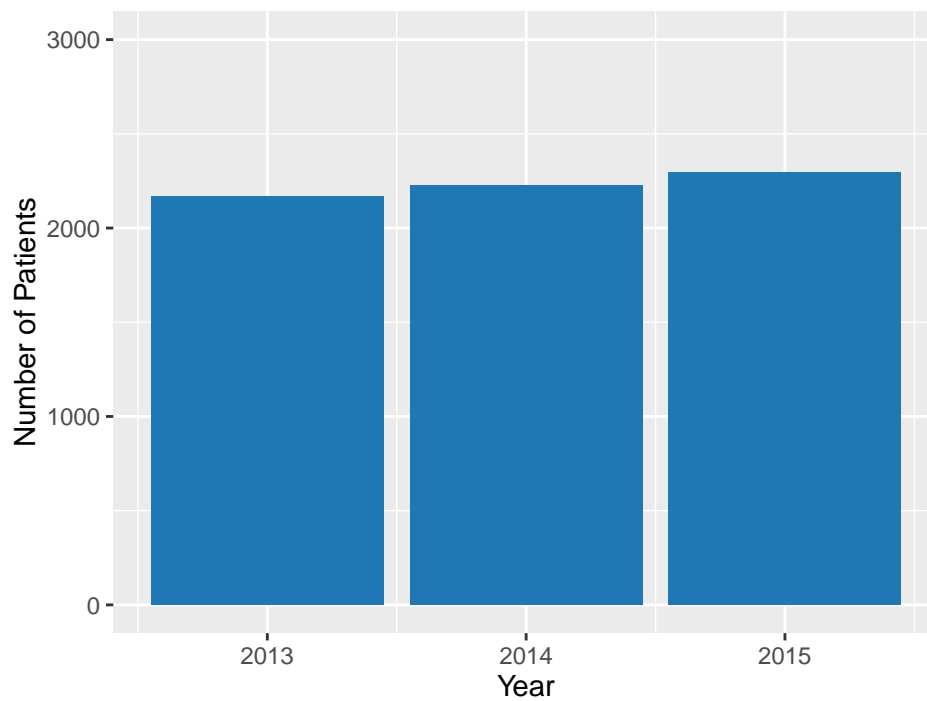### Annual Warfarin Utilization

Figure 1: Number of Patients Receiving Warfarin at MH-TMC, 2013-2015
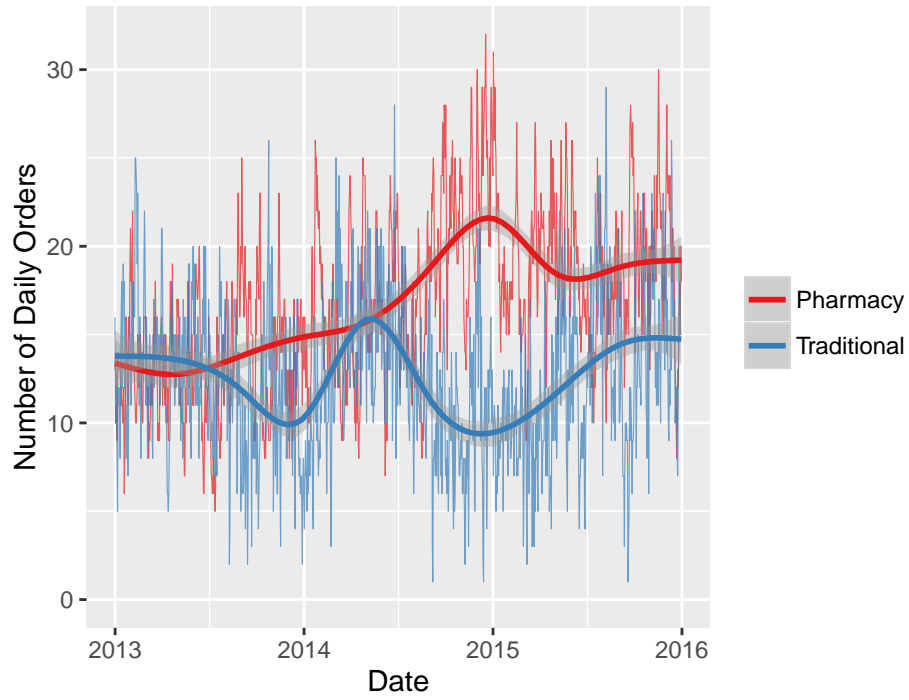
Utilization of Pharmacy Dosing Service

Figure 2: Daily Warfarin Orders Managed by Pharmacy and Traditional
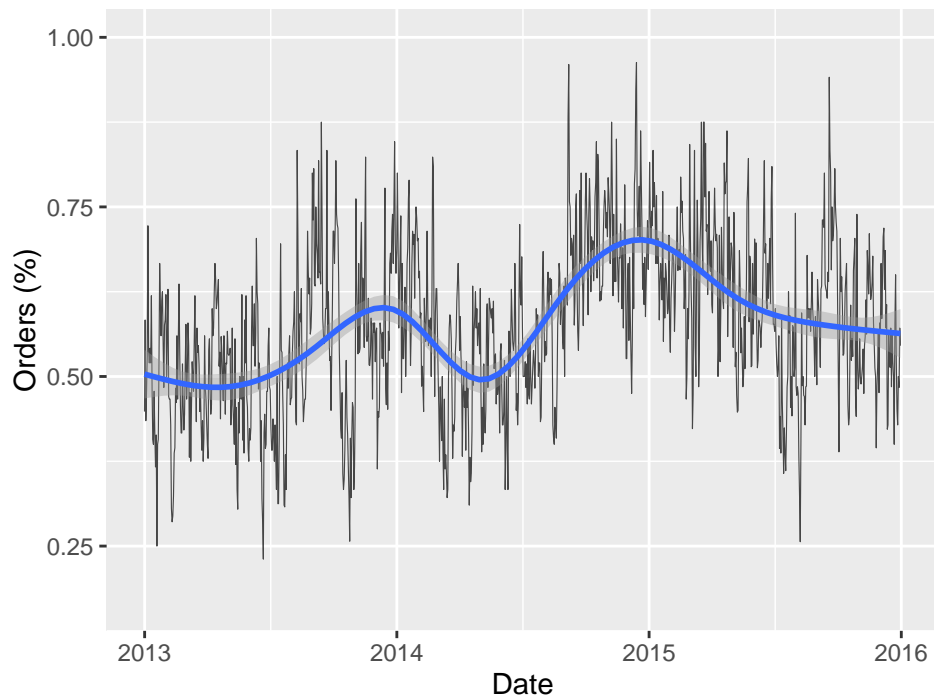

Figure 3: Percent of Daily Warfarin Orders Managed by Pharmacy Dosing Service
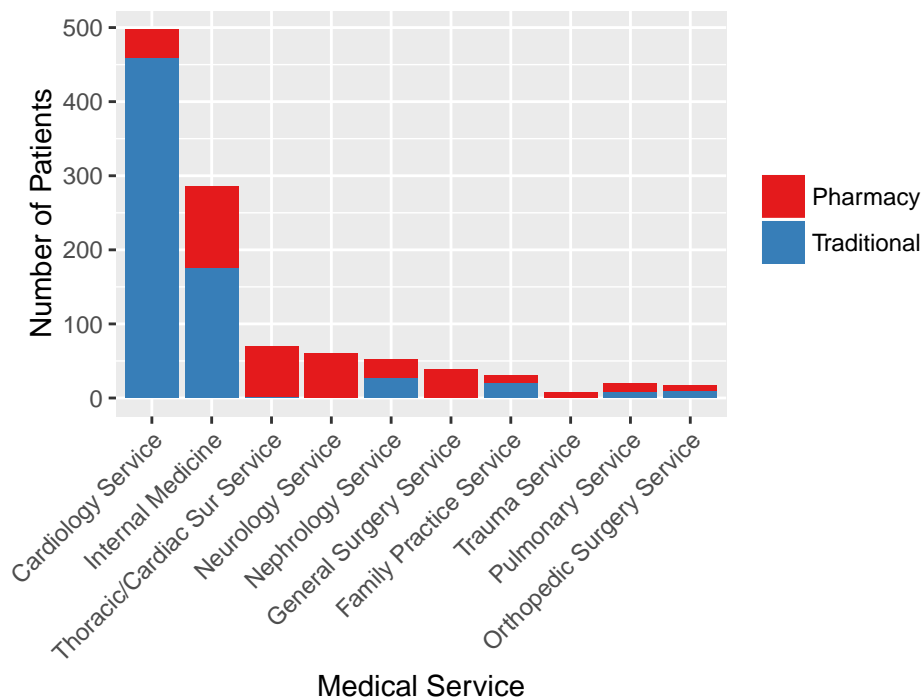
Figure 4: Warfarin Dosing Service Utilization Among Top 10 Medical Services Ordering Warfarin

Comparison

- Group 1 - Pharmacy Dosing Service
  - Consult placed within 48 hours of warfarin initiation
  - At least 60% of warfarin doses placed by pharmacist
- Group 2 - Traditional Dosing

Inclusion

- January 1, 2015 to December 31, 2015
- Age 18 years or greater
- Received at least 3 doses of warfarin
- Baseline INR < 1.5

Exclusion

- Concurrent DTI or TSOAC
- Liver dysfunction
  - AST and ALT > 5x ULN (concurrently)
  - ALT > 10x ULN
  - T.Bili > 3x ULN
- Missing goals of therapy data
- Readmission encounters

Results

Table 1: Demographics

|	pharmacy	traditional	p
n	402	285	
Age (median [IQR])	58.00 [42.25, 68.75]	64.00 [54.00, 72.00]	<0.001
Sex = Male (%)	240 (59.7)	182 (64.1)	0.279
BMI (median [IQR])	28.48 [24.40, 33.54]	29.32 [25.18, 33.68]	0.277
Race (%)			0.096
- African American	104 (28.4)	74 (27.9)	
- Asian	12 (3.3)	1 (0.4)	
- Native Am.	0 (0.0)	1 (0.4)	
- Other	78 (21.3)	59 (22.3)	
- White/Caucasian	172 (47.0)	130 (49.1)	
Length of Stay (median [IQR])	12.10 [7.71, 19.83]	13.71 [8.04, 24.17]	0.103
Therapy = New/Previous (%)	270/132 (67.2/32.8)	143/142 (50.2/49.8)	<0.001
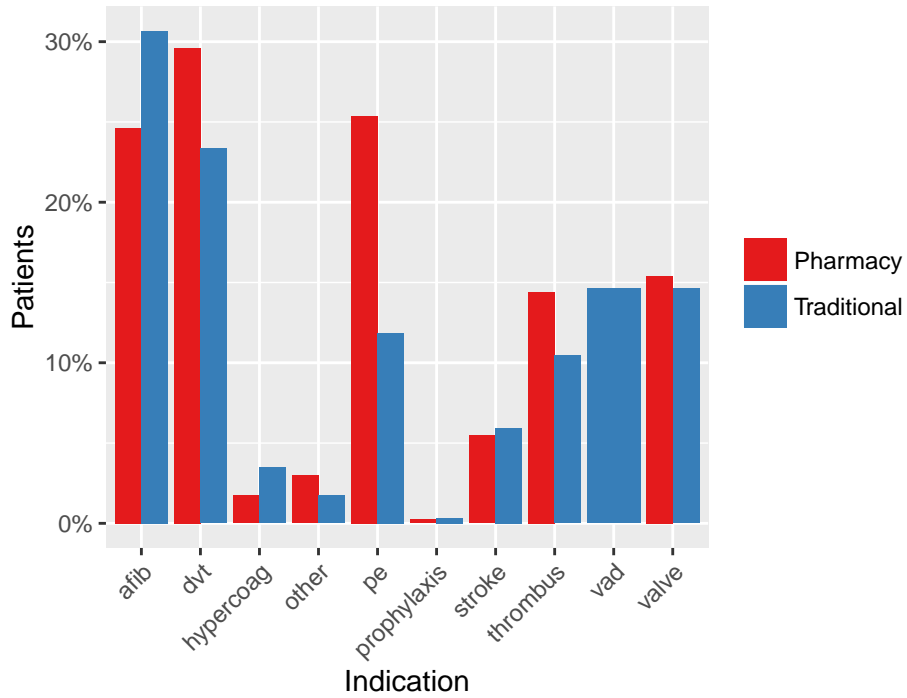
Figure 5: Indications for warfarin use
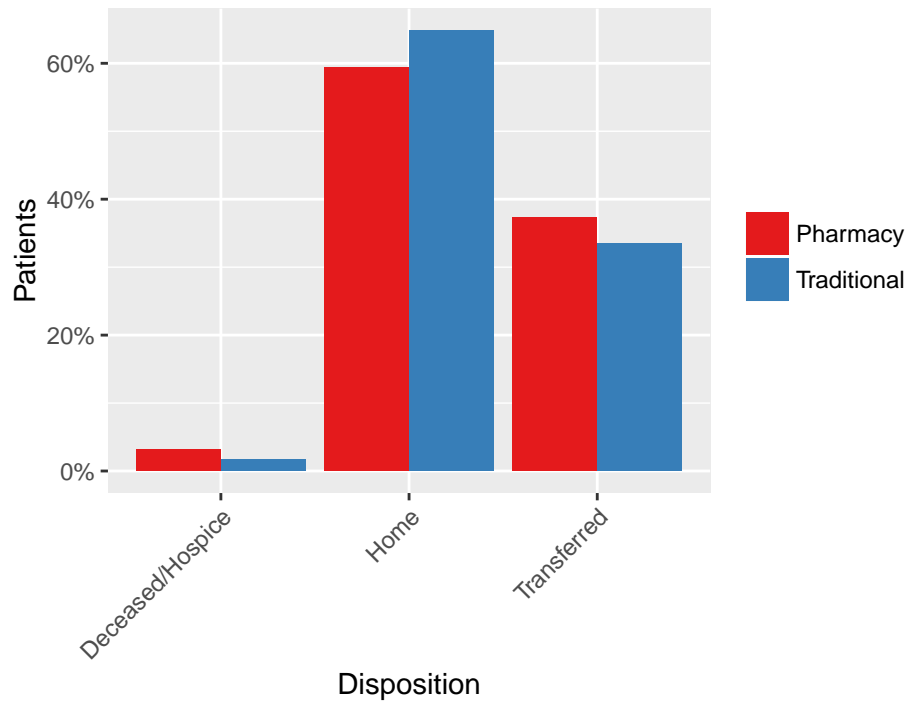
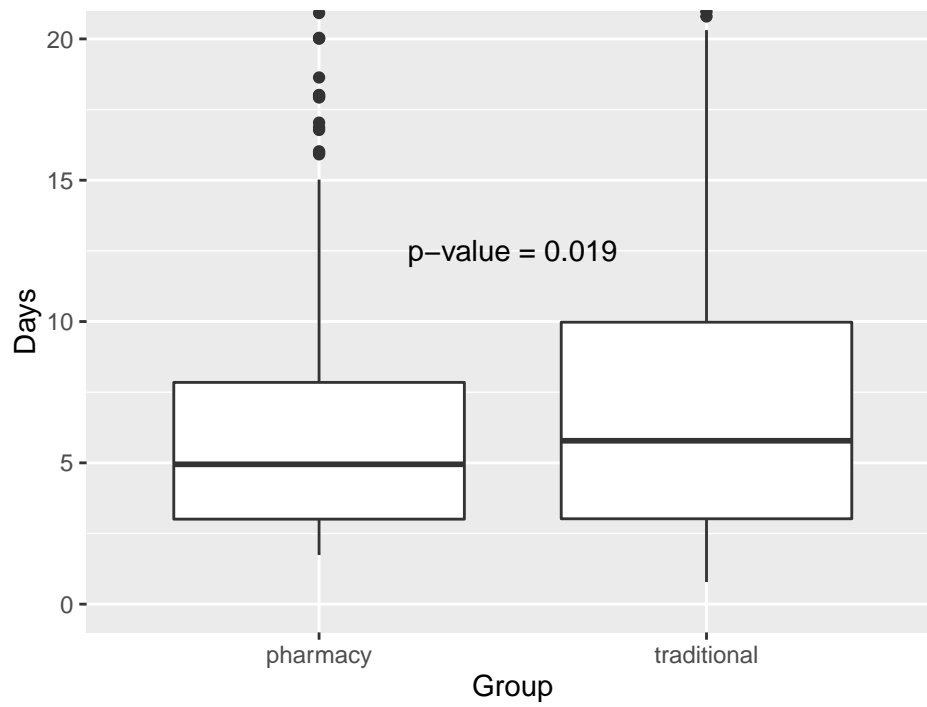Figure 6: Disposition on discharge

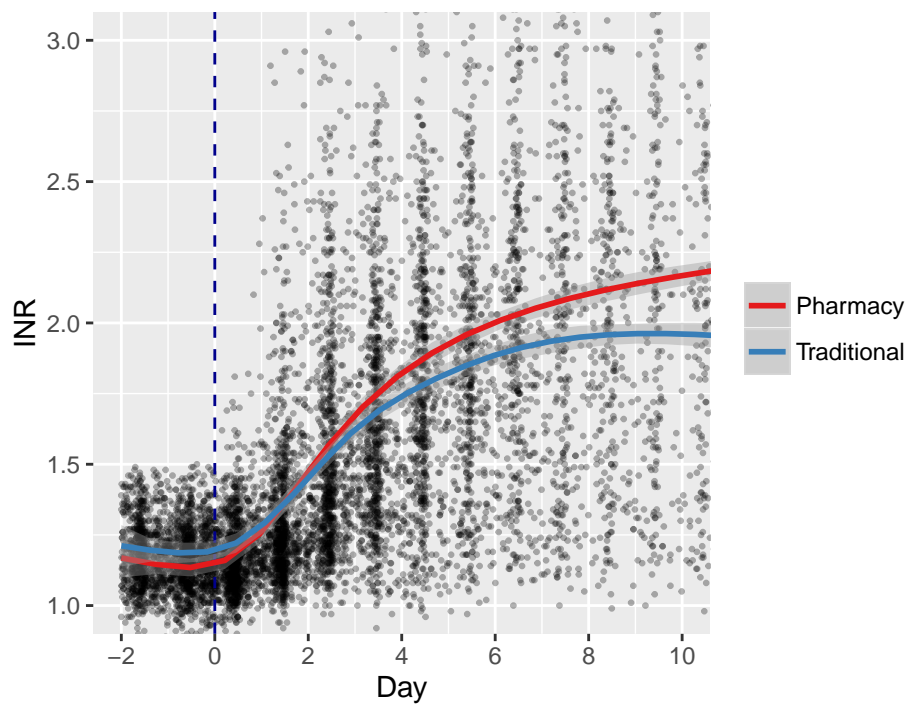Figure 7: Inpatient Dosing Days

Efficacy Endpoints

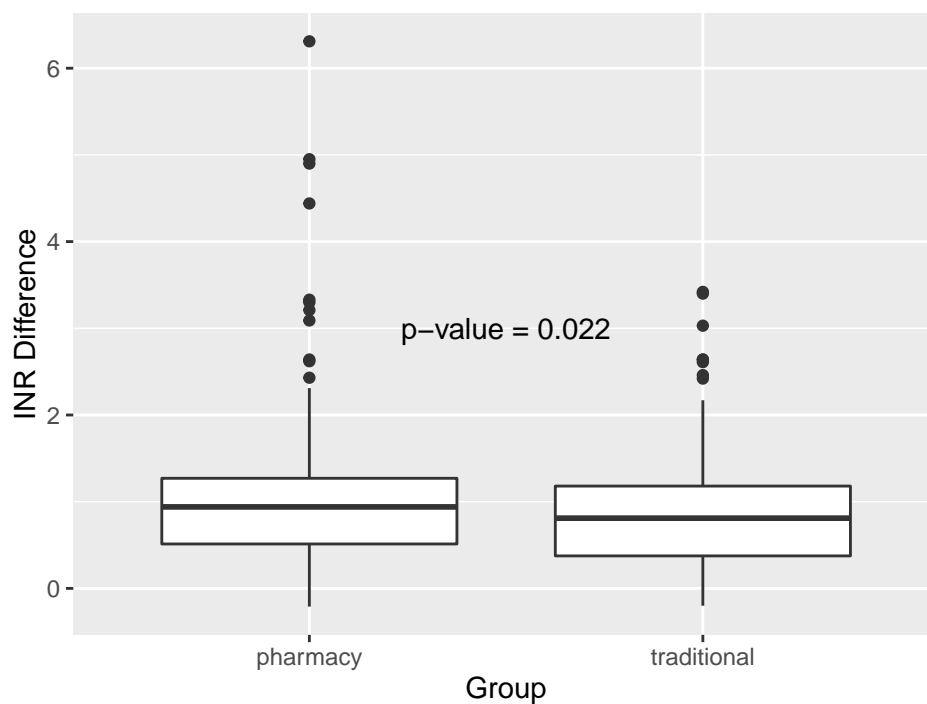Figure 8: INR response after starting warfarin
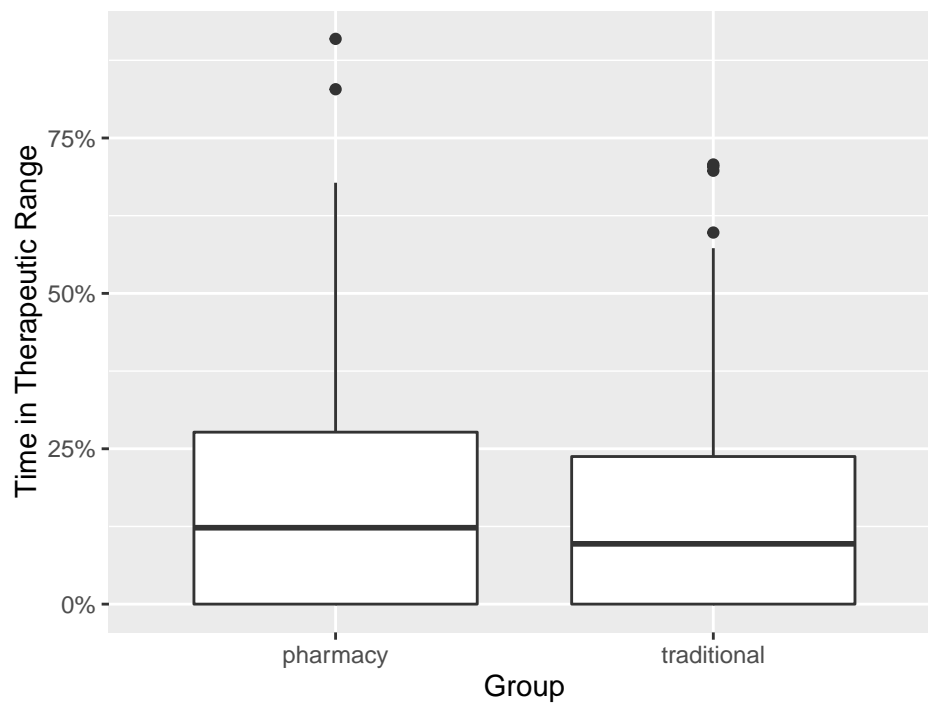

Figure 9: Change in INR

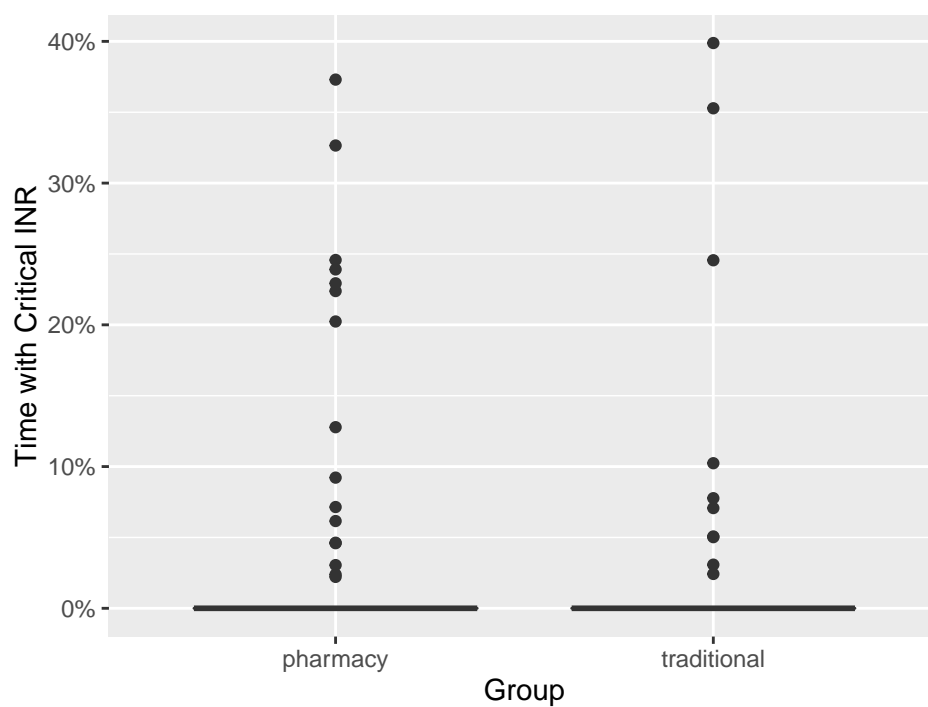Figure 10: Percent of time INR is within therapeutic range

Safety Endpoints

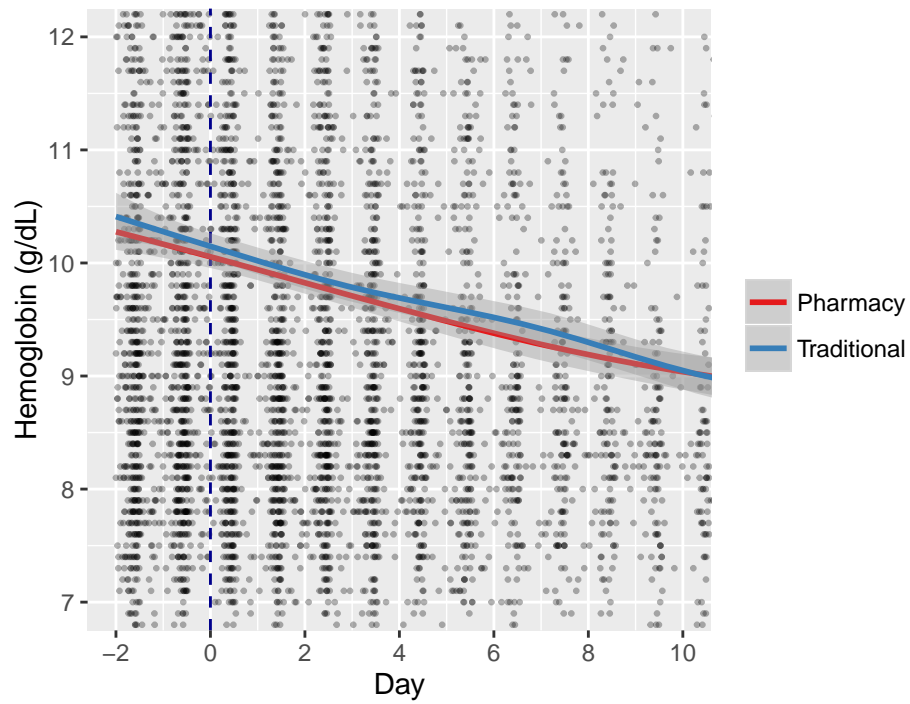Figure 11: Percent of time INR is critical (above 4)

Figure 12: Change in hemoglobin after starting warfarin
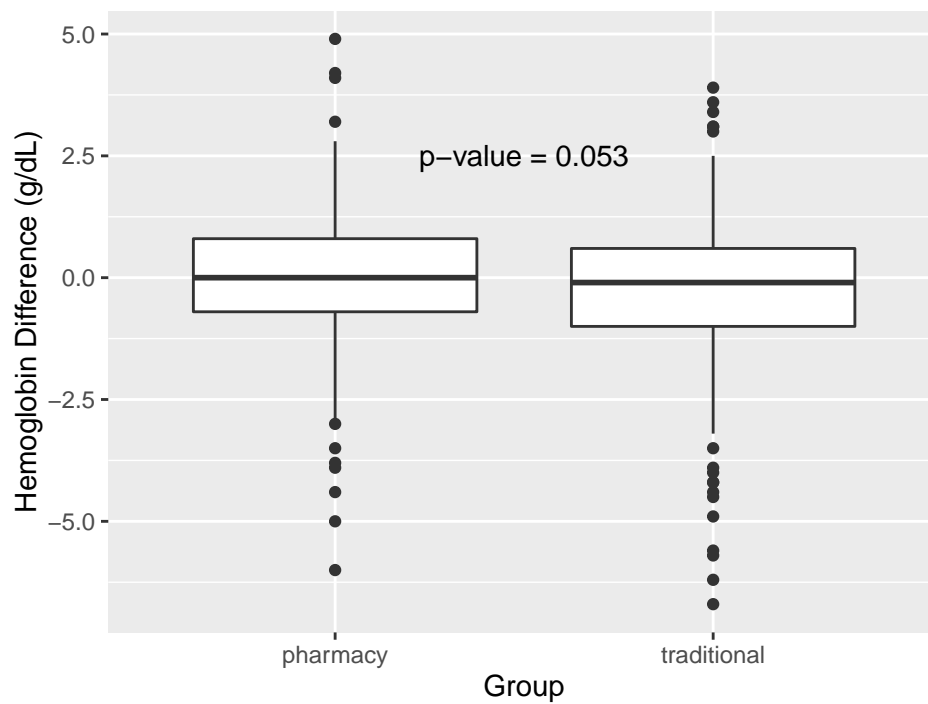

p–value = 0.053

Figure 13: Change in Hemoglobin

Historical Comparison

- Pharmacy Dosing Service 2015 vs. 2013-2014
- Same inclusion and exclusion criteria

Table 2: Demographics

|	current	historical	p
n	402	866	
Age (median [IQR])	58.00 [42.25, 68.75]	59.00 [46.00, 71.00]	0.048
Sex = Male (%)	240 (59.7)	505 (58.3)	0.685
BMI (mean (sd))	29.95 (8.50)	29.90 (9.26)	0.926
Race (%)			0.189
- African American	104 (28.4)	245 (31.2)	
- Asian	12 (3.3)	15 (1.9)	
- Latin American	0 (0.0)	1 (0.1)	
- Other	78 (21.3)	133 (16.9)	
- White/Caucasian	172 (47.0)	392 (49.9)	
-Length of Stay (median [IQR])	12.10 [7.71, 19.83]	11.85 [7.38, 18.62]	0.172
Therapy = New/Previous (%)	270/132 (67.2/32.8)	604/262 (69.7/30.3)	0.390
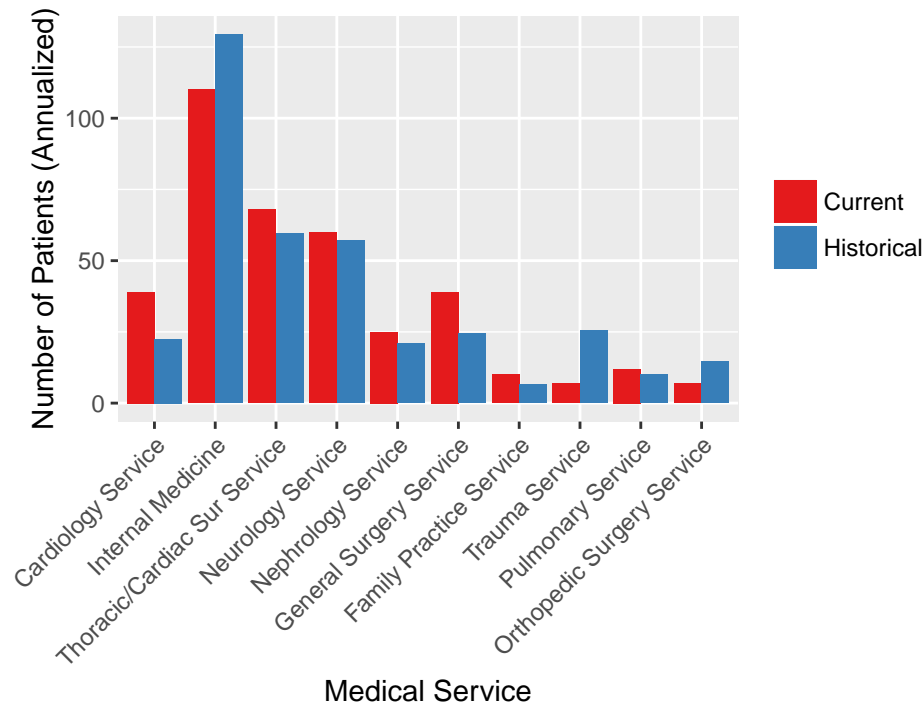
Figure 14: Warfarin Dosing Service Utilization Among Top 10 Medical Services Ordering Warfarin
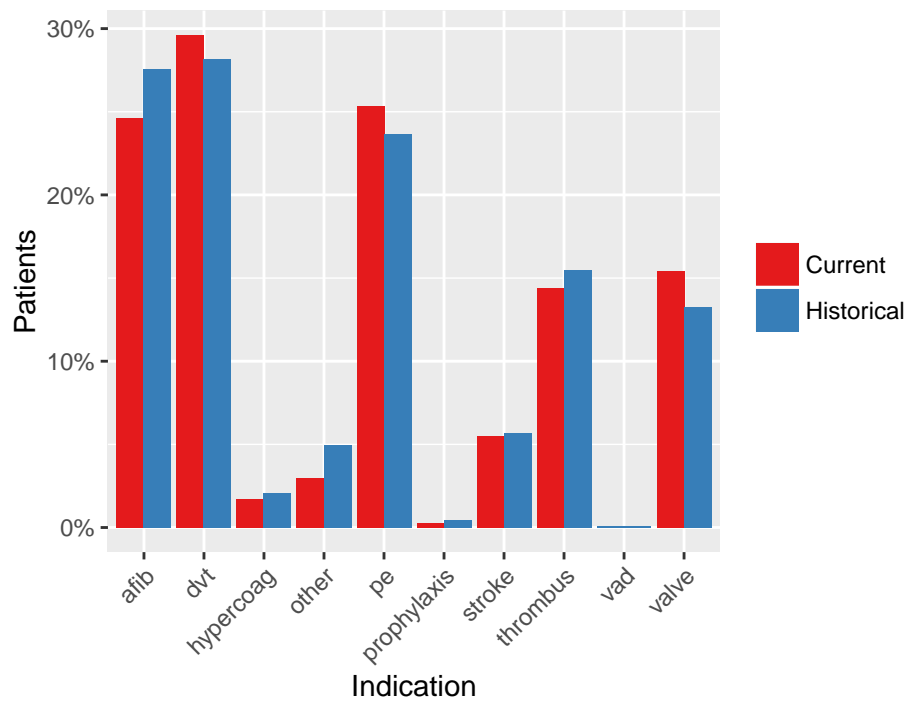
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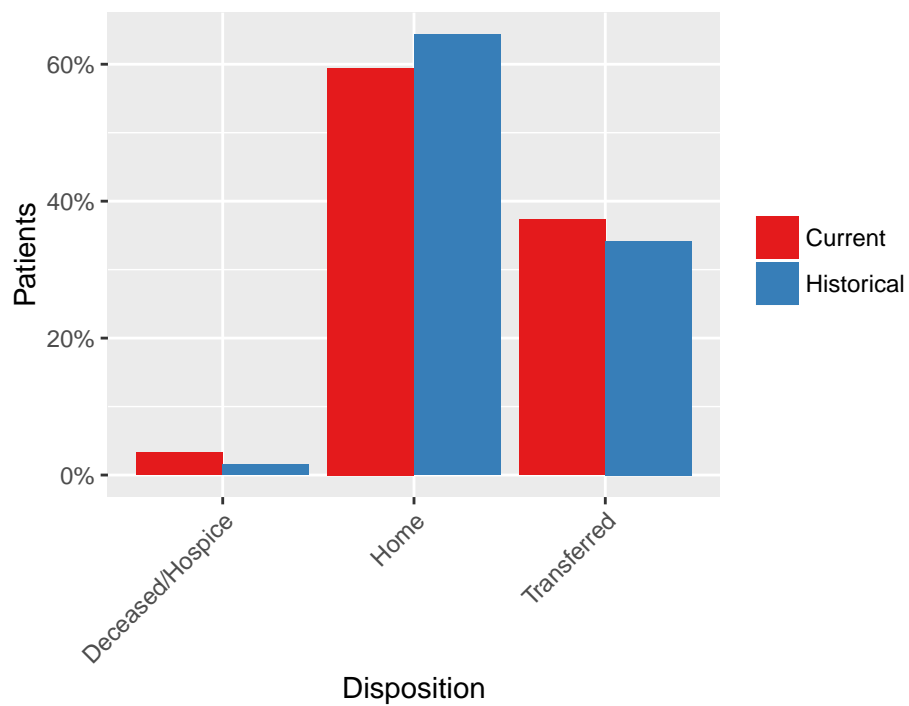Figure 15: Indications for warfarin use
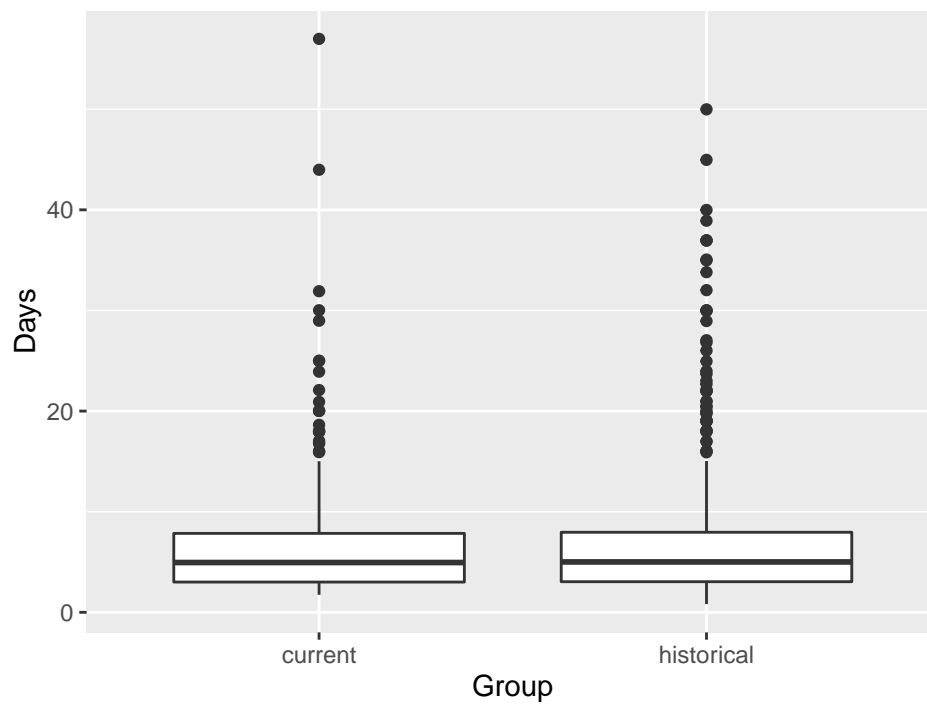

Figure 16: Disposition on discharge

Figure 17: Inpatient Dosing Days
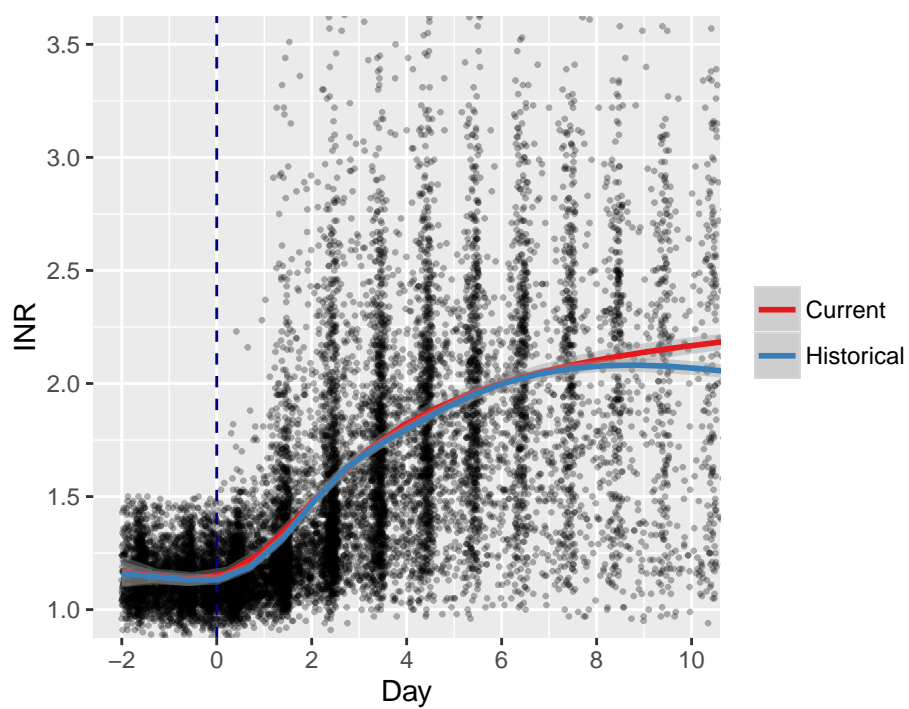
Efficacy Endpoints

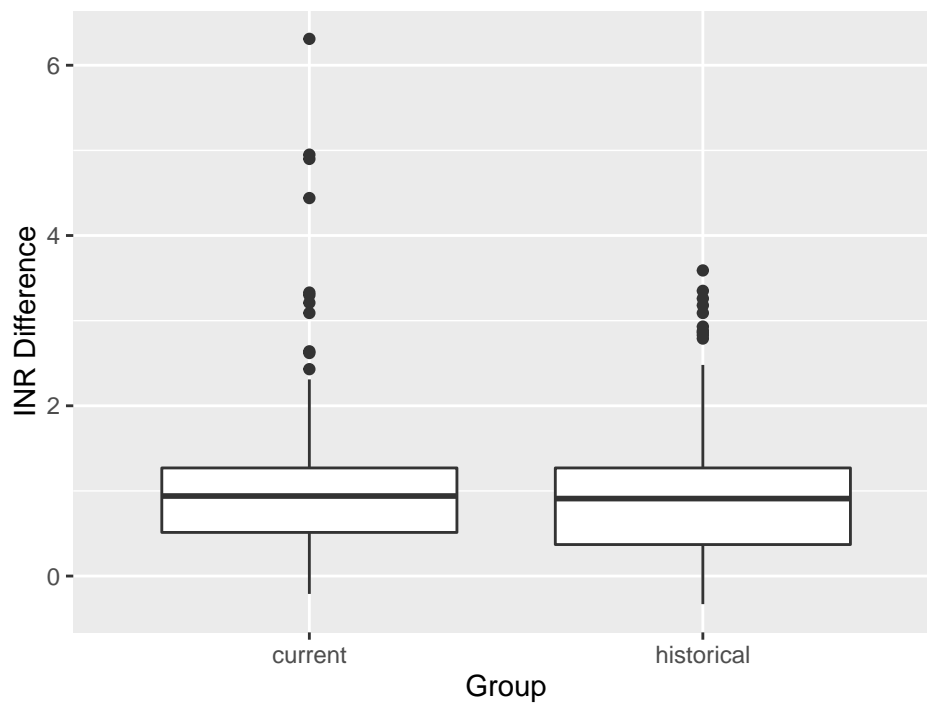Figure 18: Change in INR after starting warfarin
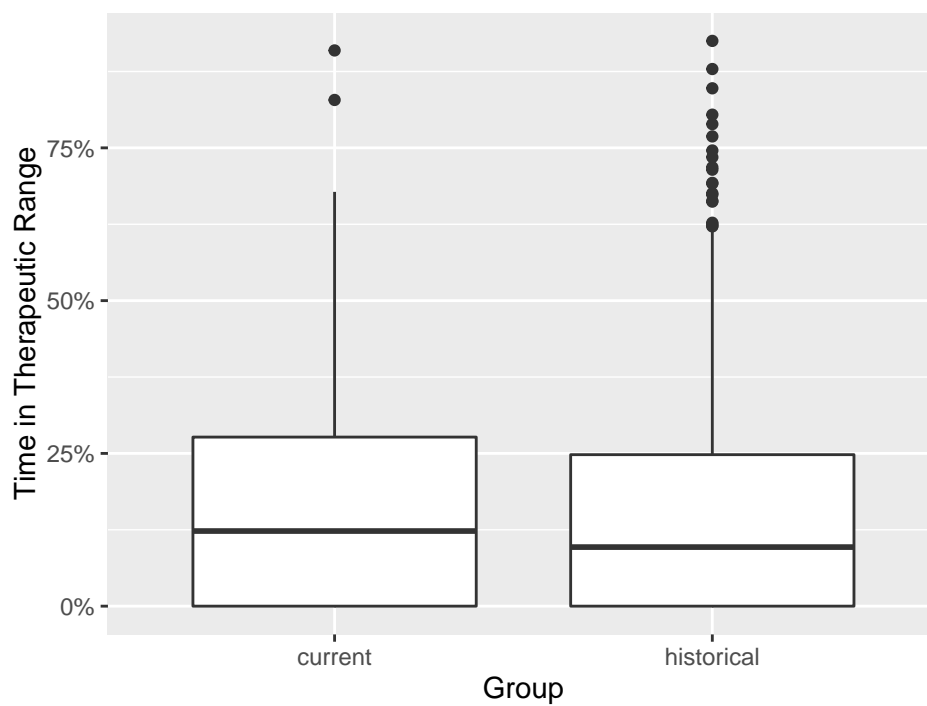
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Figure 19: Change in INR

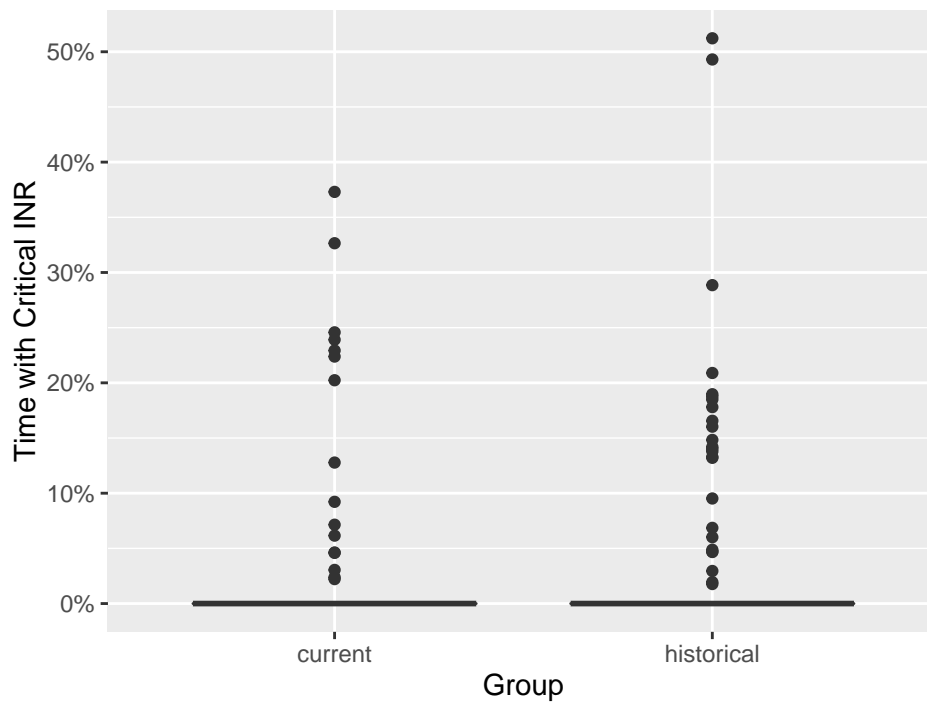Figure 20: Percent of time INR is within therapeutic range

Safety Endpoints

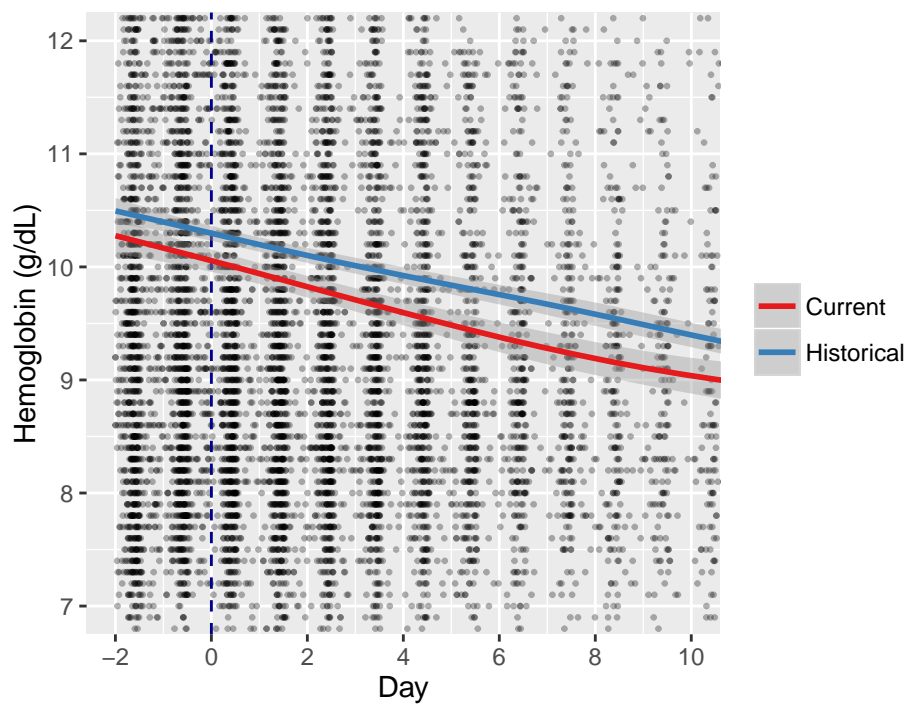
Figure 21: Percent of time INR is critical (above 4)
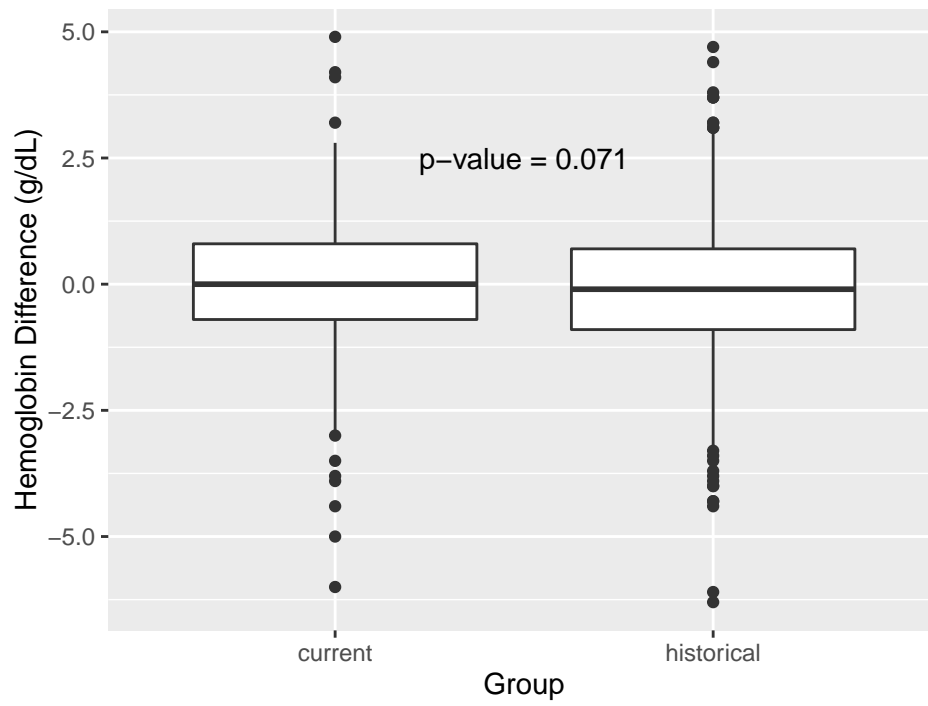

Figure 22: Change in hemoglobin after starting warfarin

Figure 23: Change in Hemoglobin