



# **Test Data Analysis using NeuBIRO** ***user experiences***

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BIRO Box GUI

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BIRO Communication software

Configure & Run Communicator

### Fields mapping configuration

Configure mapping between BIRO fields and local fields

BIRO field	Description of selected BIRO field
Date of Birth	Date of Diagnosis
Date of Diagnosis	
<b>Patient ID</b>	<input checked="" type="checkbox"/> Extract from local database
Sex	
<b>Type of Diabetes</b>	
<b>Alcohol Intake</b>	
Amputation	
Average Injectons	
Blindness	
BMI	
Cigarettes per day	
Creatinine	
Diabetes Specific Education	Local field name
Diastolic blood-pressure	datadiag
End Stage Renal Failure	Select the input date format
<b>Episode Date</b>	yyyy-MM-dd
Eye Examination	dd/MM/yyyy
Foot Examination	dd-MM-yyyy
Foot Pulse	yyyy-mm-dd
Foot Sensation	mm-dd-yyyy
Foot Ulcer	
HbA1c	
HDL	
Height	
Hypertension	
Hypertensive Medication	

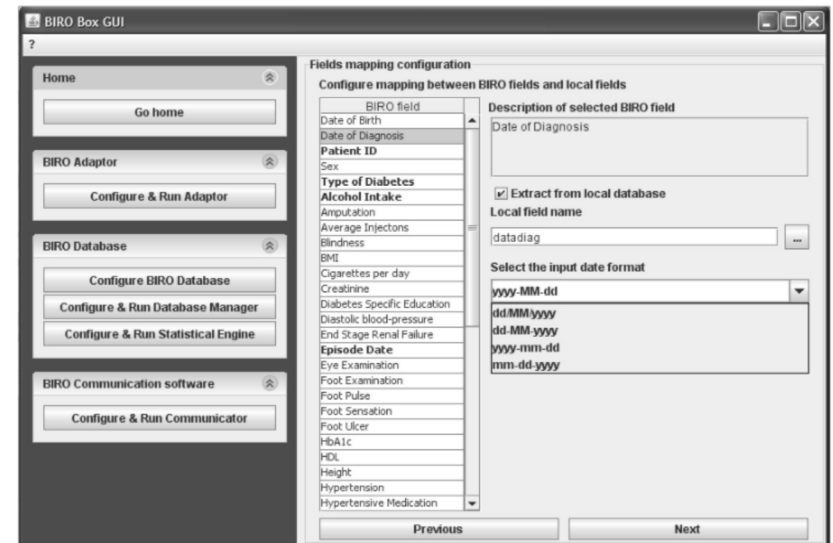
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## BiroBox vs NeuBiro

### ⊙ Positive in BiroBox

- GUI for field mappings
- Predictive design
- Default and integrated validation rules
- Easy to use indicators

### ⊙ But .... all static !



## BiroBox vs NeuBiro

### ⊙ **Neubiro**

#### **-> customization and simplification**

- Custom field mappings
- Simplified design
- Custom validation rules
- Custom easy to use indicators



## Analysis of local sample

- ◎ 1,146 patients, 2,564 events
- ◎ Duration of setup and analysis on old laptop:  
**... less than 4 minutes ...**

### 2.1.1 Type of Diabetes by Age

Type of Diabetes	Age													
	<15		[15-45)		[45-55)		[55,65)		[65-75)		>=75			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Type 1	0	-	114	74.0	48	33.3	21	7.2	9	3.0	1	0.5	193	17.5
Type 2	0	-	31	20.1	85	59.0	245	83.9	269	90.9	205	94.0	835	75.6
Other	0	-	9	5.8	11	7.6	26	8.9	18	6.1	12	5.5	76	6.9
TOTAL	0	0.0	154	14.0	144	13.0	292	26.0	296	27.0	218	20.0	1,104	100.0

## Analysis of local sample

- ◎ **Simple and fast to:**

- install
- change to new version

- ◎ **Simply added/changed:**

- changed default indicators
- added erase rules (e.g. wrong codes for TYPE\_DM)
- new indicators (e.g.  $LDL < 1.8$ )

- ◎ **Just loved Gitlab version control**

- transparent changes and communication

## Importing of new fields

### ◎ **Bariatric surgery import field**

```
// BIRO REF: BIRO0XX - Bariatric surgery
'BARIATRIC' {
  type = "smallint"
}
```

## Creating new indicators

LDL Cholesterol	N	%
Valid	344	29.6
Missing	817	70.4
TOTAL	1,161	100.0

Table 2.2.3.7 LDL Cholesterol by Type of Diabetes

### 2.2.3.4 LDL Cholesterol by Type of Diabetes

LDL Cholesterol	Type of Diabetes							
	Type 1		Type 2		Other			
	N	%	N	%	N	%	N	%
<1.8	11	19.3	84	33.2	7	33.3	104	30.2
>=1.8	46	80.7	169	66.8	14	66.7	240	69.8
TOTAL	57	17.0	253	74.0	21	6.0	344	100.0

Table 2.2.3.7 LDL Cholesterol by Type of Diabetes



## Fever and fever bugs

# ERROR

2017-09-13 15:06:33,161 457806 [AWT-EventQueue-0] e.eubirod.neubiro.NeubiroController - argument type mismatch

```
java.lang.IllegalArgumentException: argument type mismatch
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(Unknown Source)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(Unknown Source)
    at java.lang.reflect.Method.invoke(Unknown Source)
    at org.codehaus.griffon.runtime.core.mvc.DefaultMVCGroupManager$MethodInjectionPoint.apply(DefaultMVCGroupManager.java:432)
    at org.codehaus.griffon.runtime.core.mvc.DefaultMVCGroupManager.fillReferencedProperties(DefaultMVCGroupManager.java:479)
    at org.codehaus.griffon.runtime.core.mvc.DefaultMVCGroupManager.createMVCGroup(DefaultMVCGroupManager.java:158)
    at org.codehaus.griffon.runtime.core.mvc.AbstractMVCGroupManager.withMVCGroup(AbstractMVCGroupManager.java:268)
    at org.codehaus.griffon.runtime.core.mvc.AbstractMVCGroupManager.withMVC(AbstractMVCGroupManager.java:397)
    at org.codehaus.griffon.runtime.core.mvc.AbstractMVCHandler.withMVC(AbstractMVCHandler.java:130)
    at org.codehaus.griffon.runtime.core.mvc.AbstractMVCGroup.withMVC(AbstractMVCGroup.java:258)
    at org.codehaus.griffon.runtime.core.artifact.AbstractGriffonMvcArtifact.withMVC(AbstractGriffonMvcArtifact.java:184)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(Unknown Source)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(Unknown Source)
    at java.lang.reflect.Method.invoke(Unknown Source)
    at org.codehaus.groovy.runtime.callsite.SiteNoUnwrap.invoke(PogoMetaMethodSite.java:190)
    at org.codehaus.groovy.runtime.callsite.PogoMetaMethodSite.callCurrent(PogoMetaMethodSite.java:59)
    at org.codehaus.groovy.runtime.callsite.CallSite.callCurrent(AbstractCallSite.java:174)
    at eu.eubirod.neubiro.NeubiroController.showDialog(NeubiroController.groovy:826)
    at eu.eubirod.neubiro.NeubiroController.preferences(NeubiroController.groovy:821)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(Unknown Source)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(Unknown Source)
    at java.lang.reflect.Method.invoke(Unknown Source)
    at griffon.util.MethodUtils.invokeExactMethod(MethodUtils.java:388)
    at griffon.util.MethodUtils.invokeExactMethod(MethodUtils.java:339)
    at griffon.util.GriffonClassUtils.invokeExactInstanceMethod(GriffonClassUtils.java:3052)
    at org.codehaus.griffon.runtime.core.controller.AbstractActionManager.doInvokeAction(AbstractActionManager.java:338)
    at org.codehaus.griffon.runtime.core.controller.AbstractActionManager$1.run(AbstractActionManager.java:257)
    at java.awt.event.InvocationEvent.dispatch(Unknown Source)
    at java.awt.EventQueue.dispatchEventImpl(Unknown Source)
    at java.awt.EventQueue.access$500(Unknown Source)
    at java.awt.EventQueue$3.run(Unknown Source)
    at java.awt.EventQueue$3.run(Unknown Source)
    at java.security.AccessController.doPrivileged(Native Method)
    at java.security.ProtectionDomain$JavaSecurityAccessImpl.doIntersectionPrivilege(Unknown Source)
    at java.awt.EventQueue.dispatchEvent(Unknown Source)
    at java.awt.EventDispatchThread.pumpOneEventForFilters(Unknown Source)
```



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BIRO