



# HOSPITAL PERFORMANCE

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OECD Health Care Quality Indicators Project

Health Care Quality Indicators Expert Group Meeting

19 May 2016



# Key Objective of Session

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- Receive feedback on pilot data process so far:
  - Factors contributing to non participation?
  - Clarity and usefulness of the guidelines?
  - Experiences with running the step 1 SAS code?
  - Alternatives to the use of the SAS code (e.g. SPSS, R, VB)?
  - Access and usefulness of the on-line community?
  - Timelines and plans to still provide data for step 1?
  - Ideas for improving the remaining process?
- Consider methodological issues in light of data outcomes in November.



# UPDATE ON WORK PROGRAM 2015-2016



# Work Plan 2015-2016

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- Descriptive stream
  - International experience and use of indicators
  - Priority areas for indicator development
- Empirical stream
  - Methodological development
  - Pilot data collection



# DESCRIPTIVE STREAM



# Descriptive stream of work

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Two components:

1. Experiences and use of performance indicators
  - Initial draft of publication during 2016
2. Priority areas for indicator development
  - Consider specific development opportunities:
    - May 2016
    - November 2016



# Priority Areas

Performance Dimension	Consideration
Patient Experiences	Aligns with item 4
Care Continuity & Coordination	Aligns with item 4
Staff Orientation	Considered <b>now</b>
Efficiency	Considered <b>now</b> , November HCQI
Patient Safety	Aligns with item 4 and 7, November HCQI
Appropriateness	Aligns with item 11, OECD Ministerial 2017
Access and Timeliness	November HCQI



# EMPIRICAL STREAM





# Initial Proposal

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- **Admission-based** Hospital 30-day Case Fatality Rate after:
  - Acute Myocardial Infarction
  - Percutaneous Coronary Intervention
  - Coronary Artery Bypass Graft
  - Ischemic Stroke
  - Haemorrhagic Stroke
- **Patient-based** Hospital 30-day Case-Fatalities Rate after
  - Acute Myocardial Infarction
  - Ischemic Stroke
  - Haemorrhagic Stroke



# Consideration of Key Components

Components	Broadly Supported	Any key issues for further consideration/development
1. Suite of indicators	Yes/No	?
2. Approach to unit of measurement	Yes/No	?
3. Baseline risk adjustment variables	Yes/No	?
4. General specification of indicators - admission-based	Yes/No	?
- patient-based	Yes/No	?
5. Approach to data exchange	Option 1,2,3	?
6. Broad data requirements	Yes/No	?
7. Next steps	Yes/No	?



# Initial Timelines

Milestone	Timeline
<b>Development</b>	
HCQI expert support for principal features	Nov 2015
Development of data collection	Nov 2015 - Feb 2016
Review of resources by HCQI experts	Feb 2016
<b>Implementation</b>	
Start pilot data collection	Mar 2016
Progress report to HCQI experts	May 2016
Finish pilot data collection	Jun 2016
Data validation and analysis	Jul 2016 – Oct 2016
Report to HCQI experts	Nov 2016



# Progress Since November 2015

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- HCQI experts comment on key components **Nov 2015**
- Surrey Group consideration of issues and options **Dec 2015**
- HCQI bureau consideration of recommendations **Jan 2016**
- Preliminary specifications and guidelines prepared **Feb 2016**
  - Testing of SAS code on sample of Finnish data
  - Further consideration by Surrey Group (18 Feb)
  - Additional beta testing by Australia, Finland and NZ
  - Review of initial report on CVD indicators survey (Korea)
  - Revised guidelines considered by HCQI bureau (1 Mar)
- Data collection launched on-line community site **Mar 2016**
- Initial deadline for step 1 data submission **May 2016**



# Surrey Group Members

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- Enrique Bernal-Delgado (ECHO Project)
- Fabrizio Carinci (EUBIROD Project)
- Yana Gurevich (Canada)
- Unto Häkkinen (EuroHOPE Project)
- Mark Joy (University of Surrey)
- Sunita Karmakar-Hore (Canada)
- Sun Min Kim (Korea)
- Toshiro Kumakawa (Japan)
- Sadaf Marashi-Pour (NSW Bureau of Health Information, Australia)
- Mikko Peltola (EuroHOPE Project)
- Veena Raleigh (UK)
- Patrick Romano (UC Davis, US)
- Vladimir Stevanovic, (NZ)
- Kim Sutherland (NSW Bureau of Health Information, Australia)



# More focussed approach

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- AMI case fatality rates
  - Patient-based calculation
    - First episode in 365 days
    - Last episode
  - Admission-based calculation
    - Including transfers
    - Excluding short stay transfers
  - Risk variables
    - Age and Sex
    - STEMI Status
    - Comorbidity
    - Previous AMI
  - Supplementary data for R and D.



# Data Collection

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1. Specifications and Calculation Guidelines
2. SAS Code
3. Sources and Methods Questionnaire
4. On-line Community Site



OECD Hospital Performance Project  
Hospital Outcome Indicators Pilot Data Collection 2016

SPECIFICATIONS AND CALCULATION GUIDELINES:  
ACUTE MYOCARDIAL INFARCTION 30 DAY  
MORTALITY

**Our Documents**  
Hospital Performance Data Collection Materials

Want to upload a document? click on the icon

**Our Community**  
This site has been developed to enable participants in the OECD Hospital Performance Pilot Data Collection to access information, ask questions and share ideas during the data collection.

**Our Discussions/Questions**  
Click here to view our discussions

Want to start a discussion/ask a question? click on the icon

**Who is participating ? click on the icon**

**Upcoming Events**

- HCQI Experts Meeting on 19-20 May 2016  
5/19/16 9:00 AM
- HCQI Experts Meeting 3-4 November 2016  
11/3/16 9:00 AM

Looking for something ?

Search

Search

User guide - click on the icon

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/****/
***/
/4/
/****/
***/

/*Before running the SAS code, please create a folder called "
Under the HPP folder, create:
- a folder called "admission_based".
- and a folder called "Patient_based".
Under each of these folders, create:
- a folder called "Input" where the excel files containing the
coefficients
of the logistic regression needed for risk adjustment will be
- and a folder called "Output" where all the results generated
programme will be stored.
Under the Output folder, create:
- a folder called "Results" that will contain the main results
analysis.
- and a folder called "SupplData" that will contain all the su
data
generated by the SAS programme.

The SAS code is divided into two parts.
- The first part corresponds to the code that countries need to
STEP 1.
- The second part corresponds to the code that countries to ru
2.
This programme only includes the first part of the code that c
need to run in STEP 1.
The second part will be sent after analysis of the data genera
l by the OECD.

Process that countries need to follow:
1/ The SAS code requires you to have some variables available :
hospital discharge
database coded using a specific format. If your variables are
in the required
format, you will need to adapt the SAS code to your format or
the format of the
variables stored in your database to fit the requirements of the SAS
code.

```



**HCQI Project**  
PILOT HOSPITAL PERFORMANCE DATA COLLECTION (2016) - AMI 30 DAY MORTALITY

Country:

Please provide us with the contact information of the person primarily responsible for completing this questionnaire.

Name:

Title:

Organisation:

Postal address:

Email:

Telephone:

**Instructions:**

Deadline to return the questionnaire : **Monday, 9 May 2016**

1. Fill in the contact information above.
2. Consult the Specifications and Calculation Guidelines for the pilot data collection
3. Please do not un-protect this worksheet when completing the questionnaire.

Please e-mail [Ian.Brownwood@oecd.org](mailto:Ian.Brownwood@oecd.org) should you have any questions.

30 March 2016





# PILOT DATA COLLECTION TO DATE



# Participation in Data Collection

Participating (17)	Not participating (8)	Waiting for clarification
Australia (NSW) Canada Chile Denmark ← Finland ← Ireland Israel ← Italy Korea ← Latvia ← Malta Mexico ← Norway Singapore ← Sweden Switzerland United States	Austria Belgium Czech Republic Germany The Netherlands Portugal Slovak Republic United Kingdom	France New Zealand Poland Spain

**Around 80 people from 27 countries registered on the community website.**



# Experience with Collection Tools

Benefits	Lessons
<ul style="list-style-type: none"><li>• Standardised calculation process resulting in better comparison of data across countries</li><li>• Once the code has been adapted to the structure of the database in the first round of data collection, no additional work expected for the next rounds.</li><li>• Possibility of modifying specifications or calculating more data for R&amp;D purposes without increasing the burden on countries.</li><li>• Better tracing of data manipulation through the log and more concrete technical assistance provided to countries.</li><li>• Data more easy to handle than in an Excel questionnaire.</li><li>• Very quick to run when working on a server.</li></ul>	<ul style="list-style-type: none"><li>• Inadequate capacity of computing system when working with a large dataset<ul style="list-style-type: none"><li>➤ <b>Need to run the code on a server</b></li></ul></li><li>• Statistical software availability<ul style="list-style-type: none"><li>➤ <b>Need to develop similar codes in other languages in the future</b></li></ul></li><li>• Lack of experience with statistical software<ul style="list-style-type: none"><li>➤ <b>Need for training + technical assistance from OECD</b></li></ul></li></ul>



# Issues Shared in Community

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- Reportable hospitals
- Identifying acute and urgent cases
- Defining major urban center
- Adjusting Charlson score to account for differences in SDX coding practices
- Time taken to run SAS code
- ...



# Preliminary Results (5 countries)

Admission-based calculation (both variants) and Patient-based calculation (variant 1)

Model	Risk adjustment variables
Model 0	Crude rate
Model 1	Age and sex
Model 2	Age, sex and STEMI
Model 3	Age, sex, Charlson score
Model 4	Age, sex, STEMI and Charlson score

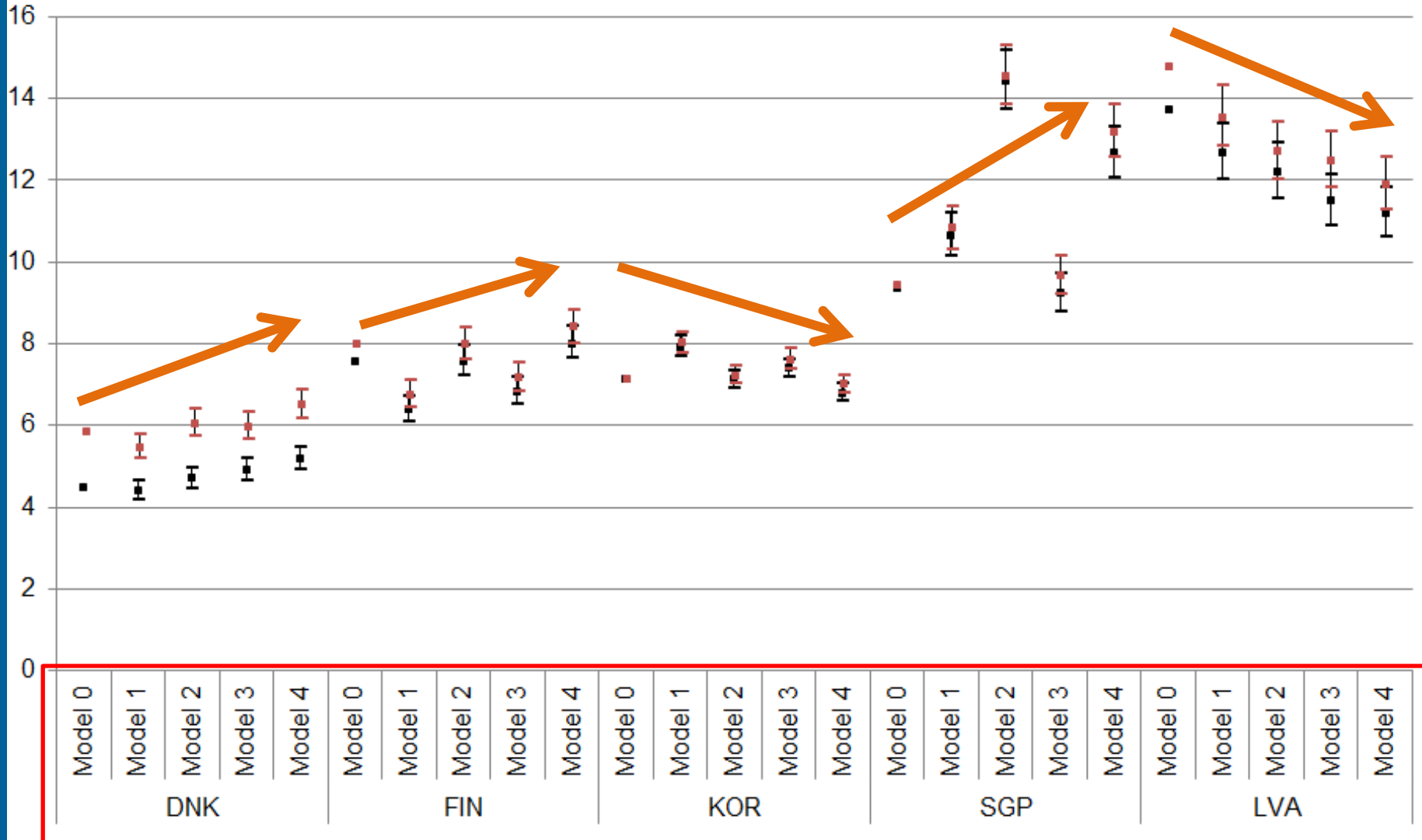
Patient-based calculation (variant 2)

Model	Risk adjustment variables
Model 0	Crude rate
Model 1	Age and sex
Model 2	Age, sex and previous AMI
Model 3	Age, sex, previous AMI, STEMI
Model 4	Age, sex, previous AMI, Charlson score
Model 5	Age, sex, previous AMI, STEMI, Charlson score

# Admission-based calculation

Rate per 100 AMI hospital admissions of patients aged 45 and over

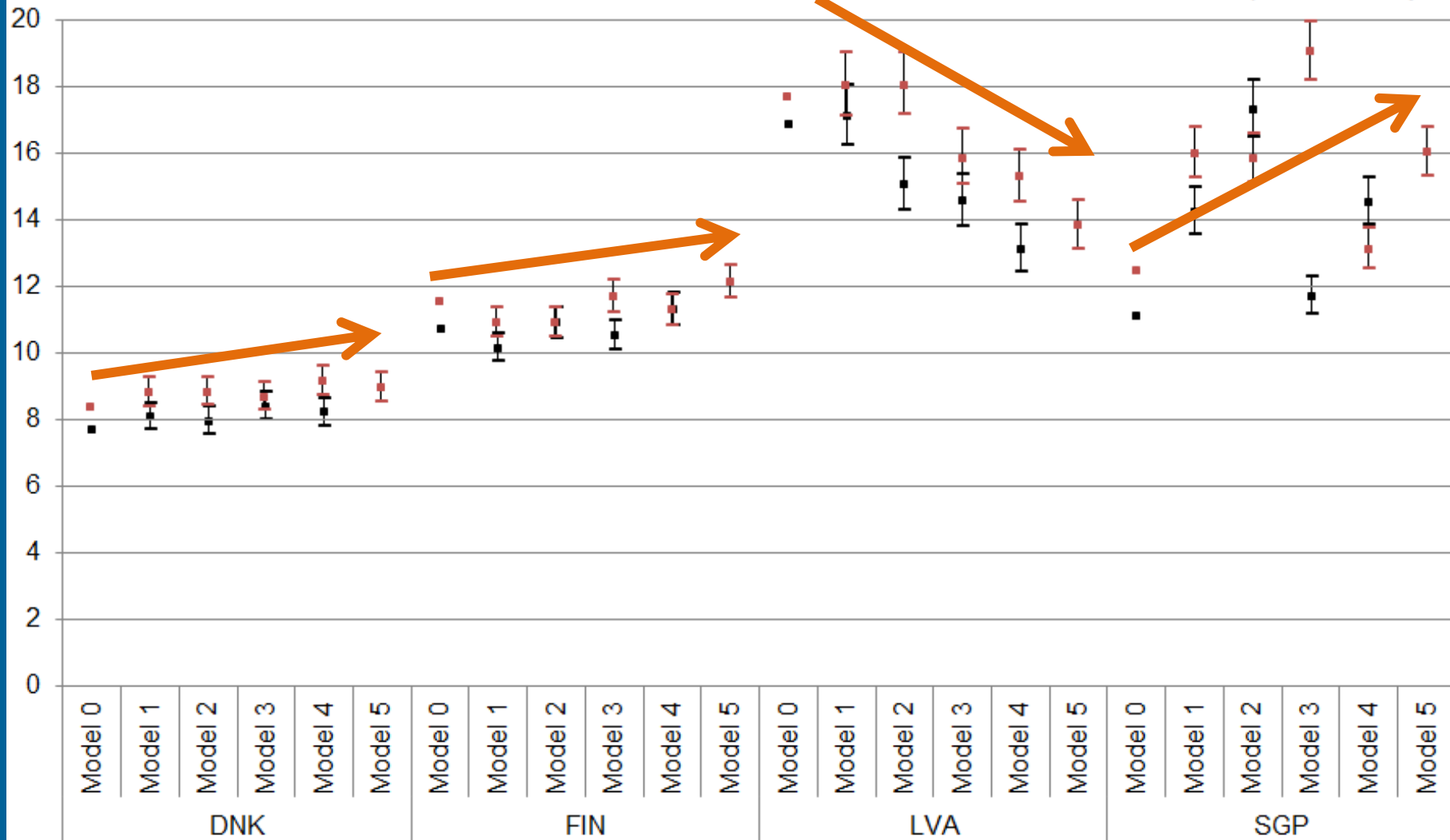
- Including transfers
- Excluding transfers



# Patient-based calculation

- First admission of the year
- Last admission of the period of analysis

Rate per 100 patients aged 45 and over hospitalised for AMI





# Next Steps

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- 27<sup>th</sup> of May      **Latest deadline** for sending Step 1 (national-level) data. The sooner the better...
- 3rd of June      SAS Code for STEP 2 along with the regression coefficients will be sent to countries.
- 4th of July      Deadline for sending back STEP 2 (hospital-level) data to OECD





# FORWARD PLANNING



# Surrey Group - September 2016

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- One day face to face meeting to consider:
  - Reflection on the data collection process
    - Lessons from countries experiences with SAS code
  - Methodological options in light of data outcomes:
    - Admission based (e.g. treatment of transfers)
    - Patient based (e.g. reference AMI admission)
    - Risk-adjustment variables (e.g. impact of SDx coding)
  - Early exploratory data analysis:
    - Patterns of PCI and CABG procedures after AMI
    - Possible explanatory factors (e.g. size, location, role)
    - Related resource issues (e.g. ALOS, hospital costing)
  - Formulation of advice to HCQI experts



# HCQI Experts - November 2016

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- Descriptive stream
  - Consider initial draft report
- Empirical stream
  - Consider initial draft report
  - Implications for HCQI Data Collection
  - Potential for publication in Health at a Glance
- Consideration of forward plan for 2017-18
  - Ongoing publication and communication
  - Lessons from pilot data collection (process/outcome)
  - Focus on ‘deepening’ and/or ‘broadening’ indicator development and data collection.



## Feedback

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Members are invited to:

- NOTE progress on the descriptive and empirical streams of work since November 2015
- COMMENT on their experience in participating in the pilot hospital data collection to date



# Risk Variables

**Analysis of Maximum Likelihood Estimates**

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-3.0122	0.0599	2528.3866	<.0001
SEX	1	-0.1585	0.0313	25.7077	<.0001
age85_	1	2.3885	0.0553	1864.4577	<.0001
age65_85	1	1.3442	0.0502	715.7088	<.0001
age45_65	0	0	.	.	.
Prev_AMI	1	0.2267	0.0574	15.6255	<.0001
Stemi_stat0	1	-1.1099	0.0408	738.5181	<.0001
Stemi_stat1	1	-0.3045	0.0389	61.3321	<.0001
Stemi_stat9	0	0	.	.	.
CCI_Class_rev	1	0.6656	0.0307	471.2762	<.0001