craftworks to convert and clean up original dataset before the
beginning of statistical analysis. To improve procedure of data
management by raising interoperability of dataset, we technically
examined a standard-based object-oriented data model for a
common database between data entry system and statistical
analysing system, and estimated how the process of data manage-
ment was changed with the new data model.

**Methods** We adopted the Archetypes data model, which is a
standard of ISO 15606, as the storage for collected dataset and
the R language and environment for statistical computing as the
statistical software. An example dataset was sampled from a
cohort study. We simulated to develop an exclusive data entry sheet
for the study. To estimate effect of introducing Archetypes database,
we enumerated operations which will be required to build the
system, input, review, clean, transfer, and analysis the example
dataset. The complexity of each operation was estimated. For
control, same estimation was performed on a system with tradi-
tional database.

**Results** Archetypes approach was expected to require more
complicated procedures to build the data entry system than tradi-
tional approach, however, more software components was
expected to reusable between other datasets. Both approaches
were expected to require similar number of operations to manage
datasets.

**Conclusion** For electrical data collection of epidemiological study,
introduction of standardised data model might lead to efficient
development of data entry system.

**Conclusion** This approach to measuring incidence will allow us to
gauge the impact of preventive interventions associated with the
HCV Action Plan.

**P1-45** NOVEL APPLICATION OF LOT QUALITY ASSURANCE
SAMPLING: AS A QUALITY CONTROL TOOL IN CENSUS
VERIFICATION
doi:10.1136/jech.2011.142976c.38

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**Introduction** Lot Quality Assurance Sampling (LQAS) was developed
as technique for quality assurance in industrial production. The use
of LQAS in health sciences is limited to coverage evaluations of
different health activities such as immunisation coverage, antenal

**Background** Prevalence of the hepatitis C virus (HCV) among
injecting drug users (IDUs) in Scotland is high. Through an
HCV Action Plan, the Scottish Government has invested signi-
cantly in harm reduction interventions with the goal of reducing
HCV transmission among IDUs. In evaluating the effectiveness
of interventions, estimates of the incidence, rather than the prev-
ance, of HCV are essential. The traditional approach to measuring
incidence—follow-up of a cohort of uninfected individuals to
measure seroconversion—can, however, be costly and suffer high
participant attrition rates. We report the first large-scale, national
application of a novel method designed to determine incidence of
HCV using a cross-sectional design.

**Methods** During 2008–2009, IDUs were recruited from needle
exchange services, completed an interviewer-administered ques-
tionnaire and provided a dried blood spot for anonymous HCV-

**Results** Prevalence of anti-HCV was 55% among the 2563 partic-
ipants. Among anti-HCV negative respondents, twenty-one were
HCV-RNA positive, yielding an incidence estimate of 12.1 per 100
person-years (corresponding to a viraemic pre-seroconversion
window period of 51 days). Individuals currently receiving meth-
adone had lower odds of incident infection (adjusted OR 0.15; 95%
CI 0.035 to 0.68) relative to those on methadone in the previous
6 months (but not currently).

**Conclusions** This approach to measuring incidence will allow us to
gauge the impact of preventive interventions associated with the
HCV Action Plan.

**P1-46** DIAGNOSTIC RADIATION EXPOSURE AND BREAST CANCER
RISK IN BRCA1/2 MUTATION CARRIERS IN THE GENE-RAD-
RISK STUDY
doi:10.1136/jech.2011.142976c.39

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**Introduction** BRCA1/2 mutation carriers might be more sensitive to
ionising radiation due to impaired DNA repair mechanisms.

**Methods** A retrospective European collaborative cohort study (GENE-RAD-RISK) of 1993 female BRCA1/2 mutation carriers was
performed using self-reported exposure to diagnostic radiation. Risk
of breast cancer was estimated using a weighted Cox proportional
hazards model with cumulative radiation exposure from diagnostic
procedures as a time-dependent variable lagged by 5 years.

**Results** are not presented in the abstract due to a publication
embargo.
P1-45 Novel application of lot quality assurance sampling: as a quality control tool in census verification

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