Author's response to reviews

Title: Maternal age and Infant Mortality in two Sicilian districts: a retrospective follow up study.

Authors:

Walter Mazzucco (waltermazzucco@unipa.it)
Rosanna Cusimano (rosanna.cusimano@libero.it)
Maurizio Macaluso (macaluso@comcast.net)
Claudio La Scola (clasc@libero.it)
Giovanna Fiumanò (achille.cernigliaro@regione.sicilia.it)
Salvatore Scondotto (salvatore.scondotto@regione.sicilia.it)
Achille Cernigliaro (achille_c@libero.it)
Giovanni Corsello (giocors@alice.it)
Giuseppe La Torre (giuseppe.latorre@rm.unicatt.it)
Francesco Vitale (francesco.vitale@unipa.it)

Version: 3 Date: 7 July 2011

Author's response to reviews: see over
Dear Sirs,

In agreement with the co-authors, we have revised the manuscript according to the reviewers’ suggestions. We hope that this revision meets with your approval, and that the manuscript is now suitable for publication in “BMC Public Health”. Below we have listed the reviewers’ comments requesting changes and our response to each comment.

Best regards,
Walter Mazzucco

Reviewer's report
Title: Maternal age and Infant Mortality in two Sicilian districts: a retrospective follow up study.
Version: 2 Date: 17 May 2011
Reviewer: David A Paul
Reviewer's report:

Major Compulsory Revisions:

3. More demographic information regarding the districts should be provided for the reader. How many NICUs are in each district? Are Reproductive Endocrinology/Infertility Services available in each district? High risk OB services? Are the rates of multiple births available from each district? It would be helpful to know the total number of births and premature births in each district.

Some of the changes have been made. Please provide information on high risk OB services, in addition to the NICU and MAC services. Please clarify that the number of inhabitants listed at 1,2 refers to 1.2 Million inhabitants.

3.1 We have provided additional information about high risk OB services, and we have modified the text as required (Methods section, third paragraph): “The two districts differed by geographic and demographic characteristics as well for health care organization aspects. In the Palermo district 5 NICU are located in 5 different hospitals, all of which are equipped with high risk obstetrics services, and are concentrated in the metropolitan area of Palermo. These units cover a population of about 1,2 million inhabitants and 13071 births per year (Central Institute of Statistics, year 2006). In the Messina district 5 NICU are located in 5 different hospitals, two of which are large medical centres equipped with high risk obstetrics services and are located in the metropolitan area of Messina, whereas three are located in small hospitals distributed in
the district, only one of which is equipped for the management of high risk pregnancies. These units cover a population of about 0.6 million inhabitants and 5656 births per year (Central Institute of Statistics, year 2006)."

4. Although the proportion of VLBW infants who died is similar in each district, the NMRs are very different. This highlights the point made above, readers need to know more about NICU availability. The authors state that twice as many infants were admitted to NICU in Messina. Why was this case with similar BW distribution? Some data on NICU admission is presented at the end of Table 2. Please clarify what is meant by “Presence” in this table.

5. Authors need to explain why there was an increase in deaths from prematurity in Messina without any difference in the distribution of birthweight or gestation. This would suggest either a difference in registration/classification of deaths or difference in quality of NICU care.

6. Please provide data on multiple births in table 2. The authors speculate that the increase in IMR in older women is secondary to IVF, multiple births and low birth weight. The distribution in birthweight did not differ in the infants who died. The study would be strengthened if evidence were presented that the regions differed in birthweight, multiple births or infertility procedures. This information is really needed to strengthen the speculation of the authors.

7. In Table 3, although the Odds ratios differ in magnitude for women >40, the 95% overlap for the 2 districts. Is there really a difference between regions given this overlap? It is also curious why there is no maternal age affect in the 35-39 category in either region? Please speculate.

6 and 7. In order to discuss limitations related to the lack of data on some variables of interests and to speculate about increased risk among mothers who were more than 40 years old, we have implemented the text as follows (Discussion section, sixth paragraph): "We could not gather information on the multiple birth rate in the two districts, nor could we assess the impact of infertility treatment on the birth and infant mortality rates of the two districts. Thus, we cannot provide evidence for or against a role of infertility treatment in the differences observed between districts. We note that the excess infant mortality in the Messina district is primarily driven by increased risk among mothers who were more than 40 years old. This is an age group in which infertility treatment is common and births following such treatment may account for a much larger proportion of births and infant deaths than for younger maternal age groups. On the other hand, as previously stated, we have no specific evidence to corroborate this hypothesis."
Discretionary Revisions:

1. Some of the abbreviations are not standard and difficult to follow including RenCaM, BC, ISTAT, ASP, SPO.
   o Changes made.

2. Please clarify how births were classified for women residing outside of the districts who delivered in the districts and for women residing in the districts who may have delivered elsewhere.
   o Clarification provided.

**Level of interest:** An article of importance in its field  
**Quality of written English:** Needs some language corrections before being published  
**Statistical review:** Yes, and I have assessed the statistics in my report.  
**Declaration of competing interests:** I declare that I have no competing interests