**Training Course in MCH Epidemiology**

**Denver, June 2012**

**Choosing an Analytic Approach Exercise**

A group of researchers is interested in the impact of maternal smoking on infant birthweight. Several companion studies are being conducted. **CIRCLE ALL THAT APPLY.**

1. Which statistical approach(es) would be appropriate for analyzing the following data:

|  |  |
| --- | --- |
| Explanatory/Independent Variable(s) | Outcome/Dependent Variable |
| Maternal Smoking: > 40 cigarettes per day 20-39 cigarettes per day 1-19 cigarettes per day Nonsmoker | Birthweight < 2500 grams: Yes No |

* + 1. Ordinary Least Squares Regression
		2. Binary Logistic Regression
		3. Log Binomial Regression
		4. Cumulative or Generalized Logit
		5. Ordinary Least Squares Regression –Random Effects/GEE
		6. Ordinary Least Squares Regression –Hybrid Model
		7. Binary Logistic Regression – Random Effects/GEE
		8. Binary Logistic Regression – Hybrid Model
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| Early entry into prenatal care (yes v. no) |
| Neighborhood income level |

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8. Binary Logistic Regression – Hybrid Model
9. Which statistical approach(es) would be appropriate for analyzing the following data:

|  |  |
| --- | --- |
| Explanatory/Independent Variable(s) | Outcome/Dependent Variable |
|  Maternal Smoking: Smoker Nonsmoker | Birthweight: <1500 grams 1500-2499 grams 2500+ grams |

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| Explanatory/Independent Variable(s) | Outcome/Dependent Variable |
|  Maternal Smoking : Smoker Nonsmoker | Birthweight in Grams |
| Early entry into prenatal care (yes v. no) |
| Neighborhood income level |

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9. Which statistical approach(es) would be appropriate for analyzing the following data:

|  |  |
| --- | --- |
| Explanatory/Independent Variable(s) | Outcome/Dependent Variable |
| # cigarettes smoked per day during pregnancy | Birthweight < 2500 grams: Yes No |
| Early entry into prenatal care (yes v. no) |
| Maternal weight gain during pregnancy in pounds |

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| Explanatory/Independent Variable(s) | Outcome/Dependent Variable |
| # cigarettes smoked per day during pregnancy | Cases: <2500 gramsControls: 2500+ grams |
| Maternal age (years) |

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| Explanatory/Independent Variable(s) | Outcome/Dependent Variable |
| Maternal Smoking: > 40 cigarettes per day 20-39 cigarettes per day 1-19 cigarettes per day Nonsmoker | Birthweight: < 1000 grams 1000-1999 2000-2999 3000-3999 4000-4999 >=5000  |
| Early entry into prenatal care (yes v. no) |
| Maternal age (years) |

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| Explanatory/Independent Variable(s) | Outcome/Dependent Variable |
| # cigarettes smoked per day during pregnancy | Birthweight < 2500 grams: Yes No |
| Early entry into prenatal care (yes v. no) |
| Maternal weight gain during pregnancy in poundsMother ID (multiple births per mother) |

1. Ordinary Least Squares Regression – Fixed Effects
2. Binary Logistic Regression – Fixed Effects
3. Log Binomial Regression
4. Cumulative or Generalized Logit
5. Ordinary Least Squares Regression –Random Effects/GEE
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7. Binary Logistic Regression – Random Effects/GEE
8. Binary Logistic Regression – Hybrid Model