Supplementary Online Content


eAppendix. Online Addendum.

This supplementary material has been provided by the authors to give readers additional information about their work.
eAppendix.

Online Addendum

Original Method A 2006

Goal: To calculate the number of non-melanoma skin cancer (NMSC) and the number of persons of any age in the U.S. with NMSC in 2006

1. Find $a$  $a = 2,048,517$
   a. Definition $a =$ the number of skin procedures for cancer in 2006 in Medicare B Fee-for-Service (FFS) for all ages.

2. Find $j$  $j = 0.937$
   a. Definition $j =$ the proportion of procedures for cancer in 2006 specific for NMSC.
   b. Source: 2006 5% Sample LDS SAF Physician/Supplier Claims

3. Find $k$  $k = a \times j = 1,919,460$
   a. Definition $k =$ the number of procedures for NMSC in 2006 in Medicare B FFS

4. Find $b$
   a. Definition $b =$ the proportion of $k$ that are in patients $\geq 65$ year of age
   b. Source of numbers
      i. 1.6296 = Rate of NMSC procedures per person $\geq 65$ in 2006. From 2006 5% Sample LDS SAF Physician/Supplier Claims.
      ii. 1.6235 = Rate of NMSC procedures per person < $65$ in 2006. From 2006 5% Sample LDS SAF Physician/Supplier Claims
      iii. 27,490,000 = Number of persons $\geq 65$ enrolled in Medicare B FFS in 2006. From Heath Care Financing Review 2007 Statistical Supplement(HCFR), 2006.

\[ b = \frac{1.6296 \times 27,490,000}{(1.6235 \times 5,418,000) + (1.6296 \times 27,490,000)} = 0.8359 \]
iv. 5,418,000 = Number of persons < 65 enrolled in Medicare B FFS in 2006

Heath Care Financing Review 2007 Statistical Supplement (HCFR), 2006

5. Find c 
   \[ c = 1,604,477 \]
   a. Definition c = number of procedures for NMSC in 2006 in Medicare B FFS for persons \( \geq 65 \) years of age

6. Find d
   \[ d = \frac{27,490,000 \text{ persons}}{37,253,065 \text{ persons}} = 0.7379 \]
   a. Definition d = Among all persons over age 65 in the U.S. population, the proportion enrolled in Medicare B FFS.
   b. Source of numbers:
      i. 27,490,000 = Number of persons \( \geq 65 \) enrolled in Medicare B FFS in 2006. From Heath Care Financing Review 2007 Statistical Supplement (HCFR), 2006

7. Find e
   \[ e = \frac{c}{d} = \frac{1,604,477 \text{ procedures}}{0.7379} = 2,174,383 \text{ procedures} \]
   a. Definition e = number of skin procedures for NMSC in 2006 in total U.S. in persons \( \geq 65 \) years of age

8. Find f
   \[ f = \frac{2,482,801}{4,003,887} = 0.62 \]
   a. Definition f = of the visits with a procedure for NMSC, the proportion of visits that were for persons 65 and older.
   b. Source of numbers:
      i. 2482801 = weighted frequency of NAMCS visits with a procedure for NMSC for persons \( \geq 65 \) for 2006.
ii. 4003887 = weighted frequency of NAMCS visits with a procedure for NMSC for all persons for 2006.

9. Find \( g \)  
   \[ g = \frac{e}{f} = 3,507,069 \]
   a. Definition \( g \) = total number of skin procedures for NMSC in U.S.

10. Find \( h \)  
    \[ h = 1.6293 \]
    a. Definition \( h \) = number of procedures for NMSC per person in Medicare B FFS in 2006.
    b. Source: From 2006 5% Sample LDS SAF Physician/Supplier Claims.

11. Find \( i \)  
    \[ i = \frac{g}{h} = 3,507,069 / 1.6293 = 2,152,500 \]
    a. Definition \( i \) = number of persons in the U.S. with NMSC in 2006
Revised Method A 2006

Goal: To calculate the number of non-melanoma skin cancer (NMSC) and the number of persons of any age in the U.S. with NMSC in 2006

1. Find \( a = 2,048,517 \)
   a. Definition \( a \) = the number of skin procedures for cancer in 2006 in Medicare B Fee-for-Service (FFS) for all ages.

2. Find \( j = 0.937 \)
   a. Definition \( j \) = the proportion of procedures for cancer in 2006 specific for NMSC
   b. Source: 2006 5% Sample LDS SAF Physician/Supplier Claims

3. Find \( k = a \times j = 1,919,460 \)
   a. Definition \( k \) = the number of procedures for NMSC in 2006 in Medicare B FFS

4. Find \( b = (102,437 - 4,436) / 102,437 = 0.9567 \)
   a. Definition \( b \) = the proportion of \( k \) that are in patients \( \geq 65 \) year of age
   b. Source: 2006 5% Sample LDS SAF Physician/Supplier Claims

5. Find \( c = k \times b = 1,836,347 \)
   a. Definition \( c \) = number of procedures for NMSC in 2006 in Medicare B FFS for persons \( \geq 65 \) years of age

6. Find \( d = \frac{27,490,000 \text{ persons}}{37,253,065 \text{ persons}} = .7379 \)
   a. Definition \( d \) = Among all persons over age 65 in the U.S. population, the proportion enrolled in Medicare B FFS.
   b. Source of numbers:

© 2015 American Medical Association. All rights reserved.
i. 27,490,000 = Number of persons ≥ 65 enrolled in Medicare B FFS in 2006. From Health Care Financing Review 2007 Statistical Supplement (HCFR), 2006


7. Find e  
   e = c/d = 1,836,347 / 0.7379 = 2,488,612

   f. Definition e = number of skin procedures for NMSC in 2006 in total U.S. in persons ≥ 65 years of age

8. Find f  
   f = 2,482,801 / 4,003,887 = 0.62

   g. Definition f = of the visits with a procedure for NMSC, the proportion of visits that were for persons 65 and older.

   h. Source of numbers:
      
      i. 2482801 = weighted frequency of NAMCS visits with a procedure for NMSC for persons ≥ 65 for 2006.
      
      ii. 4003887 = weighted frequency of NAMCS visits with a procedure for NMSC for all persons for 2006.

9. Find g  
   g = e/f = 4,013,890

   i. Definition g = total number of skin procedures for NMSC in U.S.

10. Find h  
    h = 1.6293

   j. Definition h = number of procedures for NMSC per person in Medicare B FFS in 2006.

   k. Source: From 2006 5% Sample LDS SAF Physician/Supplier Claims.

11. Find i  
    i = g/h = 4,013,890 / 1.6293 = 2,463,567

   l. Definition i = number of persons in the U.S. with NMSC in 2006

© 2015 American Medical Association. All rights reserved.
Revised Method A 2012

Goal: To calculate the number of non-melanoma skin cancer (NMSC) and the number of persons of any age in the U.S. with NMSC in 2012

1. Find a  
   a = 2,321,058
   a. Definition a = the number of skin procedures for cancer in 2012 in Medicare B Fee-for-Service (FFS) for all ages.
   b. Source: Medicare physician/supplier procedure summary master file. Time Series Data Col. AL Row 51

2. Find j  
   j = 0.944
   a. Definition j: the proportion of procedures for skin cancer in 2012 specific for NMSC
   b. Source: 2012 5% Sample LDS SAF Physician/Supplier Claims Overview Col G Row 12

3. Find k  
   k = a x j = 2,191,079
   a. Definition k = the number of procedures for NMSC in 2012 in Medicare B FFS

4. Find b  
   b = (116,083 – 5,213) / 116,083 = 0.9551
   Definition b = the proportion of k that are in patients ≥ 65 year of age
   Total number of procedures in 2012 for NMSC (all ages) = 116,083
   Total number of procedures in 2012 for NMSC for Medicare FFS beneficiaries < 65 years old = 5,213
   a. Source: 2012 5% Sample LDS SAF Physician/Supplier Claims

5. Find c  
   c = a x b = 2,092,670
   a. Definition c = number of procedures for NMSC in 2012 in Medicare B FFS for persons ≥ 65 years of age

6. Find d  
   d = 27,239,770 / 43,145,356 = .6313
   a. Definition d = Among all persons over age 65 in the U.S. population, the proportion enrolled in Medicare B FFS.
   b. Source of numbers:

© 2015 American Medical Association. All rights reserved.


7. Find e 
   \[ e = \frac{c}{d} = \frac{2,092,670}{0.6313} = 3,314,858 \]
   a. Definition e = number of skin procedures for NMSC in 2012 in total U.S. in persons ≥ 65 years of age

8. Find f 
   \[ f = 0.61 \]
   a. Definition f = of the visits with a procedure for NMSC, the proportion of visits that were for persons 65 and older. This is an average of 2008-2010 because 2010 is the most recent year available. There is no trend up or down during this time period.
   b. Source of numbers:
   i. \( p \) = weighted frequency of NAMCS visits with a procedure for NMSC for persons ≥ 65 for the indicated year.
   ii. \( r \) = weighted frequency of NAMCS visits with a procedure for NMSC for all persons for the indicated year.

2006: \( f = 0.62 \)
\( p=2482801 \) = weighted frequency of NAMCS visits with a procedure for NMSC for persons ≥ 65
\( r=4003887 \) = weighted frequency of NAMCS visits with a procedure for NMSC for all persons

2007: \( f = 0.66 \)
\( p=3997181 \) = weighted frequency of NAMCS visits with a procedure for NMSC for persons ≥ 65
\( r=6023271 \) = weighted frequency of NAMCS visits with a procedure for NMSC for all persons
2008: \( f = 0.55 \)  
\[ p=2612212= \text{weighted frequency of NAMCS visits with a procedure for NMSC for persons } \geq 65 \]  
\[ r=4771044= \text{weighted frequency of NAMCS visits with a procedure for NMSC for all persons} \]

2009: \( f = 0.61 \)  
\[ p=2829166= \text{weighted frequency of NAMCS visits with a procedure for NMSC for persons } \geq 65 \]  
\[ r=4616820= \text{weighted frequency of NAMCS visits with a procedure for NMSC for all persons} \]

2010: \( f = 0.67 \)  
\[ p=3773975= \text{weighted frequency of NAMCS visits with a procedure for NMSC for persons } \geq 65 \]  
\[ r=5618310= \text{weighted frequency of NAMCS visits with a procedure for NMSC for all persons} \]

9. Find \( g \)  
\[ g = e/f = 3,314,858/0.61=5,434,193 \]  
\( a. \) Definition \( g = \) total number of skin procedures for NMSC in U.S.

10. Find \( h \)  
\[ h = 1.645 \]  
\( a. \) Definition \( h = \) number of procedures for NMSC per person in Medicare B FFS in 2012.  
\( b. \) Source: From 2012 5% Sample LDS SAF Physician/Supplier Claims.

11. Find \( i \)  
\[ i = g/h = 5,434,193/1.645 = 3,303,461 \]  
\( a. \) Definition \( i = \) number of persons in the U.S. with NMSC in 2012

12. Find the percentage of BCC’s and SCC’s treated in the Medicare population in 2012  
Source: From 2012 5% Sample LDS SAF Physician/Supplier Claims

\( a. \) Number of unspecified malignant neoplasms of the skin (icd-9 173.X0) = 104,700

\( b. \) Number of basal cell carcinomas of the skin (icd-9 173.X1) =1,029,660

\( c. \) Number of invasive squamous cell carcinomas of the skin (icd-9 173.X2) = 837,940
d. Number of other specified malignant neoplasms of the skin (icd-9 173.X9) = 29,040

e. Number of squamous cell carcinomas in situ of the skin (icd-9 232.X) = 189,760

Total number of procedure codes for NMSC from 2012 = 2,191,100

f. BCC = 47.0% of total procedures. Invasive SCC = 38.24%. SCC in situ = 8.66%. Other specified and unspecified malignant cutaneous neoplasms = 6.1%

13. Ratio of BCC to invasive SCC = 51,483/41,897 = 1.23

14. Ratio of BCC to invasive and in situ SCC = 1,029,660/1,027,700 = 1.00