BMDS 2.7 Release ReadMe

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1. ABOUT THIS BMDS RELEASE

BMDS release Version 2.7 replaces Version 2.6.0.1.

Download the latest BMDS installation file from the BMDS download page. Installation instructions are also on that page. Check the BMDS web site for updates and additional information.

2. WHAT'S NEW IN BMDS 2.7

BMDS 2.7 includes several new and improved features to improve usability and ensure accurate and reliable results:

- The BMDS .out file now includes the BMDU (benchmark dose upper confidence limit) calculation for the continuous and some dichotomous models (not nested or background dose/response).
- For the MS_Combo model, BMDS now reports a combined BMDU in the .out file.
- On the exponential model option screen, added the choice "Automatic" (in addition to Up and Down) for the Adverse Direction option.
- Revised the nested model summary table to include the following values: Combined P-Value, Observed Chi-Square, and DF (Degrees of Freedom). The nlogistic, NCTR, and Rai and van Ryzin nested models now include the degrees of freedom calculation in their .out files.
- On the nested model option screens:
  - Renamed "Litter Specific Covariate" to "Use a Litter Specific Covariate (LSC)" with a checkbox.
  - Renamed "Fixed Litter Size" to "Fixed LSC Value"; it is disabled unless the LSC option is enabled.

BMDS 2.7 also includes the following minor fixes and enhancements to:
- Accept any valid text in the nested models option screen's User Notes field.

- Report the correct A3 log-likelihood value for exponential and power models.
- Ensure BMDS displays a plot when the user's BMDS installation path has space characters.
- Alert the user when Weekly and Monthly auto-update preferences are checked.
- Ensure auto-update works outside of the EPA network.
- Check that, for nested models, the litter size is greater than zero; otherwise, display an error message.
- Assign zero responders for any litter that has a zero estimated probability, in cases when the nested model bootstrapping methods are chosen.
- Display the correct standard errors for the exponential models.
- Display better-formatted output for the exponential model .out file.

3. ICF INTERNATIONAL'S BMDS WIZARD

The BMDS 2.7 install package includes ICF International's BMDS Wizard version 1.11, an Excel-based tool that facilitates the preparation and organization of and enhances the reporting capabilities of BMDS modeling sessions. This install includes multiple Wizard template files that are preformatted for continuous, dichotomous, dichotomous-cancer, and multi-tumor datasets. BMDS Wizard also supports 32-bit and 64-bit versions of Microsoft Office on Windows 7 and 10.

BMDS "power users" employ ICF BMDS Wizard as a shell to simplify the BMD modeling process by streamlining data entry, model selection, option file development, output file reporting, and model comparisons.

ICF BMDS Wizard 1.11 can also export Microsoft Word-formatted reports that employ the latest EPA-approved reporting format (as of September 2014). It can only export reports for continuous, dichotomous, and dichotomous-cancer models.

Also note that MS-Combo Wizard v1.10 is compatible *only* with Wizard v1.11 and will not work with previous versions of Wizard.

To run the ICF BMDS Wizard, go to the BMDS 2.7 program directory and locate the "Wizard" subdirectory. Refer to the BMDS Wizard User's Guide PDF located in the Wizard subdirectory or the Quick Start tabs in the Wizard templates for details on running the tool.

For more information, refer to ICF's BMDS Wizard Web page.

4. BMDS SYSTEM REQUIREMENTS

- 16 Megabytes of RAM
- Microsoft Windows 7, 8, or 10. Only operation in Windows 10 has been fully tested at this time.
- Microsoft .NET 4.0 or later. If your computer is set up to allow or be notified of downloads of Microsoft software, then it is likely that that version of the .NET framework is already installed. Otherwise, you can download and install Microsoft's latest version of .NET for client desktops.
- **To run the ToxicoDiffusion model**: Install version 3.1 or later of the R statistical software.

Note: There are no plans at this time to create Macintosh or Linux versions of BMDS. However, BMDS should work on Macs using emulation software, such as VMWare Fusion or Parallels Desktop.

5. UNINSTALLING PREVIOUS VERSIONS OF BMDS (OPTIONAL)

You do not need to uninstall previous versions of BMDS.

However, if you want to uninstall previous versions of BMDS, it is recommended that you retain the directory structure for the folders holding your previous model runs' input and output data files. Keeping those files and folders in place will maintain the functionality of your previous BMDS sessions.

6. INSTALLING BMDS 2.7

BMDS can be installed to any folder where the user has create/read/write privileges.

To install BMDS:

1. Download the latest BMDS installation file from the BMDS download page. Installation instructions are also on that page.
2. Locate the.msi file you downloaded. Typical locations for file downloads are the Windows Desktop or the Download directory in My Documents.
3. In Windows Explorer, run the.msi file. Follow the prompts to accept the default install directory or select a different one.

   It is recommended that you place the BMDS270 folder (and its subfolders) in the simplest, shortest directory, without special characters or spaces, and for which you have administrative rights (for most users, this will be C:\Users\[user's LAN ID], but sometimes includes C:\).

   The Excel-based BMDS Wizard templates will work with BMDS 2.7 installed in any directory, however the Wizard folder MUST be installed in the same directory as the BMDS270 executable.

After starting BMDS, use the Help feature for further assistance.

7. DETERMINING WHETHER BMDS IS PROPERLY INSTALLED

The following procedure will help you determine whether the BMDS components have properly loaded and the application is working as expected.

1. Start BMDS.
2. From the BMDS application menu, choose File>Open>Dose Response Session (.ssn). The Open File dialog box should display the contents of the BMDS SessionFiles folder.
3. Select and open any .ssn file (e.g., Cancer-BMR10.ssn). The Session screen should appear.

4. Click the "Save As" button and resave the session under a different name (e.g., Cancer-BMR10-test.ssn; you can delete this file later).
5. Click the "Run" button on the Session screen. Plots and a summary report should appear.
6. At the top of the summary report screen, select File>Export to Excel. Pre-selected summary report data should export to several Excel worksheets, with the "Dichotomous Format" or Continuous Format" worksheet in the initial view.

If you are able to complete the above steps without difficulty (aside from normal model error messages), BMDS is likely to be installed properly and completely.

8. TROUBLESHOOTING

- Non-U.S. users should change the Windows default option for the decimal separator from a comma to a period. This option can be found in the Region and Language control panel. Using BMDS with a comma as the decimal separator will cause program errors.
- Some users have reported that clicking or double-clicking on a Help topic generates the message "Navigation to the web page was canceled." **Solution:** change the security permission for the following file in the BMDS folder -- bmds270.chm -- to "Full Control". If you are unable to change the permission, then you need to work with someone who has Administrator rights to make this change.

  To change the permission:
    1. Right-click on the bmds270.chm file in Windows Explorer and select "Properties" from the context menu. The Properties dialog box appears.
    2. Select the "Security" tab.
    3. In the Permissions box at the bottom, select the "Allow" column for "Full control."

- The column headers for data files should avoid spaces or special characters.
- Directory and file names should avoid spaces or special characters that may cause problems when BMDS tries to open those files later. Please refer to the BMDS help file's Troubleshooting topic titled "Avoid Using Windows Reserved Characters in File and Path Names."
- The combination of path and filename for BMDS data and output files cannot exceed 255 characters. For this reason, install BMDS to the simplest, shortest path possible.

9. KNOWN BMDS ISSUES

- If you move option (.opt) or data (.dax) files associated with a session, you will need to update the sessions that reference those files.
- The flexibility in BMDS to create multiple model runs (sessions) with pre-set options for each model run should be used with caution to avoid invalid or unintended run options with a selected model.
- The "BMDL Curve Calc." feature does not always give reasonable results. This feature is not a critical component of BMDS and it is recommended that this option be turned off (the default choice), particularly if it is causing plot or model convergence problems.
- The Rai and van Ryzin model may inaccurately calculate BMDL in some circumstances, resulting in the same value for BMD and BMDL.

- Specifying or initializing parameter values in the exponential models has been disabled in the current release.
- For the Power model only: more than one distinct observation per dose group is needed for continuous data sets to get the full set of model results (tests of the fit of the model compared to models A1 – A3). Although the model will run, error messages for some of the internal computations associated with those tests for fit will appear (as a warning message in the interface and in the output file). Regardless, the results of any Power model fit to data with sample sizes of 1 (per group) should be viewed with caution. While the other BMDS models will run N=1 data, the models will not return any test results.
- BMDS 2.7 is not backward-compatible with nested model options files created in BMDS 2.6.0.1 or earlier. If you run a session that contains a nested model using a pre-2.7 options file, BMDS will display an error message saying the file cannot be opened or read and stops processing the session. **Solution:** Recreate the options file in BMDS 2.7. You can also submit an eTicket requesting instructions for converting an old options file.

10. BMDS SUPPORT

If you have problems or concerns, please contact us using our Help Desk Form. Or, from within BMDS, select Help > BMDS Support to open a support ticket.

11. RECEIVE UPDATES ON NEW RELEASES

Sign up to receive email updates on new releases or important information.