

Microsoft Tools Enhance Training and Management of Off-site Dietary Coders

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FedCASIC Workshops

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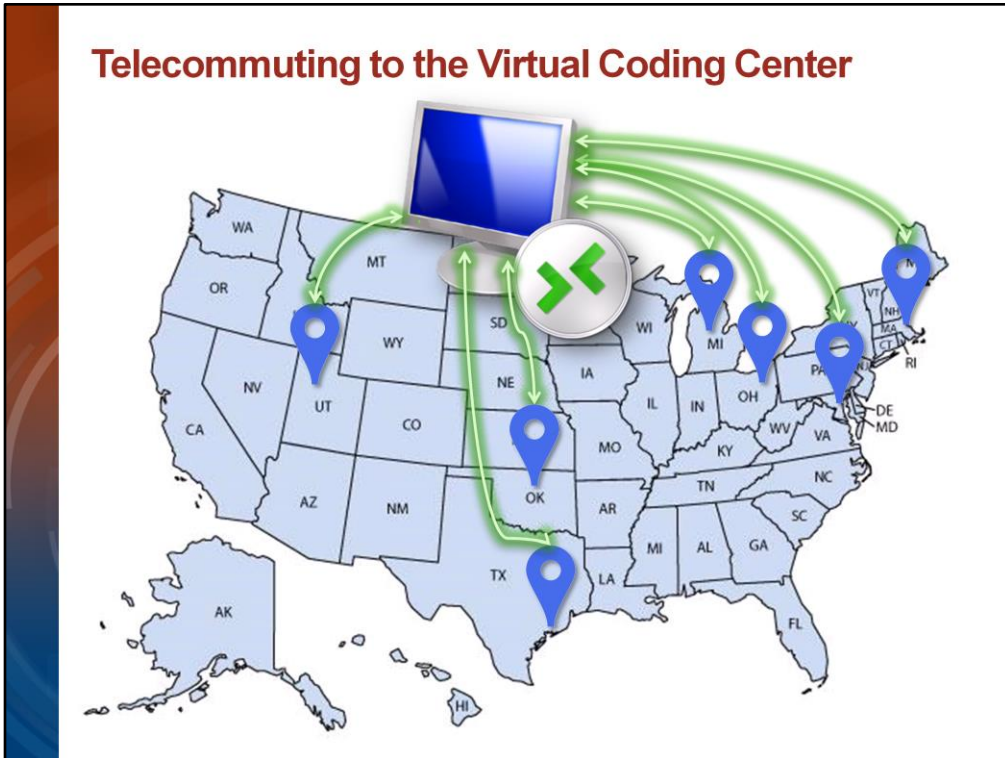
March 4, 2015

Summary

I will discuss the technology we use for training and managing dietary coders who telecommute to Westat to work in our Virtual Coding Center.



Telecommuting to the Virtual Coding Center



Our company has multiple physical locations across the US. We also have a number staff who work from home or outside of a Westat office. These off-site workers connect to the Westat network using a Virtual Machine, which allows access to the majority of the applications and systems needed for their work. I am here representing the Nutrition Research Group, who are mostly off-site employees working together across the seven states highlighted on the map.

Telecommuter Tools



These are the computer programs we use during our daily telecommute. We use dietary coding software that was developed by the USDA, called Survey Net, as our primary dietary coding software. We use these Microsoft programs to support our dietary coding work. We rely on Lync for instant messaging, video conferencing, and voice calls and SharePoint hosts our group website. I will explain how we use these tools for training and daily coding operations.

Dietary Data Collection at Westat

- NHANES Mobile Examination Units
 - Nutritionists conduct in-person and telephone interviews
- Westat Telephone Research Center (TRC)
 - Off-site staff interview via telephone through the TRC's telephony system

First let me give you some background about Westat's history of dietary data collection. Nutritionists in the NHANES Mobile Examination Units conduct in-person and telephone interviews. Off-site interviewers conduct telephone interviews using the Telephone Research Center's telephony system. The next step in the process is dietary coding.

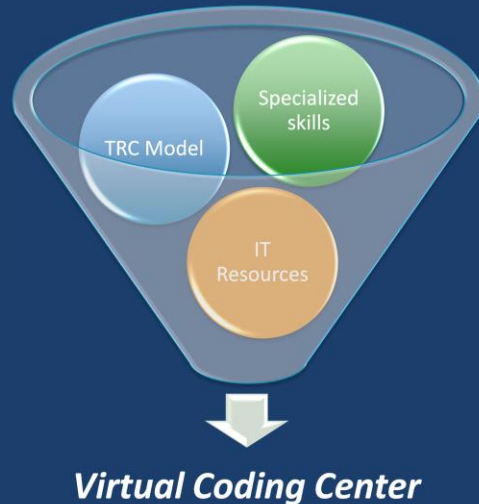
Dietary Coding at Westat

- NHANES Dietary Coding Center
 - Westat main campus
 - Dietary coders work in shared office space
 - Supervisors working in the same room
 - Dedicated to NHANES study

At the NHANES Dietary Coding Center at Westat's main campus, dietary coders work in shared office space with supervisors to process dietary intakes. NHANES staff are dedicated to the study and rarely work on other studies. So we knew that expanding our capacity for dietary coding would mean that we would need to hire new coders.

Why a Virtual Coding Center?

- Expand coding capabilities
- Proven model for training and supporting off-site staff
- Need staff with specialized skills
- Experience with IT resources



Westat's TRC hires and trains Off-site interviewers regularly, and we saw their operation as a model to deliver high quality training and support to dietary coders. Our experience with the virtual environment made us comfortable with the potential to train and support Off-site staff. Instead of limiting ourselves to hiring only within the Rockville area, we considered creating a virtual coding center to enhance our capabilities.

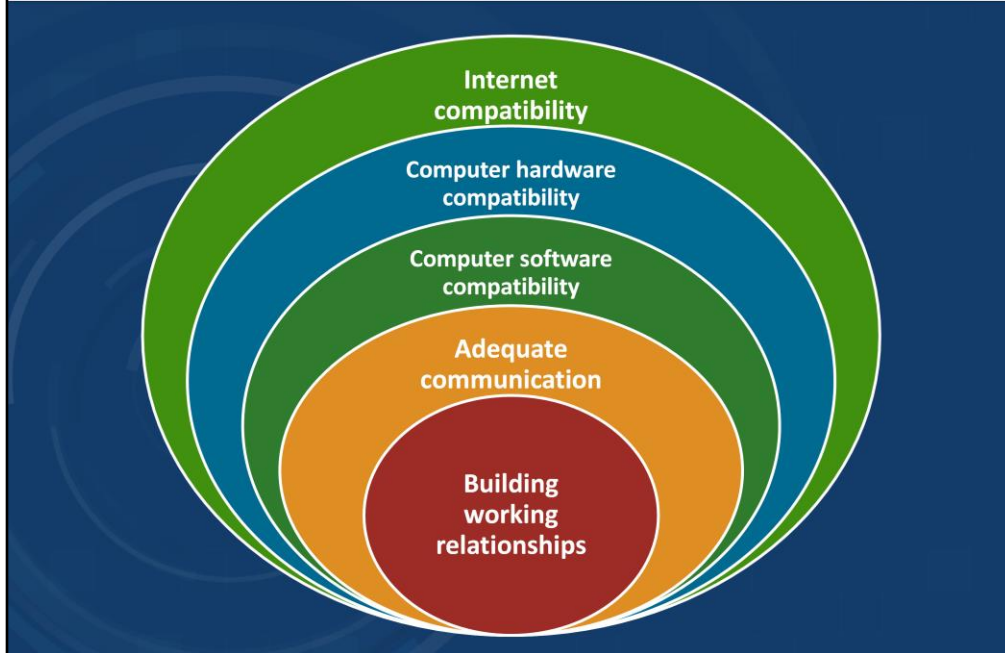
Advantages of Hiring Off-site Dietary Coders

- Larger pool of potential coders with
 - Above average computer skills
 - Experience in foods, nutrition, science, and research
 - Detail-oriented, focused, able to work independently
- Cost efficient training and support
- Employee satisfaction¹
- Less risk of attrition¹
- Productivity¹

¹Global Workplace Analytics. Advantages of Telecommuting For Companies. Accessed Feb. 2015.
<http://globalworkplaceanalytics.com/resources/costs-benefits>

Since we were seeking specialized skills that are very hard to find for a part-time hourly position, we saw several advantages to recruiting off-site coders. We could select from a larger applicant pool and provide cost efficient training and support. Telecommuting has also improved employee satisfaction, reduced attrition, and increased productivity, so we saw telecommuting as an incentive to attract long term employees.

Enabling Off-site Dietary Coders



Our goal was to make sure that the virtual environment operated smoothly enough to replicate the on-site work environment. In order to do this, we needed to build effective working relationships, which required that all the systems were in place to support adequate communication, such as functioning internet and computer compatibility.

Challenges with Training Off-Site Coders

- Connecting trainees to Westat's network to engage with the training
- Converting the in-person training to Internet-based training
 - Decide on a platform to broadcast the training
 - Deliver the training materials
 - Monitor and observe progress
 - Evaluate successful completion

Training dietary coders presented two main challenges. First, we needed to ensure the coder's software and Internet were compatible to connect to Westat's virtual network to install software necessary to complete training. We also had to convert in-person training to an internet-based training. We had to 1) Decide on a platform to broadcast the training, 2) Deliver the training materials, 3) Monitor and observe progress, and 4) Evaluate successful completion.

Modifying Training for Dietary Coders




In-Person Training

- Conference room
- PowerPoint presentation
- Printed documents

- Self-led modules
- Trainer led-modules
- Discussions
- Observation

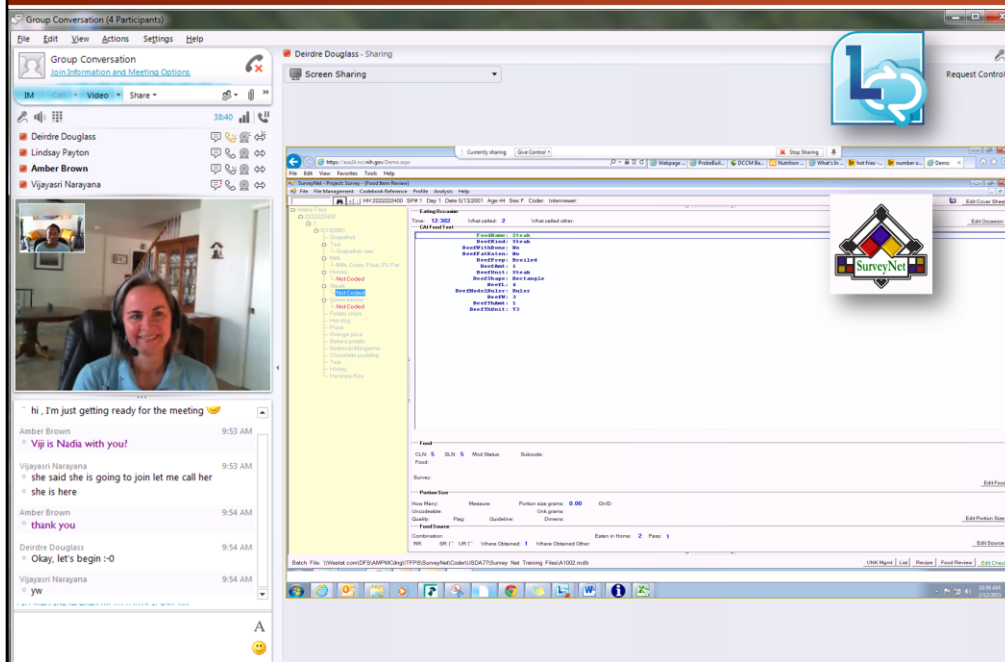
Vs.

Off-site Training

-  Lync with Webcam
-  PowerPoint presentation
- Mailed documents
-  Documents on SharePoint
- Self-led modules
- Trainer led-modules
- Discussions
- Monitored via webcam
- Monitored with activity tracking

This slide compares in-person to off-site training. The blue text highlights features that we changed or added to the in person training. Traditionally training would occur in a conference room, but of course we could not do this with staff in multiple locations. We used Lync to replace the conference room, by broadcasting our PowerPoint presentations. During in-person training we provide paper handouts to the coders. For our offsite staff, we mailed their documents a few days before training and trained them to access the other documents on SharePoint. In both settings, they completed modules and participated in discussions. In person, we monitor by observation. For off site training, we monitored using webcams, asking for email updates, and reviewing documents.

Training with Lync, Webcam and Screen Sharing



This is an example of training on Lync. The video of the person talking shows on the left side while the presentation is on the right side. The left panel also shows all of the attendees and their connection status. There is also a instant message window on the left panel.

Lessons Learned from Coder Training

- Add two days at the beginning of training for technology preparation
- Use web cams as much as possible to check for understanding
- Clearly identify independent activities from group activities
- Ask trainees questions to make sure everyone has the right work environment



This was an ambitious goal and it was very hard to achieve. After training the coders, we learned a few things:

We should include one or two days in the training schedule to make sure that all of the hardware and software is set up properly for coders. Internet and computer settings at their homes may need to be modified and this takes a lot of time.

We should use web cams as much as possible when talking to check for understanding. Body language can indicate confusion or frustration that can be easily missed in voice-only communication.

Since the training occurs in a group format, we need to emphasize when coders are to work as individuals instead of in groups.

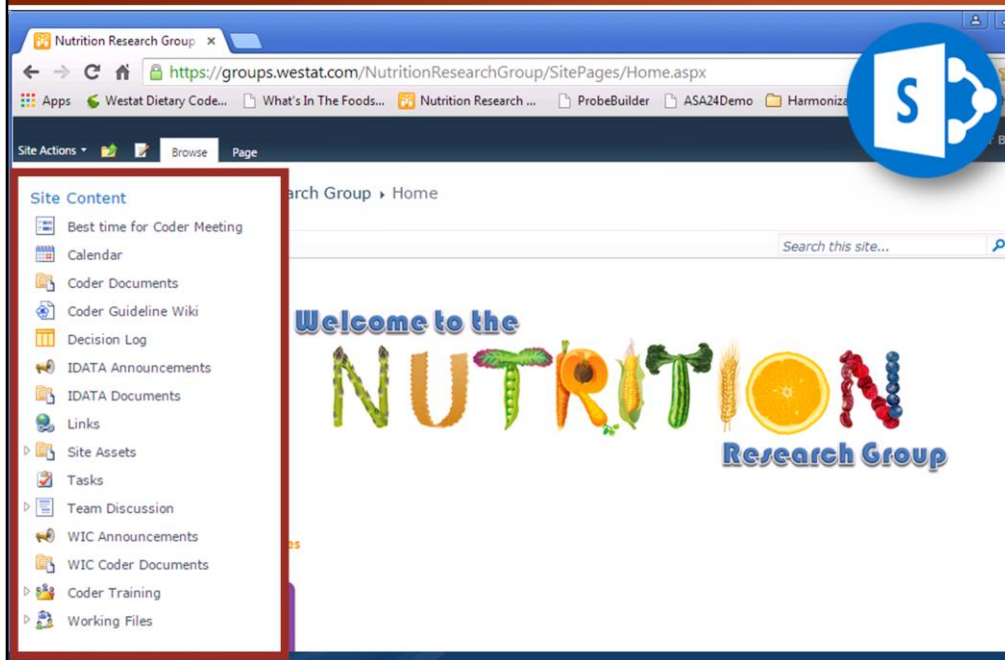
We also learned that we should ask the trainees more questions than we would in person to ensure that their work environment is supportive of the work they are doing. For example, "Can you see the presentation on your screen?" "Can you hear me clearly?" "We are looking at the food model booklet. Do you have yours in front of you?"

Example of a Coder's Desktop

The screenshot displays a Windows desktop environment with several applications open. On the left, Microsoft Excel is open with a document titled 'Dietary Coder Help', which contains coding guidelines for formula and breast milk. The central browser window shows the Westat Nutrition Research Group website, with a SurveyNet survey form for 'CAI Food Test' overlaid. The survey form includes fields for 'Food Name', 'Tea of Item', 'Tea of Level', 'Tea of Name', 'Tea of Level', 'Tea of Name', and 'Tea of Level'. On the right, a Lync chat room is visible with participants Amber Brown and Vijayan Narayana. Below the chat room, a calendar for May 2015 is shown, with dates 1, 2, and 3 highlighted. The bottom of the screen shows the taskbar with icons for SurveyNet, Excel, and Outlook.

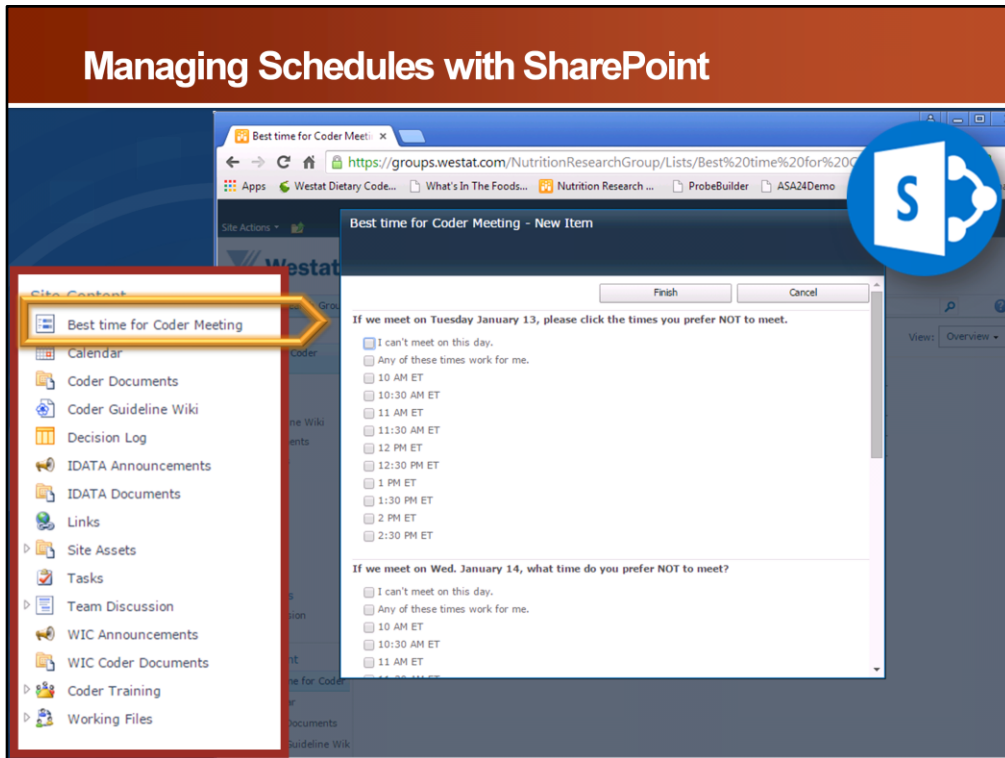
After training is completed, our goal is to replicate the in-person coding environment for our daily operations. We have had some struggles along the way, but we have been able to improve to where we are today. This screen shows an example of a Coder's desktop. On a typical day, a coder will be working in all of these programs: SurveyNet, Excel, SharePoint, Lync, and Outlook.

Organizing Daily Work with SharePoint



The information hub of our virtual coding center is our SharePoint Site. This website is only accessible on the Westat network in the virtual computer. Supervisors update this site for coders to access at their convenience. SharePoint also integrates with outlook calendar and sends email alerts. All of the information is searchable like a database. In general the coders keep it open while working because it allows for easy access to information to help them code.

Managing Schedules with SharePoint



We use many features of SharePoint to support our virtual coding center. This is a survey we use to coordinate coder meetings.

Managing Schedules with SharePoint and Outlook

Nutrition Research Group > Calendar > Calendar -
Use the Calendar list to keep informed of upcoming meetings, deadlines, and other important events.

December 28 2014 - January 03 2015

Site Content

- Best time for Coder Meeting
- Calendar
- Coder Documents
- Coder Guideline Wiki
- Decision Log
- IDATA Announcements
- IDATA Documents
- Links
- Site Assets
- Tasks
- Team Discussion
- WIC Announcements
- WIC Coder Documents
- Coder Training
- Working Files

29 M	30 T	31 W	1 T	2 F	3 S
Thea part time	Deirdre part time	No WIC Interviews	HOLIDAY	AMBER OUT	
Amber OUT		Viji out			
Lindsay	Viji Home	Lindsay		Lindsay	

Search Nutrition Rese...

Search Group - Calendar X

Tuesday	Wednesday	Thursday	Friday	Saturday
30	31	Jan 1, 15	2	3
time	2:00pm	No WIC Interviews	4:00pm	AMBER OUT
Deirdre part time	4:00pm	HOLIDAY	AMBER OUT	
	Viji out	New Year's Day; L		
	New Year's Eve; U			
6	7	8	9	10

We also learned very quickly that it is possible for a coder to log in, work, and log off without ever contacting us, so we use SharePoint and Outlook to manage schedules. For example, we post our schedules on a public SharePoint calendar that syncs with Microsoft Outlook. Since we do not see each other in a physical office this has become a good resource to know when to expect coders to be working so that Supervisors are always available to answer questions and provide support.

Sharing Information with SharePoint

The screenshot displays a SharePoint web browser interface. The browser's address bar shows the URL: <https://groups.westat.com/NutritionResearchGroup/Shared%20Documents>. The page title is "Nutrition Research Group > Coder Documents". Below the title, there is a search bar and a table of documents. A red box highlights the "Site Content" sidebar on the left, with a yellow arrow pointing to the "Coder Documents" link. A blue circular icon with a white 'S' and a network symbol is overlaid on the top right of the screenshot.

Type	Name	Modified	Modified By
Document	Chapter 1 Coder Reference Manual	8/5/2013 10:41 AM	Amber Brown
Document	Chapter 2 Coder Reference Manual	8/5/2013 10:41 AM	Amber Brown
Document	Chapter 4 Coder Reference Manual	8/5/2013 10:41 AM	Amber Brown
Document	Coder Reference Manual Appendix All Pages	12/3/2013 6:00 PM	Amber Brown
Document	How to Code Mixed Dishes and Mixtures	6/17/2014 10:39 AM	Amber Brown
Image	Pictures of Meat Cuts	12/17/2012 11:11 PM	Amber Brown
Document	Subcodes	9/11/2014 11:40 AM	Amber Brown
Image	Tip Resize the SurveyNet window	1/20/2014 9:42 AM	Amber Brown

We have a coder document library where we store coder manuals, study documents, and helpful information.

Supporting Coders with Excel

The screenshot shows the Microsoft Excel interface with the 'Dietary Coder Help' spreadsheet open. The 'Site Content' sidebar on the left is highlighted with a red border, and an orange arrow points to the 'Coder Documents' link. The spreadsheet itself is titled 'Dietary Coder Help' and includes several calculators:

- Mixture calculator:** Calculates the proportion of beverages or foods with the same units. It includes a table with columns for Name, Description, Amount, Unit, Fraction of mixture, and Amount to code.
- Formula dilution calculator:** Used to enter the number of scoops and water amount to calculate the formula water ratio per scoop.
- Amount reported:** A section for entering 'FormulaPrepForAmt' (scoops) and 'FormulaPrepWtrAmt' (fluid ounces).
- Volume conversion:** A section for converting units, such as fluid ounces to tablespoons.

Name	Description	Amount	Unit	Fraction of mixture	Amount to code
Main ingredient	formula	6	FO	77%	4.64
Addition 1 Amount	baby food	1.765625	FO	23%	1.36
Addition 2 Amount	baby juice	0	FO	0%	0.00
Addition 3 Amount	water	0	FO	0%	0.00
Ingredient Total		7.765625	FO	100%	6.00
Amount the child actually ate		6	FO		

For example, this Excel file, called Dietary Coder Help is in the library. Coders can open this access file which has conversion calculators they use while coding.

Sharing Information with SharePoint

Site Actions Browse Documents Library

Library Tools

Westat Nutrition Research Group > Coder Guideline Wiki
Use this library to create and store pages on this site.

Site Content

- Best time for Coder Meeting
- Calendar
- Coder Documents
- Coder Guideline Wiki**
- Decision Log
- IDATA Announcements
- IDATA Documents
- Links
- Site Assets
- Tasks
- Team Discussion
- WIC Announcements
- WIC Coder Documents
- Coder Training
- Working Files

Type	Name↓
	Yams vs Sweet Potatoes
	Wrap Guidelines
	Wheat bread
	Weight ounces of meat
	Volumes
	Vegetables cooked with meat
	Unknown Baby Foods
	Typos in Amounts
	Two food models for one food
	Turkey Sandwich

This is our Coder Wiki page that provides specific guidelines about coding certain foods or Survey Net tips.

Sharing Information with SharePoint

- Decision Log
 - Real time information sharing



The screenshot shows a SharePoint site titled "Nutrition Research Group" with a breadcrumb trail: "Nutrition Research Group > Decision Log > Short web". A "Site Content" sidebar on the left lists various site elements, with "Decision Log" highlighted by a yellow arrow. The main content area displays a table with two columns: "Issue" and "Resolution".

Issue	Resolution
Size of Almond M&M package	Code 1.31 WO
Trader Joe's Coffee Candy, Coffee Rio	Caramel, flavor other than chocolate 91703020
Payday candy bar, King Size	Code 3.4 ounce
M&M, King size package	Code 3.27 oz. for Peanut, Code 3.14 oz. for plain
Sour Patch Kids: King size	Code 3.5 ounces

This is our Decision Log, which is a coding decision database that is updated multiple times a day on SharePoint so coders can access new information immediately. Everyone gets a summary of the decisions that were made that is automatically emailed from SharePoint at the end of the day. We find this creates higher quality data and saves time during the cleaning effort.

Sharing Information with SharePoint

The screenshot shows a SharePoint web page titled "Links - All Links". The browser address bar displays the URL: <https://groups.westat.com/NutritionResearchGroup/Lists/Links/AllItems.aspx>. The page features a "List Tools" bar with "Items" and "List" options. On the left, a "Site Content" sidebar lists various site components, with "Links" highlighted by a yellow arrow. The main content area displays a table of links.

Type	Edit	URL	Notes
		What's In The Foods You Eat Search Tool, 2011-2012	Use this to
		Westat Dietary Coders Tracking System (WDCTS)	
		FNDDS - Food and Nutrient Database for Dietary Studies	
		NHANES Measuring Guides	
		Sandwich Guidelines	
		Measure Equivalents	
		Cooking Methods - Dry Heat	
		Coder Reference Manual - Chapter 4	
		ASA24 Demo	
		Probe Builder	
		Dietary Supplement Label Database	
		National Nutrient Database for Standard Reference	
		Salad Guidelines	

This is a list of links to websites we use frequently.

Sharing Information with SharePoint

The screenshot displays a SharePoint web browser interface. The browser's address bar shows the URL <https://groups.westat.com/NutritionResearchGroup/>. The page title is "Team Discussion - Subject". The main content area is titled "Nutrition Research Group > Team Discussion > Subject" and contains a list of discussion items. The items are: "Lindsay's Daily Updates", "Viji's Daily Updates", "Alimatu's Daily Updates", "Rubi's Daily Updates", and "WIC Daily Batch Report Example". Below the list is a link to "Add new discussion". On the left side, the "Site Content" navigation pane is visible, with "Team Discussion" highlighted by a yellow arrow. A blue SharePoint logo is positioned in the top right corner of the page.

This is our Team discussion page we use for daily updates.

Sharing Information with SharePoint

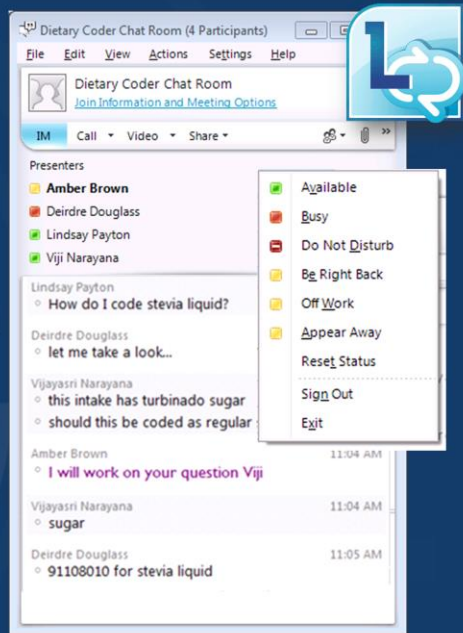
The screenshot shows a SharePoint site for 'Westat Coder Training' under the 'Nutrition Research Group'. The 'Site Content' sidebar on the left is highlighted with a red box, and a yellow arrow points to the 'Coder Training' item. The main content area includes sections for 'Links', 'Agenda', and 'Document Library'. A blue circular icon with a white 'S' and a network symbol is overlaid in the top right corner.

Type	Name	Modified By	Edit
Document	IDATA Coder Training Coding Test Sets	Amber Brown	[Edit]
Document	Test set 2	Amber Brown	[Edit]
Document	Test set 1	Amber Brown	[Edit]
Document	Contact information	Amber Brown	[Edit]
Document	TimeTrackingSheet	Amber Brown	[Edit]
Document	How to install RoboForm	Amber Brown	[Edit]
Document	roboform_quickstart	Amber Brown	[Edit]

This is the Coder Training page that separates information and documents just for trainees.

Providing Support with Lync

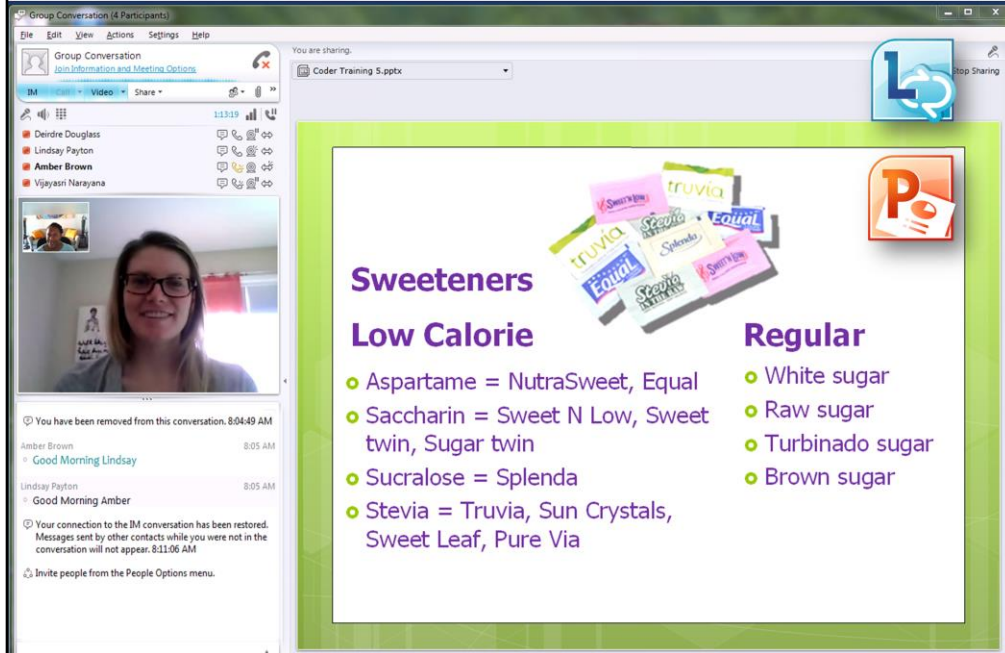
- Presence indicators
- Dietary Coder Chat Room
 - Daily contact
 - Connects team members
 - Discussions
 - Intended to mimic the on-site coder workroom
- Monthly meetings via Lync video calls



Now I will tell you more about how we use Lync to provide support. Our coders are required to log into Lync at the beginning of their workday. It has presence indicators to show their status. Lync has a number of features that track time, so we reference the time stamps regularly. For example, we allowed coders to work on weekends and evenings, so we could see the last time coders were online.

We do not want our coders to feel alone and disconnected from their colleagues, so we created a Dietary Coder Chat Room that we open every day. This chat room is only available on the Westat network, and it connects all of the coders with at least one supervisor as if we are working in the same room. We use it for problem solving and discussion. This is where coders initiate questions that everyone can see so everyone can benefit from the discussion. This also helps the supervisor manage multiple questions at the same time. We have a minimum of one meeting a month using Lync with web cams where we discuss work group issues and study issues.

Coder Meeting with Lync, Webcam and PowerPoint



The screenshot shows a Lync meeting window titled "Group Conversation (4 Participants)". The interface includes a menu bar (File, Edit, View, Actions, Settings, Help), a toolbar with "IM", "Voice", "Video", and "Share" options, and a list of participants: Deirdre Douglass, Lindsay Payton, Amber Brown, and Vijayash Narayana. A video feed shows a woman with glasses. The main area displays a PowerPoint slide titled "Sweeteners" with the following content:

- Sweeteners**
- Low Calorie**
 - Aspartame = NutraSweet, Equal
 - Saccharin = Sweet N Low, Sweet twin, Sugar twin
 - Sucralose = Splenda
 - Stevia = Truvia, Sun Crystals, Sweet Leaf, Pure Via
- Regular**
 - White sugar
 - Raw sugar
 - Turbinado sugar
 - Brown sugar

The slide also features images of various sweetener packets (Truvia, Equal, Splenda, Sweet Leaf) and a PowerPoint icon.

This is an example of a coder meeting using Lync with the webcam and showing a PowerPoint presentation. In the course of a normal day, we use a number of Microsoft programs, in addition to the programs we use for our daily coding operations. As a result, our coders report having adequate support to complete their work.

Virtual Coding Center Production Since 2012

23,510 intakes coded in 3 years with an average of 2 coders per study.

Study (Agency)	Number of Coders	Number of Intakes Coded	Study Duration	Year
Infant Toddler Feeding Practices Study (USDA FNS)	2	18,565	17 months	2013 to present
Interactive Diet and Activity Tracking in AARP (NCI)	4	2,160	5 months	2014
Food Reporting Comparison Study (NCI)	2	1,020	7 months	2012
Food and Eating Assessment Study (NCI)	2	42	2 months	2012
Healthy Incentives Pilot (USDA FNS)	2	1,723	5 months	2012

Since 2012, we have been able to complete 4 studies and we have one in progress. We have met our production goals over the last 3 years and we have completed over 23,000 intakes with an average of 2 coders. Clearly, the virtual coding center has expanded our capabilities. We have found it to be cost efficient and highly productive. As technology continues to evolve, so do our practices. We consistently search for technology to facilitate excellent communication and the optimal work environment for our virtual coding center team. This is truly the future at Westat.



Thank you for listening.

Co-Authors left to right: Amber Brown, Deirdre Douglass, Susie McNutt, and Thea Zimmerman.