RESTRAINT REDUCTION: QUALITY ASSURANCE PROCESS PROVES NO INCREASE IN FALLS OR INJURIES

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Introduction

After initiating a quality improvement (QI) process using a software package, a facility with a high rate of restraint use established a quality improvement team with the goal to reduce restraints. They were concerned that the number of falls and / or injuries would increase as a result of restraint reduction.

Methods

Due to the way we established the QI process we were able to identify individual patients on individual units and by type of restraint. The facility's restraint reduction committee began working with individual units in progression over the course of multiple months. During this time period we carefully monitored the above issues, correlating the number of falls and type of injury on each unit. We statistically analyzed number of restraints, falls and injuries due to these falls.

Results

No correlation between the reduction of restraints, number of falls or injuries from falls was found. A reduction in restraints did not increase the number of injuries from falls. (Table 1) (Graph 1)

We reduced the percentage of restraints from 19.9% in January of 2005 to 5.9% in December of 2006.

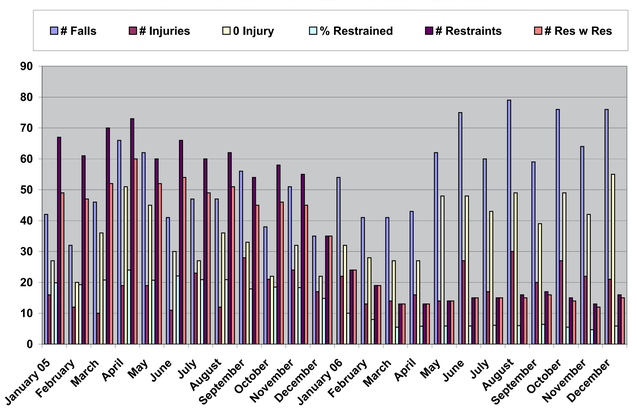
Conclusion

Through a QI process we demonstrated that in this facility restraint reduction did not increase the injury rate from falls. (Graph 2) Utilizing a QI program including a statistical package within the skilled nursing facility (SNF) was a vital component of our QI process. Routine data collection in the QI process included the data points necessary for this comprehensive study. Our findings were in agreement with prior literature stating that decreasing restraints does not increase injuries from falls. Broader conclusions included that the quality assurance / quality improvement process is essential in each facility and that facilities are able to use results of one QI project to undertake other such projects.

Table 1
Facility Total
Comparison of Falls / Injuries / Restraints

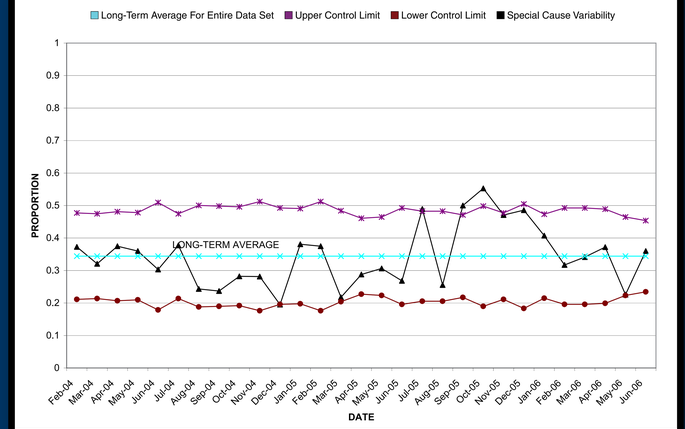
	Total # Falls	Total # Injuries from Falls	# Falls with No Injury	% of Residents with Restraints	Total Number of Restraints	Number of Residents with Restraints
	# Falls	**# Injuries**	**0 Injury**	**% Restrained**	**# Restraints**	**# Res w Res**
January 05	42	16	27	19.9	67	49
February	32	12	20	19.3	61	47
March	46	10	36	20.8	70	52
April	66	19	51	24	73	60
May	62	19	45	20.7	60	52
June	41	11	30	22.1	66	54
July	47	23	27	20.9	60	49
August	47	12	36	20.9	62	51
September	56	28	33	17.9	54	45
October	38	21	22	18.5	58	46
November	51	24	32	18.3	55	45
December	35	17	22	14.8	35	35
January 06	54	22	32	10	24	24
February	41	13	28	8	19	19
March	41	14	27	5.5	13	13
April	43	16	27	5.8	13	13
May	62	14	48	5.9	14	14
June	75	27	48	5.9	15	15
July	60	17	43	6.1	15	15
August	79	30	49	6	16	15
September	59	20	39	6.4	17	16
October	76	27	49	5.5	15	14
November	64	22	42	4.7	13	12
December	76	21	55	5.9	16	15

GRAPH 1: COMPARISON FALLS / INJURIES / RESTRAINTS



The turquoise line represents the long-term average for the entire data set. The magenta starred line is the upper control limit; the brown dotted line is the lower control limit. The points on the black line above and below these two lines statistically represent special cause variability.

GRAPH 2: P-CHART: PROPORTION OF FALLS WITH INJURY



REDEFINING RESTRAINTS IN THE SKILLED NURSING FACILITY: WHEN INJURY PREVENTION DEVICES ARE REALLY 'RESTRAINTFUL'

Authors: Scott Bolhack, MD, CMD; Barbara Viggiano, RN; Rebecca Torres; Shirley Grant, LPN

Introduction

The Centers for Medicare & Medicaid Services (CMS) State Operations Manual defines physical restraints as: "any manual method or physical or mechanical device, material, or equipment attached or adjacent to the resident's body that the individual cannot remove easily which restricts freedom of movement or normal access to one's body."

Many types of devices are utilized in skilled nursing facilities (SNFs) for injury prevention (IP). Some of these are counted as restraints on the Minimum Data Set (MDS) and become triggers for quality indicator (QI) # 11.1 "Residents who were physically restrained". The MDS restraint categories are: "Trunk restraint", "Limb restraint", and "Chair prevents rising". If using only QI reports as restraint indicators, facility leaders can be deceived about the extent of 'restraintful' devices being used in their facility. Examples are: the use of a low bed in which the resident is unable to get out of bed without assistance, but could independently enter and exit a bed of normal height, and the use of ½ , ¾ or full side rails "for mobility". If the intent of the rail is mobility [not safety], a simple grab bar would suffice for most residents. These IP devices are not captured in QI # 11.1.

Method

To help facilities refocus on a broader concept of potential restraints, we have encouraged them to monitor all IP devices. (Exhibit 1) Using June 2007 data for 8 facilities, we compared the prevalence of IP devices for each facility to their January through June 07 QI # 11.1 and to the same 6 month state and national averages. (Exhibit 2)

Exhibit 1: Monthly Injury Prevention Monitoring QA Report

_____ (Facility)

Unit: _____

Month / Year: _____

"Physical restraints are defined as any manual method or physical or mechanical device, material or equipment attached or adjacent to the resident's body that the individual cannot remove easily which restricts freedom of movement or normal access to one's body." MDS 2.0 User's Manual

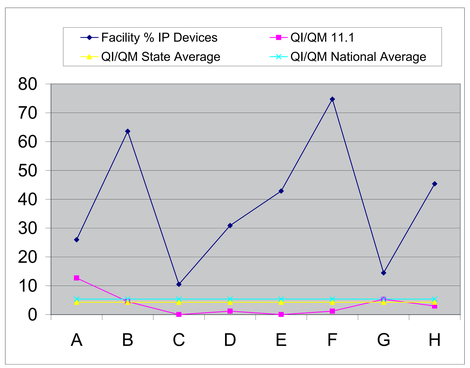
If a Resident is utilizing a device that is listed but the device does NOT meet the definition of a "restraint" as listed on the left - Please include the device in the report and circle that entry.

Resident Name	Bed / Chair Personal Alarm	Transfer Bar	1/2 or Partial Side Rails	Full or 3/4 Side Rails	Lap Buddy	Mert /Walker	Wheelchair Seat Belt: Self Releasing	Wheelchair Seat Belt: Non Releasing	Cert-Chair	Low Bed (potentially Restraintful)	Other Injury Prevention Device	Comments (please indicate if "other" res
Total												

TLC Medical Consulting Group, LLC. © 2002 2IP2 mlPsF Revised 10/2004, 10/2005, 10/9/2006, 12/01/06, 1/2/08 (Updated 2/12/2008)

Exhibit 2: Comparison: Injury Prevention Devices / Restraints

Facility Code	June 2007 % Residents with Injury Prevention Devices **Facility % IP Devices**	6 Mo. QM/QI Observed % Residents with Restraints **QI/QM 11.1**	6 Mo QM/QI State Average % Residents with Restraints **QI/QM State Average**	6 Mo QM/QI National Average % Residents with Restraints **QI/QM National Average**
A	25.97	12.7	4.3	5.4
B	63.6	4.5	4.3	5.4
C	10.53	0	4.3	5.4
D	30.88	1.2	4.3	5.4
E	42.86	0	4.3	5.4
F	74.71	1.2	4.3	5.4
G	14.49	5.3	4.3	5.4
H	45.35	3	4.3	5.4



Results

The number of restraints reported in the facility QIs is significantly below the total use of potentially 'restraintful' IP devices in a typical facility. For the 8 facilities included in our project between 10.5% and 74.7% of residents utilized one or more IP devices. Comparatively, their facility specific QI reports showed between 0 to 12.7% of residents were physically restrained, state average was 4.3% of residents, and national average 5.4%.

Additional comparisons were made with the percent of residents who were reported to be physically restrained by:

- Online Survey, Certification and Reporting (OSCAR)
  State average 7.1% and National average 6.2% (June 2007)
- CMS Nursing Home Quality Initiative Quality Measures (NHQI)
  State average 5% and National average 6% (Quarter 4 of 2006)

Conclusion

Remember restraints counted on the QIs grossly underestimate the extent of IP devices found in the facility. By monitoring all devices used for IP, we are able to focus attention to how the facility views and uses devices for resident safety. During monthly quality assurance meetings, we review current data and capitalize on opportunities for educating the facility leadership on these essential issues and their differences. The data also provides an opportunity to address appropriate care planning and education of residents / families to the risks and benefits of the intended safety devices.

MINIMIZING NUTRITIONAL PRODUCTS IN SNFs: COST-EFFECTIVE NUTRITIONAL SUPPLEMENTATION FOR NURSING HOME RESIDENTS

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Introduction

Most skilled nursing facilities (SNFs) stock a multitude of nutritional supplements without any understanding of patient needs or costs to the facility. One facility evaluated their current nutritional supplements to determine: cost per serving, nutritional characteristics of the products, and a cost-effective approach to supplementation. Comparisons were made to determine if we could minimize the formulary, maximize patient benefit, decrease nursing administration time, better utilize storage space and create a better understanding of prescribed products.

Although liberalization of diets in (SNFs) is the current trend, providers still offer supplements for residents whose needs are not quite being met through usual means; and it is still believed that state surveyors look for these types of interventions as proof that the facility and provider are making every attempt to correct deficiencies despite lack of proof that they actually affect desired outcomes.

Methods

An analysis in one nursing home revealed that 13 products were stocked at the facility. The supplements could be categorized into 5 major categories:

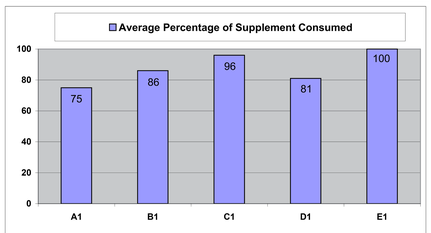
A = diabetic supplements;
B = high caloric density supplements (1.5 – 2 Kcal / cc);
C = renal specialty supplements;
D = usual density supplements (1 Kcal / cc); and
E = protein powder supplements.

Each of the 13 supplements was analyzed as to its cost per usual serving, administration cost, and nutritional characteristics. During the month of June 2007, 51 residents were monitored daily for supplement consumption and then the average consumption per product was calculated.

Percent of Supplements Consumed x 30 days (June 2007)

Resident Sample	A1	B1	C1	D1	E1
1	89	79	93	57	100
2	100	85	98	82	100
3	76	100		75	100
4	54	60		94	100
5	81	83		97	
6	41	74		69	
7	73	94		92	
8	68	78		100	
9	79	87		87	
10	61	97		53	
11	84	100		77	
12	97	81		81	
13	70	100		94	
14	65	100		71	
15	85	79		89	

	A1	*B1*	*C1*	*D1*	*E1*
Average Percentage of Supplement Consumed	75	86	96	81	100



Dietary Supplement Grid By Serving
June 2007

	A1	A2	B1	B2	B3	C1	C2	C3	D1	D2	D3	E1	E2
Average % Consumed per serving	75		86			96			81			100	
K Cal per cc	1.06	1	2	1.5	1.5	2	2	2	1	1.06	0.7	115 per OZ	1.06
Grams of protein per ounce	1.8	1.3	2.6	2.3	2	2.3	0.9	2.2	1.3	1.1	1	28.75	4.6
Usual Serving Size	237 cc	240 cc	90 cc	240 cc	240 cc	240 cc	240 cc	240 cc	240 cc	237 cc	240 cc	7 grams	9.5 grams
K Cal per serving	240	224	177	360	360	475	475	475	240	250	170	28	250
Average K Cals consumed	180		152.2			456			194.4			28	
Grams of protein per serving	14.4	10.4	7.8	18.4	16	18.4	7.2	17.6	10.4	8.8	8	7	9.5
Average Gm protein consumed	10.8		6.71			17.66			8.42			7	
supplement cost per serving	0.89	1.77	0.54	1.37	1.46	1.9	2.08	2.28	0.59	0.82	0.82	0.26	0.51
administration cost per serving	0.33	0.33	1	33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	1	1
Total cost per serving	1.22	2.1	1.54	1.7	1.79	2.23	2.41	2.61	0.92	1.15	1.15	1.26	1.51

Results

Only 5 supplements were in use during the entire 30 day study. The average percent of supplement consumed varied by category from 75 - 100%. (Exhibit 1) Administration of the supplements varied from 1 - 3 minutes depending upon the amount of time required to prepare the product. The cost per serving for each supplement ranged from $.92 to $2.61. (Exhibit 2) There were differences in the grams of protein and Kcal per serving depending on the category of product described above.

Conclusion

The approach to supplementation in SNFs can be improved by this type of simple analysis. The study facility made several changes based on the data:

(1) 8 products were currently being stored but not used and these products could be replaced by less expensive ones with equal nutritional value, consequently they were removed as choices;

(2) within each category, a single product was chosen that was most cost-effective and easy to administer;

(3) an educational program was then created to reeducate the staff and providers on the unique nutritional strength of each product selected; and

(4) a formulary was created to meet specific nutritional goals while remaining cost-effective for the facility.