



Teaching Caregivers to Administer Eye Drops, Transdermal Patches, and Suppositories

Nurses can help alleviate the stress that caregivers may have when managing these medications.

This article is the third in a series, *Supporting Family Caregivers: No Longer Home Alone*, published in collaboration with the AARP Public Policy Institute. Results of focus groups conducted as part of the AARP Public Policy Institute's No Longer Home Alone video project supported evidence that family caregivers aren't being given the information they need to manage the complex care regimens of their family members. This series of articles and accompanying videos aims to help nurses provide caregivers with the tools they need to manage their family member's medications. Each article explains the principles nurses should consider and reinforce with caregivers and is accompanied by a video for the caregiver to watch. The third video can be accessed at <http://links.lww.com/AJN/A76>.

Every day more than 10,000 U.S. citizens turn 65 years old.¹ As the population ages, families assume more care responsibilities for aging relatives. Historically, family caregiving was confined to assistance with activities of daily living, such as meal preparation and personal care. However, as medical care becomes more sophisticated—and care systems more strained—many family caregivers are finding themselves responsible for increasingly complex tasks.²

For many family caregivers, providing assistance to an aging family member is a rewarding experience, but anxiety about how to perform sophisticated caregiving tasks can be taxing. In this article, we outline techniques nurses can use to teach caregivers how to administer medications that are not given orally or intravenously. This instruction in managing the administration of eye drops, transdermal patches, and suppository medications can help to alleviate some of the stress that can accompany caregiving.

BACKGROUND AND EVIDENCE

In 2013, about 40 million Americans cared for an adult with limitations in daily activities, providing an estimated 37 billion hours of care (valued at \$470 billion).³ Family caregivers are a critical component of the U.S. health care system, but many feel unprepared or unsupported in their work.³

A recent study by Reinhard and colleagues of 1,677 family caregivers found that 46% provided

care that involved managing complex medication regimens, wound care, and incontinence care.² Yet, despite assuming these responsibilities, many caregivers described feeling unprepared. For example, half provided five or more medications to their family member per day, but only 53% of these received training in medication administration and management. Understandably, this group reported wanting more training, more help, and fewer medications to manage. Of the family caregivers who provided medical and nursing tasks, 30% administered medications that were not given orally.²

CONSIDERATIONS WHEN TEACHING ADMINISTRATION OF EYE DROPS, TRANSDERMAL PATCHES, AND RECTAL SUPPOSITORIES

Nurses need evidence-based recommendations for teaching family caregivers how to administer

How to Use This Series

- Read the article, so you understand how best to help family caregivers manage medications.
- Encourage the family caregiver to watch the video at <http://links.lww.com/AJN/A76>.
- Ask the family caregiver if she or he has any questions.



A family caregiver (left) and her sister discuss their mother's medications. Photos courtesy of the AARP Public Policy Institute.

medications that are delivered via eye drops, transdermal patches, and rectal suppositories. We provide this information in the context of the “just culture” movement in health care, which is supported by the American Nurses Association.⁴ (For a description of the just culture concept, see the first article in this series, “Managing Complex Medication Regimens,” November 2016.)

The below recommendations are designed to help nurses work with family caregivers to develop structured medication routines that minimize the likelihood that errors will occur, and also to help family caregiv-

ers recognize and manage errors when they do occur.⁵ Family caregivers need to be told they will not be blamed for errors and will be supported while any concerns are assessed through open, respectful communication. This approach facilitates learning by providing realistic expectations. It also nurtures psychological safety, in which caregivers feel comfortable asking questions, expressing their thoughts, and discussing mistakes.⁶

Family caregiver preparation and education.

Caregivers may be anxious or embarrassed when administering eye drops, transdermal patches, or rectal suppositories for the first time. Tasks that may seem simple to professional nurses can be overwhelming to family caregivers. Nurses can ease anxiety by establishing rapport with family caregivers and teaching in a calm and confident manner the skills they'll need. Nurses can also acknowledge that learning a new skill can cause uncomfortable feelings. It may help family caregivers to recognize that they often already have coping and management abilities—perhaps from managing a team at work or a household that includes small children—that can help them learn these new skills.⁷

Teaching sessions should begin with the nurse assessing the family caregiver's baseline knowledge of

Basic First Steps for Medication Administration

1. Check medication labels to make sure the correct drug and dose are being used.
2. Have written instructions set up, so they can be easily read during the procedure.
3. Identify a clutter-free work space and set out supplies.
4. Wash hands.
5. Tell the care recipient what you are doing and why.

a technique. Initially, family caregivers should discuss or demonstrate their skills, so the nurse can provide constructive but supportive feedback. Following this, family caregivers can be instructed in (or reminded of) the basic steps of medication administration, which are the same whether family caregivers are administering eye drops, applying patches, or inserting rectal suppositories (for more information, see *Basic First Steps for Medication Administration*).

During the training sessions, nurses may want to encourage family caregivers to write out instructions or record the nurse's technique on their mobile phone. In addition, nurses should give family caregivers written or video resources, as well as a list of the names and phone numbers of people they can call if they need assistance. It can be especially helpful for nurses to acknowledge to family caregivers that they are providing a worthwhile service and thank them for taking the time to learn the correct technique.

Finally, family caregivers need to be reminded that everyone makes mistakes. It's important to let them know they will not be blamed for making mistakes, and efforts will be made to help them be successful. Encourage caregivers to notify their family member's health care professional if doses are skipped or missed on a consistent basis. As per the just culture philosophy, nurses should reassure family caregivers that this type of mistake commonly occurs, and sharing this information helps the health care team to ensure the patient is receiving appropriate care.⁴

Eye drops. Much of the literature on eye drop administration is focused on how people with



A family caregiver shows her sister how to administer their mother's eye drops.

glaucoma—not their caregivers—use the drops. Glaucoma is the leading cause of blindness, affecting 60 million people around the world.⁸ Because few articles address how to teach caregivers to administer eye drops, lessons can be extrapolated from the glaucoma patient literature.

The primary lesson from this literature is that many patients are not able to administer eye drops correctly, and expert coaching is often needed. In a study evaluating the eye drop administration technique of 85 patients, Tatham and colleagues found that 54.1% had poor technique and 81.2% had not been taught how to instill eye drops.⁹ People with arthritis and vision impairment tend to have more trouble accurately

Steps for Eye Drop Administration^{9, 11}

1. Follow *Basic First Steps for Medication Administration*.
2. Help the care recipient into a comfortable, supported position, either seated or lying down. Use a reclining chair or pillows to support the head and neck.
3. Inspect the eyes—look for new irritation or discharge. If present, stop and call the pharmacist or nurse for further guidance. Remove the cap from the eye drop bottle and place on a clean surface with the inside of the cap facing up or sideways.
4. To steady your hand, rest it on the care recipient's forehead. Hold the eye drop medication with this hand, using the index finger and thumb, about one inch above the conjunctival sac.
5. Place the thumb of the other hand on the lower lid and gently press down toward the bony orbit to expose the conjunctival sac. Do not touch the eye directly.
6. Ask the care recipient to look up toward the ceiling.
7. Instill the correct number of drops into the conjunctival sac, not directly onto the eyeball. If the drops do not go into the eye, repeat the procedure. Take extra care to administer the correct number of drops and avoid touching the eye with the tip of the eye drop bottle.
8. With a tissue, gently apply pressure to the care recipient's nasolacrimal duct (inner eye and nose) for 30 seconds.
9. Give the care recipient a tissue to dab around the eye and throw this in the garbage after use.
10. Replace cap on the eye drop bottle.



Steps for Transdermal Patch Application^{12, 14, 16}

1. Follow *Basic First Steps for Medication Administration*.
2. Don gloves to avoid medication exposure.
3. Remove the old patch from the skin and wash the area with gentle soap and water.
4. Fold the old patch in half and safely dispose of it, so children and pets cannot inadvertently touch or play with it.
5. Remove the new patch from its packaging. To avoid accidentally puncturing the patch, do not use scissors to open the packaging. Label the patch with the date and time of application (this can also be done after the patch is placed). Remove the protective backing from the new patch. Avoid touching the adhesive area.
6. Identify the new patch site. Inspect for signs of impaired skin integrity. Avoid hairy parts of the body, or carefully trim hair with scissors, if necessary. Avoid shaving immediately prior to applying the patch to avoid skin irritation.
7. Firmly attach the adhesive side of the patch to the skin. Make sure all edges are attached, then gently apply pressure over the patch for 30 seconds.
8. If the patch has a second, outer cover, apply this over the patch per package instructions.
9. Use a pen to note on the patch the time and date it was applied. Encourage caregivers to identify a system, such as using a calendar, to note the location of a new patch and the date it was placed.
10. If the patch falls off, attempt to reattach it. If this does not work, apply a new patch.

administering the correct dose of eye drops.⁸ These factors should be considered when teaching family caregivers, who may have their own physical limitations.

Like other medications, eye drops have adverse effects and risks, ranging from eye irritation to cardiac arrhythmias.¹⁰ A pharmacist can be a trusted source of information and guidance for family caregivers. The recommendations in *Steps for Eye Drop Administration*^{9, 11} can be used to teach caregivers how to properly administer eye drops.

Transdermal patches. Transdermal patches have been in use since the late 1970s. Used on the skin, transdermal patches may consist of several layers: an adhesive layer that attaches to the skin, a membrane that controls the rate of medication administration, the layer containing the active medication, and the impermeable backing (the visible layer). There are two main forms of transdermal patches: reservoir and matrix. In the former, the medication is contained in a “reservoir” between the backing and the layer that regulates the dose. Matrix patches typically contain medication within the adhesive layer.^{12, 13}

Transdermal patches can be advantageous as a route of medication administration because they obviate the need for oral function and bypass first-pass liver metabolism, allowing for lower medication doses. Although it may take several days for the medication to reach a steady concentration when delivered via this route, regular application of a transdermal patch results in consistent blood levels of the medication. Another advantage of transdermal patches is that administration frequency may be less than with

oral medications. Some patches can be worn for up to a week. This can be advantageous for caregivers who would prefer to administer fewer medications.¹²

Transdermal patches carry some risks, most notably for inadvertent use and overdose. The Food and Drug Administration (FDA) warns that infants held near an adult wearing a partially detached fentanyl patch are at risk for narcotic exposure.¹⁴ Additionally, young children (including grandchildren and other visiting children) may find discarded patches appealing because they look like stickers. Fentanyl patches retain 50% of their active medication even after the conclusion of the 72-hour adherence period, placing young children at risk for exposure.¹⁴ The FDA has reported 32 accidental exposures and 12 deaths since 1997 owing to opioid exposure from fentanyl patches.¹⁴ To reduce the risk of inadvertent exposure, family caregivers should be instructed to make sure the fentanyl patch doesn't have any exposed portions. After use, the FDA recommends flushing used fentanyl patches down the toilet.¹⁴

Care should be taken to instruct the family caregiver in the appropriate disposal technique for the prescribed transdermal patch. For guidance on which medications should be flushed, see <http://bit.ly/1f0nGhX>.

Care recipients are at risk for overdose if patches are not removed when a new patch is applied. Some patches are difficult to see and can be left on the body after application of a new patch. In one case study, after an elderly man with dementia died, he was found to have six rivastigmine transdermal patches on his body, which were determined to have caused his death.¹⁵

The absorption rates of transdermal medications can be affected by heating pads or sun exposure. Advise family caregivers and care recipients to avoid exposing the patch to direct heat, such as a heating pad, warm compress, or extended periods of direct sunlight. In addition, some patches contain metal, which can cause burns when a patient undergoes magnetic resonance imaging (MRI). If MRI is planned, encourage family caregivers to verify with the pharmacist and MRI staff whether the patch is safe to wear during the procedure.¹²

Patch alteration—for example, cutting a patch in half to reduce the dose—can affect the dosing mechanism and, thus, the amount of medication the patient receives. Caregivers should never cut or trim patches without first consulting the pharmacist. There is no clear evidence that writing on the patches affects the dose.^{12,13} Another option would be to write the date on medical tape and place this on the patch.

Transdermal patches can also cause skin irritation. Several strategies can help to limit this adverse effect.¹⁶ First, nurses should instruct family caregivers to rotate the patch site on each application. Second, if possible, caregivers should apply patches to the upper back, chest, or arms, where there is a decreased risk of skin irritation. Third, caregivers should be directed to use mild soap when assisting the care recipient with bathing. Lipid-rich moisturizers should be used for skin care, but the family caregiver should not use the

moisturizer prior to applying the patch. Finally, patches should only be applied to intact skin. The risk of skin irritation increases if patches are used on an area that has recently been shaved. If skin irritation occurs, family caregivers should discuss this with the care recipient's health care provider.

Caregivers need to be taught how to avoid untoward outcomes associated with transdermal patch use. They should be told to consult the pharmacist, nurse, or health care provider to identify where on the body transdermal patches can be applied, how often they should be changed, and if they can be altered. Discarded transdermal patches should be kept away from children, those with cognitive impairment, and pets. Opioid patches should be secured in a locked container. Use the information in *Steps for Transdermal Patch Application*^{12,14,16} to instruct caregivers on applying a patch.

Rectal suppositories. Rectal suppositories are used when oral medications cannot be used or when a direct effect on rectal tissue is desired. Suppositories are helpful when swallowing difficulties preclude safe use of oral medication or when a patient has severe nausea and cannot retain oral medication. A rectal suppository is a torpedo-shaped, semi-solid form of medication inserted into the rectum. Suppositories can have a local effect (for example, a laxative) or a systemic effect (for example, an anti-pyretic). After insertion, they melt with exposure to

Steps for Rectal Suppository Insertion^{11, 18, 19}

1. Follow *Basic First Steps for Medication Administration*.
2. Gather supplies: disposable gloves, water-soluble lubricant, tissues, disposable bed padding, and a garbage bag.
3. Review the patient medication leaflet to identify the manufacturer's instructions on which end of the suppository (pointed or blunt) should be inserted first.
4. Don gloves.
5. Assist the care recipient in removing undergarments and in moving into a side-lying position, with the upper leg flexed. Use pillows to support limbs and joints if needed for comfort. Cover exposed skin with sheets and blankets, leaving only the buttocks exposed. Place protective padding on the bed and under the buttocks.
6. Remove the suppository from the wrapper and place about a teaspoon of water-soluble lubricant on the tip of the suppository.
7. Lightly lubricate the gloved index finger of your dominant hand.
8. Ask the care recipient to take slow, deep breaths and try to relax the anal sphincter. If relaxation is difficult, instruct the care recipient to slowly exhale while the suppository is being inserted.
9. Retract the care recipient's upper buttocks with your nondominant hand. Identify the anus.
10. With your dominant hand, gently insert the suppository about three to four inches into the anus. Use the lubricated index finger to slide the suppository into place.
11. Withdraw your finger, wipe away any excess lubricant from around the anus, and remove the gloves (folding them inside out to prevent contamination). Discard the gloves and tissue in the garbage bag.
12. Check on the care recipient to make sure she or he is comfortable.



body heat, and the medication acts locally and/or is absorbed via the rectal tissue.

Despite the fact that this route of medication administration has been used for about 100 years, there is still debate about which end of the suppository (the pointed tip or the blunt end) should be inserted first. Although common sense dictates the pointed tip (apex), Abd-el-Maeboud and colleagues found higher retention rates and lower expulsion rates when suppositories were inserted blunt end (base) first.¹⁷ In a review of this issue, Bradshaw and Price advised following the instructions on the patient information leaflet that comes with the prescription.¹⁸ They noted that if the suppository is inserted in an alternative manner, the manufacturer of the suppository may not assume responsibility for any untoward effects.

Nurses can teach family caregivers the steps for rectal suppository insertion using the information in *Steps for Rectal Suppository Insertion*.^{11, 18, 19}

VIDEO CASE EXAMPLE

Go to <http://links.lww.com/AJN/A76> to watch a video in which Angie, the main caregiver for her mother, who has had a stroke, demonstrates caregiving to her younger sister. Angie is planning a much-needed vacation, and her sister, Imani, has offered to care for their mother while Angie is away. However, Imani has never before administered eye drops, changed transdermal patches, or inserted a rectal suppository.

In the video, Angie shows her sister how to administer eye drops and change their mother's pain patch. Viewers can see that Angie places the patch in the garbage. Although the FDA recommends flushing used fentanyl patches down the toilet,¹⁴ the patch used by Angie's mother contains medication that does not have the risk potential of fentanyl, so it is safe to dispose of it in the trash.

When Angie starts to describe how Imani should insert the suppository, her sister balks. She is embarrassed and anxious about this task. Angie gently reminds Imani that she really needs a break from caregiving and encourages her sister to learn this task. Angie patiently describes the steps and shows Imani how their mother cooperates in this process. She then coaches Imani through the insertion of the suppository, reminding her that she wasn't used to doing this at first either and also needed practice. This gives Imani a sense of competence and control, making the experience less upsetting and uncomfortable for her. ▼

Allison Lindauer is an assistant professor at Oregon Health and Science University, Portland. Kathryn Sexson is a family NP at Denali Family Healthcare and an assistant professor in the School of Nursing, University of Alaska, Anchorage. Theresa A.

Harvath is the associate dean for academics in the Betty Irene Moore School of Nursing, University of California, Davis, in Sacramento. The authors would like to acknowledge Susan C. Reinhard and Heather M. Young, leaders of the No Longer Home Alone video project, and the contributions of Carol Levine, who conducted focus groups with family caregivers regarding the challenges of medication management. Contact author: Allison Lindauer, lindauer@ohsu.edu. The authors have disclosed no potential conflicts of interest, financial or otherwise.

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