

### **Meducation**<sup>®</sup>

Medication Instructions That Any Patient Can Understand

Lori McLean, CEO Polyglot July 2016 FHIR Roundtable

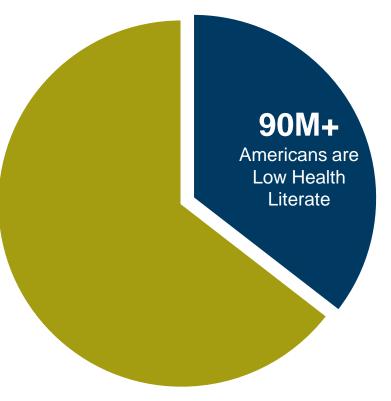
# What is Low Health Literacy?

Health Literacy is the ability to:

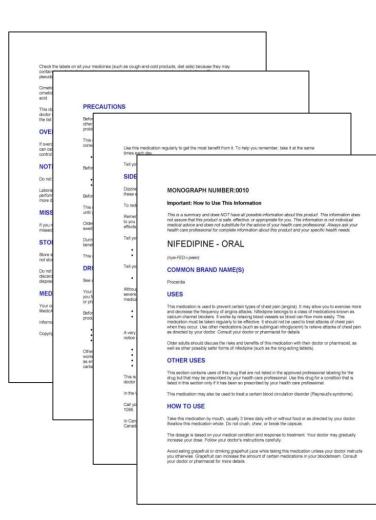
- 1) Gather
- 2) Understand
- 3) Act

Low Health Literacy is a stronger predictor of health than age, income, employment status, and race.





# **Challenges for Low Health Literacy**



FLUTICASONE/SALMETEROL DISK INHALER - ORAL - (floo-TIK-a-sone/sal-MEE-ter-ol) COMMOSI BRAND NAMEISI Advair Diskus

#### WARNING:

Rarely, senious (sometimes fatal) asthma-related breathing problems may occur in people with asthma who are treated with drugs such as salmeteral (long-acting beta agonists). In people with asthma, this product should only be used when one long-term medication (such as inheled controcateroids) does not control breathing problems. Before using this medication, it is important to learn how to use it properly. Discuss the risks and benefits of this medication with your doctor. USES:

Usca. This product is used to control and prevent symptoms (wheezing and shortness of breath) coused by asthma or engoing lung disease (chronic obstructive pulmónary disease COPO, which includes chronic bunchilis and enginysema). It cousines 2 medicatios: fluicasone and samiretion. Fluicasone belongs to a class of diouge shown as controlatenoids. Il works by reducing the irritation and seeding of the airways. Samireted belongs to the class of dougs hown as classing advects by opening airways in the lines to naive benefing exame. Control movies of a dispersion and a dispositions of breathing publics can decrease time last i nom work or school. This medication must be used regularly to be effective. It does not work immediately and should not be used to relieve sudden shortness of breath are sthma attack. If sudden breathing prohemo occur, use your quick-relief halfs tacks advectione, i also called salbutamoli is sumechanicas prescribed. HOW TO USE:

HOW TO USE: Read the Melicialian Guide provided by your pharmacist before you start using this medication and each time you get a relill. Read the petient instructions for directions on how to use this inheler properly. If you have any questions, ack your doctor or pharmacist, blas this device in a level, flat position, hahe this medication by much bas directed by your doctor, usably twice daily in the meming and versing. If you have any questions, ack your doctor or pharmacist, blas this device in a normal. Do not estable into the device, Do not take the halker any error was that started. If the device is not take the halker and reventing the constraint of the device. Do not take the halker and reventing the constraint of the device. Do not take the halker and reventing the constraint of the device. Do not take the halker and reventing the constraint of the device is not take the halker and reventing the constraint of the device. Do not take the halker and reventing the constraint of the device. Do not take the halker and reventing the constraint of the device. Do not take the halker and reventing the constraint of the device of the device. Do not take the halker and reventing the device the start of the device of the device of the device. Do not take the halker and reventing the device of the device. Do not take the halker and reventing the device of mouth with water after seach use of this medication to help prevent initiation and yeast intercions (https://withps://wi worsening cough or 'shortness of breath, wheezing, increased sputum, worsening peak flow meter readings, waking up at night with trouble breathing. If you use your quick relief inhaler more often (more than 2 days a week), or if your quick relief inhaler does not seem to be working well. Learn when you can treat sudden breathing problems by yourself and when you must get medical help right

#### SIDE EFFECTS:

SIDE EFFECTS: Hoarsames, throat initiation, headache, or stomach upset may occur. If any of these effects persist or worsen, tell your doctor promptly. Remember that your doctor has prescribed this medication because be or she has judged that the barefit to you is greater than the risk of side effects. Many people using this medication do not have serious side effects. Inforquently, this medication may cause avera guides worsening of breating problem starting memory and your doctor and of the serious side effects. Inforquently, this medication may cause right a way if any of these unlikely but assiss and effects occur: white patches an tonguelin mouth, signs of infection tongs, shaking fittement). Each work and the medication do the pressions are transit. mental there are but straineds. Signs of infection tongs, shaking fittement (1) each work if any on otice any symptoms of a sensing allogic action, nethoding area in, thicking sensions. Shaking fittement, lister product is tame. However, get medicat heigh right away. If any on tense can but straines. Joint any sensions allogic reaction, nethoding reaction, theologic area, thicking sensions. Shaking fittement, lister product is tame. However, get medicat heigh right heavy if any on tence any symptoms of a sension allegic reaction, nethoding area, thicking sensions. Survey fittements, the breathing. This is not a complete test of a possible side effects. If you notice any protoco the sension allegic reaction, nethoding area, thicking sension is all decision product is tame. However, get medicat heigh right heavy if any on tence any protoco the sension allegic reaction, nethoding area (the lister). The sension is all decision product is tame. However, get medicat heigh right avery fit aver of the sension allogic reaction on the sension allogic reaction, nethoding and the sension states (the reaction and the sension) and the sension allogic reaction on the sension and the sension allogic reaction and the sension allogic reaction and the sension allogic reaction, n Canada - Call your doctor for medical advice about side effects. You may report side effects to Health Canada at 1-866-234-2345. PRECAUTIONS:

Before using this product, tell your doctor or pharmacist if you are allergic to fluticasone or salmeterol; or if you have any other allergies. This product may contain inactive ingredients (such as lactose,

mik proteins), which can cause allergic reactions or other problems. Talk to your pharmacist for more details. Before using this medication, tell your doctor or pharmacist your medical history, especially of; current/past infections (such as tuberculosis, herpes), high blood pressure, bone loss (osteoporosis), heart disease (such as chest pain, heart attack, irregular heartbeat), everactive thyroid (hyperthyroidism), diabetes, eye problems (such as cataracts, glaucoma), seizures, liver disease. Salmeterol may cause a condition that affects the heart heartheart, evenctive thyroid hyperthyroidismi, diabetes, erg problems (such as cataracts, glaucoma), scizures, liver discess. Solmeterol may cause a condition that affects the heart hythm: (U) protogation). U) protogation may be increased if you have certain medical conditions or at asking other drugs that may cause U) protogation. The discussion of t enargency treatment, or if you get a serious illnessfrijury, tell your doctor or dentist that you are using this medication or have used a controsteroid taken by mouth within the past 12 months. Tell your doctor immediately if you develop unusual/extreme tiredness or weight lass. Carry a warning card or medical ID bracelet that says you use for have used; conticosteroid medications. Before having surgery, tell your doctor or dentist about all the products you use including prescription drugs, nonprescription drugs, and herbal products). Dider adults with COPD may be at greater risk for pneumonia while using this drug. Older adults may also be more sensitive to the side effects of this drug, especially OT prolongation (see above). This medication may slow down a child's growth it used for a long time, but poorly controlled asthma can also slow down growth. The effect on final adult height is unknown. See the doctor regularly so your child's height can be checked, During pregnancy, this medication should be used only when clearly needed. Discuss the risks and benefits with your doctor, It is unknown if this medication passes into breast milk, Consult your doctor before breast-feeding. DRUG INTERACTIONS:

Drug interactions may change how your medications work or increase your risk for serious side effects. This document does not contain all possible drug interactions. Keen a list of all the products you use including prescription/nonprescription drogs and herbal products) and share it with your doctor and pharmacist. Do not start, stop, or change the dasage of any medicines without your doctor's approval. A product that may interact with this drug is: aldeslevkin. Dher medications can affect the removal of flutices are and salmeterol from your body. which may affect how this product works. Examples include arele antifungals (such as ketoconazole), boceprevir, cobicistat, macrolide antibiotics (such as clarithromycin), HIV protease inhibitors (such as lopinavir, ritonavir), nefazodone, telithromycin, among others. OVERDOSE:

foverdose is suspected, contact a poison control center or emergency room immediately. US residents can call their local poison control center at 1-800 222-1222. Canada residents can call a provincial poison control center. Symptoms of overdose may include: shaking (tremos), chest pain, fastfuregular heartbeat, seizures. NOTES:

Do not share this medication with others. Laboratory and/or medical tests (such as lung function tests), blood pressure, bone density tests) may be performed to monitor your progress or check for side effects. Consult your doctor for more details, Learn to use a pack flow meter, use it daily, and promptly report worsening asthma or other may moster shore that. Readings in the yellowyired range, increased use of quick-relief, havid aller general/mitants such as smoke, pollen, pet Gander, dust, or molds that may vorsen asthma and other breating problems. Because the fluxinus can also worsen breathing problems, ask your doctor or pharmacist if you should have a flux shot every year, in adults, this medication can increase the risk of bone lass (asteoporosis) if used for a long time. Talk with your doctor about your risk, and about available treatments for esteoporosis. Lifestyle changes that reduce the risk of bone less include doing weight-beam generations, have non-production and utamin 0, stopping smoking, and limiting alcohol. To help prevent osteoprosis later in life, encourage children to exercise and eat a healthy diet (including calcium). MISSED DOSE:

If you miss a dose, skip the missed dose and resume your usual dosing schedule. Do not double the dose to catch up. STORAGE:

S UDAGE: Store at nom temperature away from light, heat, and moisture. Do not store in the bathroom. Keep all medications away from children and pets. For the US product, do not remove the device from its original fail package unit mady to use. Discard the device 1 menth after you remove it from the original fail package or after all the doses have been used, which ever comes first. Do not flash medications down the tolide is your them as draw mass instructed to do so. Properly discard this product when it is erpired or no longer needed. Consult your plarmacist or local waste disposal company for more details. Information fast revised Navember 2014. Copyright(12) 2014 First Databank, Inc.

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**Medication Adherence** 



# Drugs don't work in patients who don't take them. -C. Everett Koop, M.D.

50%

Medications Not Taken As Instructed



Prescriptions Never Filled **70,000** ER Visits / Yr Pediatric Med Overdoses

# Health Literacy + Language Barriers = Adherence Challenges

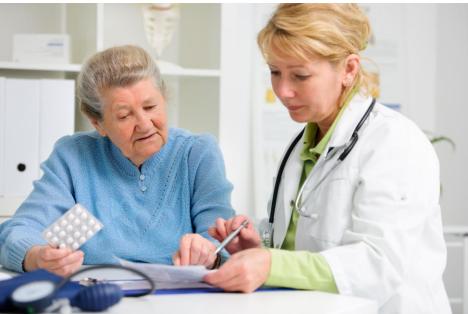
\*Brown MT, Bussell JK. Medication Adherence: WHO Cares? *Mayo Clinic Proceedings*. 2011;86(4):304-314. doi:10.4065/mcp.2010.0575. \*\*Schillie SF, Shehab N, Thomas KE, Budnitz DS. Medication overdoses leading to emergency department visits among children. Am J Prev Med 2009;37:181-7. \*\*\*Tamblyn R, Eguale T, Huang A, Winslade N, Doran P. The incidence and determinants of primary nonadherence with prescribed medication in primary care: a cohort study. Ann Intern Med. 2014;160:441-450.

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# Meducation<sup>®</sup> Addresses Low Health Literacy with Personalized Medication Instructions

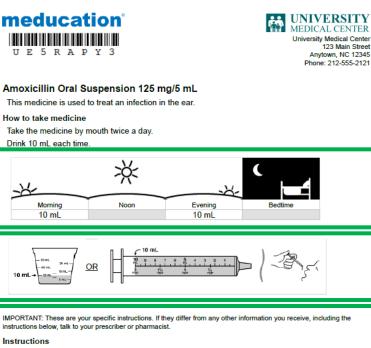


#### Easy to Understand



#### т ше рег шъписнон

- 5th to 8th grade reading level
- Visual spacing to reduce cognitive overload
- 5 font choices, up to 18 point font
- Select from more than 20 languages



Keep this medicine in the refrigerator.

Shake the bottle well before using the medicine.

After using the medicine for the total number of days, throw away any left over medicine.

It is important that you keep taking each dose of this medicine on time even if you are feeling well.

If you forget to take a dose on time, take it as soon as you remember. If it is almost time for the next dose, do not take the missed dose. Return to your normal dosing schedule. Do not take 2 doses of this medicine at one time.

Ref#: UE5RAPY3-1540749 5/3/2016 English Amoxicillin Oral Suspension 125 mg/5 mL (1 of 2)

# Meducation<sup>®</sup> Changes Adherence Behavior with Personalized Medication Instructions



### Side Effects Cautions

Please tell your doctor and pharmacist about all the medicines you take. Include both prescription and over-the-counter medicines. Also tell them about any vitamins, herbal medicines, or anything else you take for your health.

If you have diabetes and use urine glucose tests, this medicine may cause incorrect results. Please check with your doctor before making any changes to your diabetes treatment plan.

This medicine may decrease the effectiveness of some birth controls which use hormones (such as birth control pills and patches). Use an extra form of birth control, such as condoms, while on this medicine.

#### Cautions

Tell your doctor and pharmacist if you ever had an allergic reaction to a medicine. Symptoms of an allergic reaction can include trouble breathing, skin rash, itching, swelling, or severe dizziness.

Do not use the medication any more than instructed.

Please tell your doctor if you have moderate to severe diarrhea while on this medicine. Do not treat the diarrhea with over-the-counter diarrhea medicine.

Tell the doctor or pharmacist if you are pregnant, planning to be pregnant, or breastfeeding.

Ask your pharmacist if this medicine can interact with any of your other medicines. Be sure to tell them about all the medicines you take.

Do not start or stop any other medicines without first speaking to your doctor or pharmacist.

Do not share this medicine with anyone who has not been prescribed this medicine.

Always keep medicine out of reach of children and pets.

#### Side Effects

diarrhea

stomach upset or abdominal pain

# Adherence – Meducation<sup>®</sup> RS



### **Multilingual Regimen Summaries**

R	123 Main Street, Anytown, NC 12 212-555-2121			ID: FHRH7	
use everv dav.					
V,	${\times}$		د ۹		
Morning	Noon	Evening	Bedtime		
1				Take by MOUTH. For heart.	
1				Take by MOUTH. For high blood pressure.	
12 units	14 units	16 units		INJECTION medicine. For diabetes.	
10 mL		10 mL		Take by MOUTH. For infection. Use for 10 days.	
			1	Take by MOUTH. For high cholesterol.	
use as needed.					
Use the medicine every 3 to 4 hours. Inhale one to two (1-2) puffs each time.				BREATHING medicine. For asthma attack. Use the medicine as needed for your symptoms.	
	1 12 units 10 mL Use as needed.	Morning Noon 1 Noon 1 1 1 1 12 units 14 units 10 mL Use the medicine every 3 to 4 ho	Morning Noon Evening          Morning       Noon       Evening         1       Image: Comparison of the second secon	Morning       Noon       Evening       Bedtime         1	

Video demo content access via QR code





# **Meducation® Font and Language Choices**

### Individualized Medication Instructions

### **Offers 5 font sizes**



### More than 20 languages

- English
- Spanish
- Arabic
- Bengali
- Burmese
- Cantonese
  - Farsi
- French
- Haitian Creole
- Italian
- Karen
- Korean

- Mandarin -Simplified
- Mandarin -Traditional
- Polish
- Portuguese (Brazilian)
- Russian
- Somali
- Swahili
- Tagalog
- Vietnamese
- Yiddish

### **Human Translation**

# **Meducation<sup>®</sup> Personalized Instructions**



#### Regimen Summary improves medication adherence

	N	*	N	د 	
	Morning	Noon	Evening	Bedtime	
Aspirin Enteric Coated Tablet 81 mg	1				Take by MOUTH. For heart.
Accupril Tablet 10mg	1				Take by MOUTH. For high blood pressure.
Humalog Insulin Solution 100 IU/mL	12 units	14 units	16 units		INJECTION medicine. For diabetes.
Biaxin Oral Suspension 125mg/5 mL	10 mL		10 mL		Take by MOUTH. For infection. Use for 10 days.
Lipitor Tablet 40 mg				1	Take by MOUTH. For high cholesterol.
AS NEEDED: Medicine you should					
AS NEEDED: Medicine you shoul ProAir HFA Inhaler 90 mcg/inh	Use the medicin	e every 3 to 4 ho ro (1-2) puffs eacl			BREATHING medicine. For asthma attack. Use the medicine as needed for your symptoms.

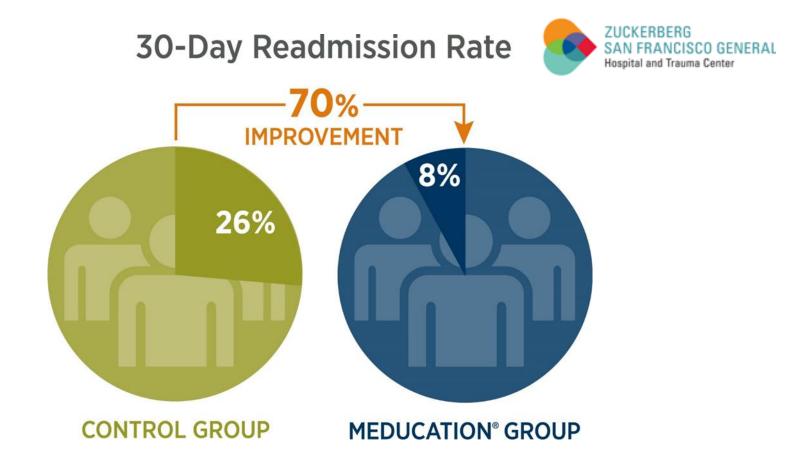
Videos demonstrate proper medication administration techniques



P H R H 7	W K J	MEDICAL CENTER University Medical Center 123 Main Street Anytown, NC 12345 Phone: 212-555-2121
we medicine is used <b>bw to take medic</b> Take the medicine b Drink 10 mL each times	to treat infection. ine by mouth twice a c	s an changes R
*	*	
Morning	Noon	Evening Bedtime
10 mL		10 mL
Jse the medicine fo structions		S
ake the medicine w		
Ceep this medicine	e as er av 8 and	
		number of days, throw away any left over medicine.
f you forget to take	a dose on time, ta e missed dose. Re	ach dose of this medicine on time even if you are feeling well. ake it as soon as you remember. If it is almost time for the next eturn to your normal dosing schedule. Do not take 2 doses of
	er medicines. Also	st about all the medicines you take. Include both prescription tell them about any vitamins, herbal medicines, or anything
	35	English

#### Personalized medication instructions reduce medication errors

# Meducation<sup>®</sup>: San Francisco General Hospital **f**C Feasibility Pilot



First Datahank

8% of patients receiving Meducation<sup>®</sup> and counseling at discharge were readmitted within 30 days (compared to the control group where 26% of patients receiving standard medication instructions and counseling at discharge were readmitted within 30 days)

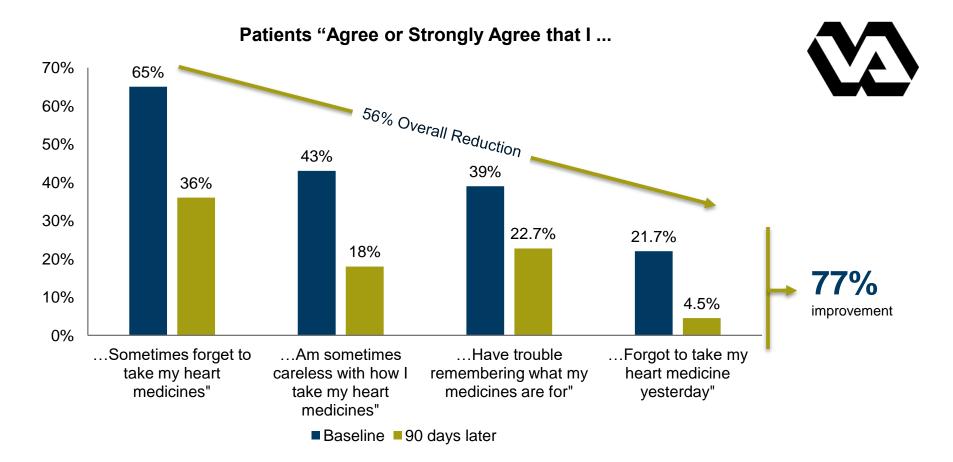
\*Preliminary results, not yet peer-reviewed

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# **Improved Medication Adherence at the VA**

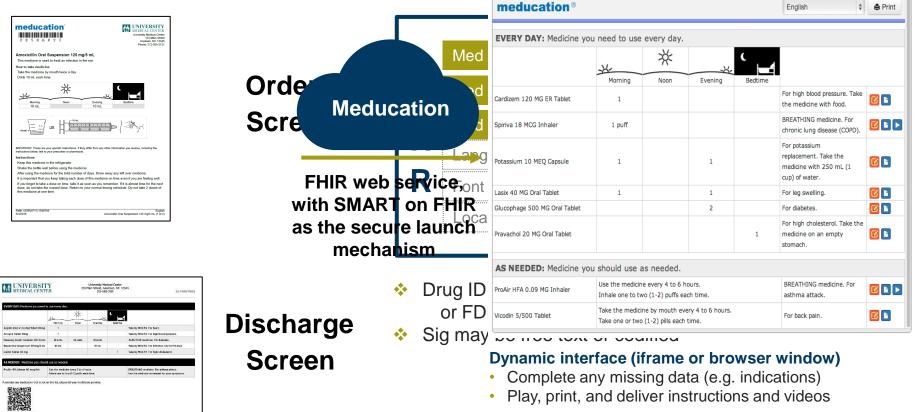
## Three-month study of Meducation®\*



\* Published in Peer Reviewed Journal: "Patient Education and Counseling"

# **Meducation<sup>®</sup> Technical Integration**





Play, print, and deliver instructions and videos



# **Real World Users and Results**







#### San Francisco General Hospital

Readmissions reduced from 26% to 8%

#### **University of Connecticut**

- HCAHPS Improvement
- 1st, 4th, 4th Percentiles to 85th, 98th, 52nd Percentiles

#### VA

• 77% Improvement, Remember to Take Meds



# **Thank You – Questions?**

#### Lori McLean Imclean@pgsi.com 919-653-4387

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