



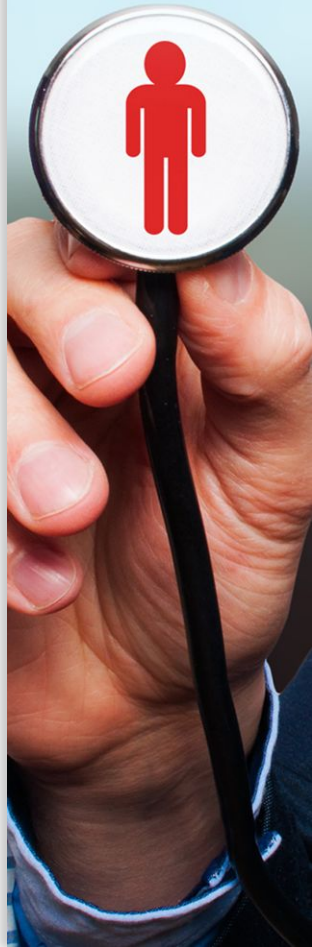
Direct-to-Parent texting after appendectomy

Reducing Post-Operative Returns To System



Vision Statement

- **Specific Aim:** Reduce unexpected returns to hospital for admission or to emergency department after Surgical Procedure (within 30 days)





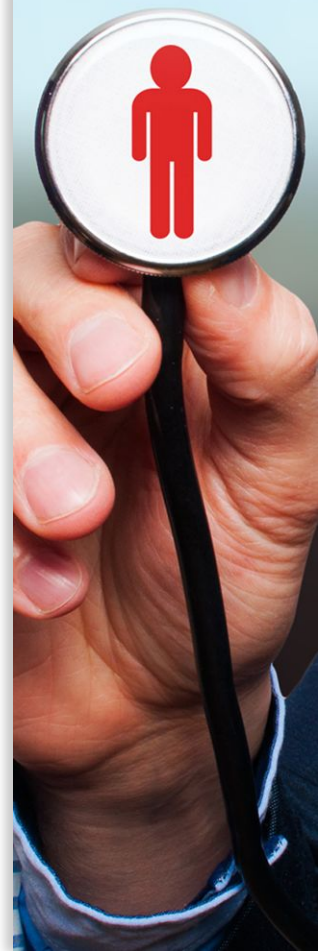
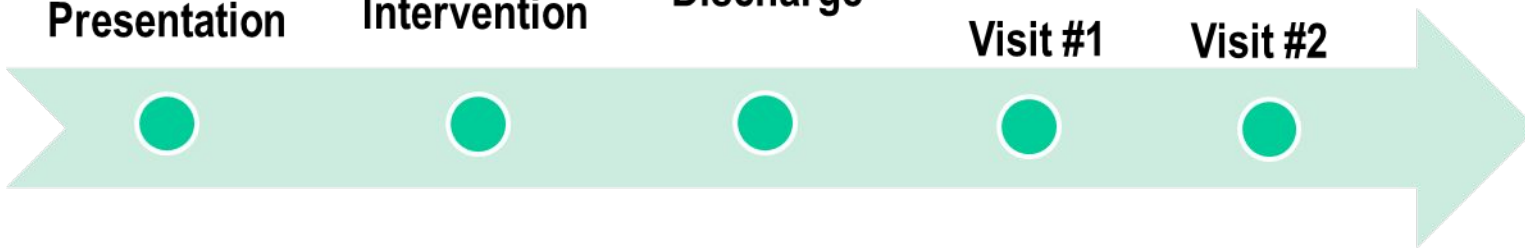
**Initial
Presentation**

Intervention

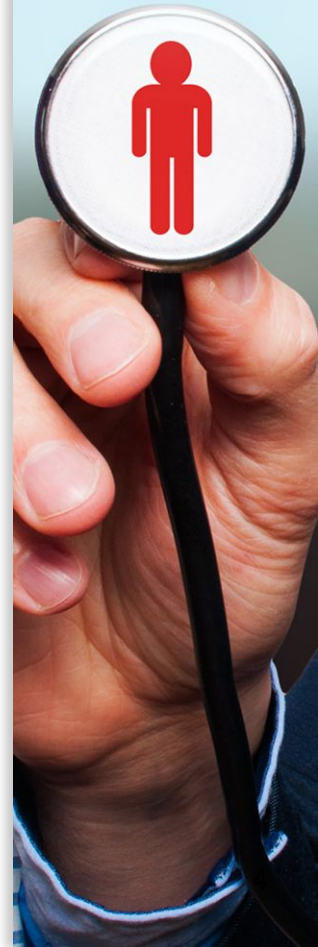
Discharge

**Post-op
Visit #1**

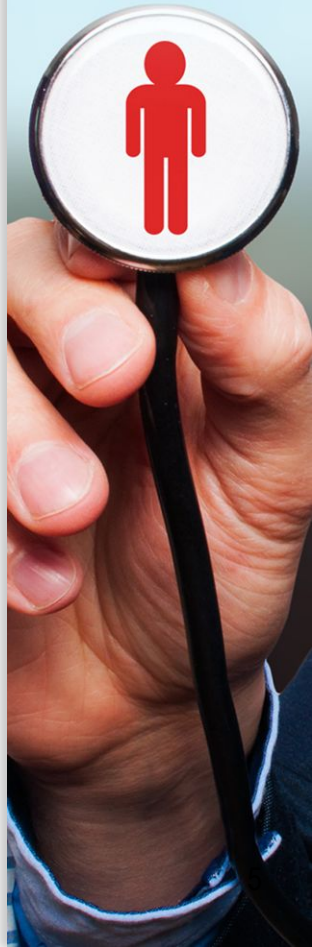
**Post-op
Visit #2**



Discrete Episode

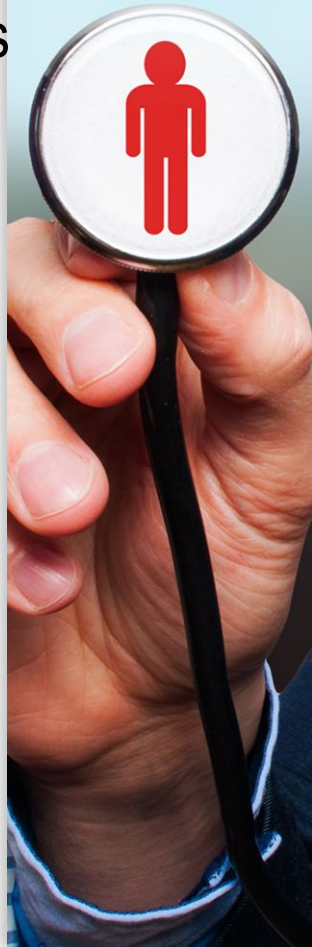


Journey

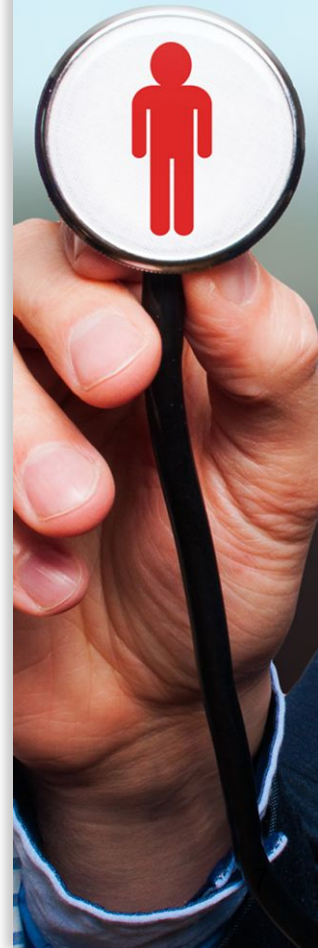
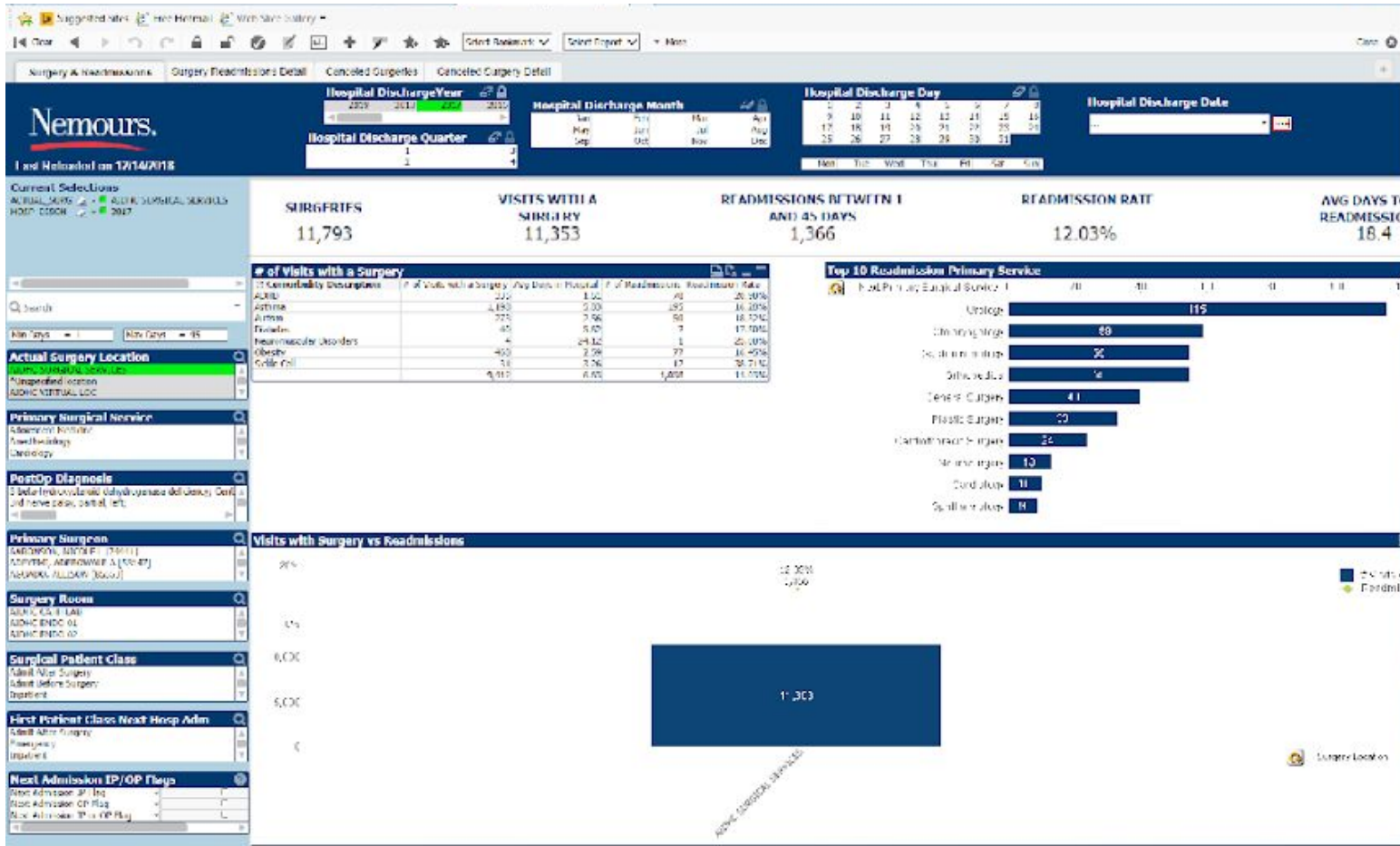


Telemedicine Navigator

- Navigate patient throughout continuum of their problem
- Touch and Interact with patient at pre-determined time intervals
- Phone-call, electronic messaging, videoconference capability



DASHBOARD



WHERE WE BEGAN

NCH SURGICAL SERVICES [PRIOR GROUP DATA – 2 MONTH SAMPLE]		Non-Readmits [1058]	Readmits [69]
Questionnaire	< HS Graduate	16.7%	22.2%
	No transport access	1.6%	5.1%
	No afterhours Rx	4.0%	0.0%
	No PCP	17.8%	13.5%
Language	Spanish Language	12.2%	7.0%
	Any Non-English	13.5%	8.4%
Comorbidities	ADHD, Asthma, Autism, Diabetes, Obesity, Sickle Cell, Neuromuscular	11.5%	16.9%

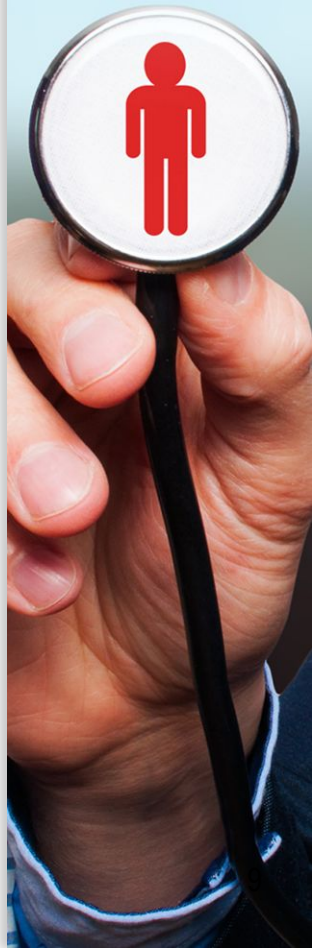
*Missing Data in up to 30%



NCH SURGICAL SERVICES - UPDATED

NCH SURGICAL SERVICES [APR 2017 THROUGH 3/3/18]		Non-Readmits [6465]	Readmits [574]
Questionnaire	< HS Graduate No transport access No afterhours Rx No PCP	6.8% 1.2% 2.2% 12.2%	5.6% 2.3% 1.7% 9.8%
Language	Spanish Language Any Non-English	15.7% 16.6%	32.3% 33.4%
Comorbidities	ADHD, Asthma, Autism, Diabetes, Obesity, Sickle Cell, Neuromuscular	14%	29.1%

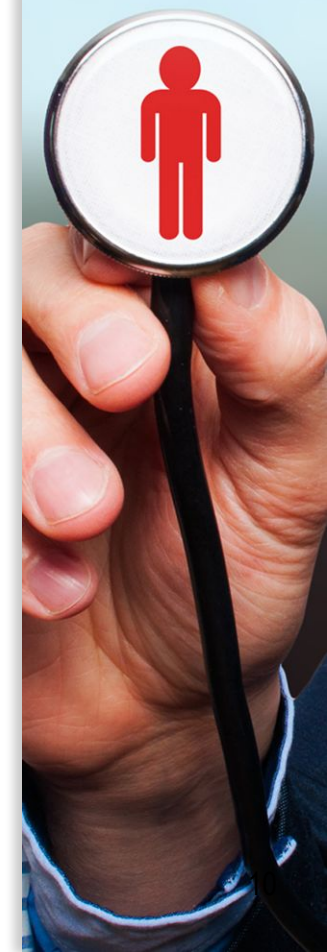
*Missing Data in up to 30%



AIDHC SURGICAL SERVICES - UPDATED

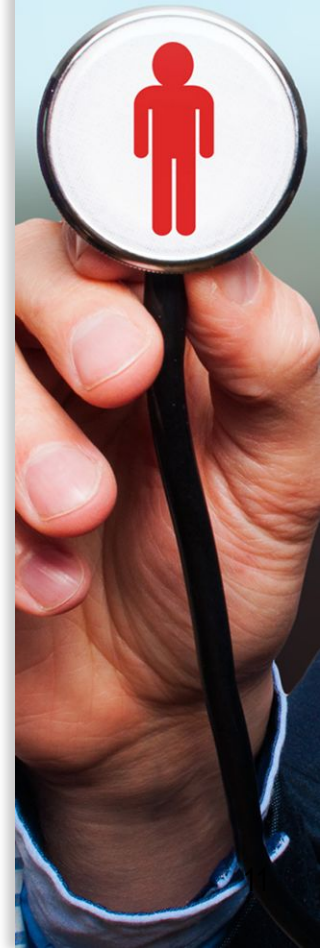
AIDHC SURGICAL SERVICES [APR 2017 THROUGH 3/5/18]		Non-Readmits [9701]	Readmits [1190]
Questionnaire	< HS Graduate	2.6%	3.2%
	No transport access	0.4%	1.3%
	No afterhours Rx	0.4%	1.0%
	No PCP	0.9%	0.7%
Language	Spanish Language	5.1%	6.6%
	Any Non-English	6.1%	7.4%
Comorbidities	ADHD, Asthma, Autism, Diabetes, Obesity, Sickle Cell, Neuromuscular	20%	28%

*Missing Data in up to 70%



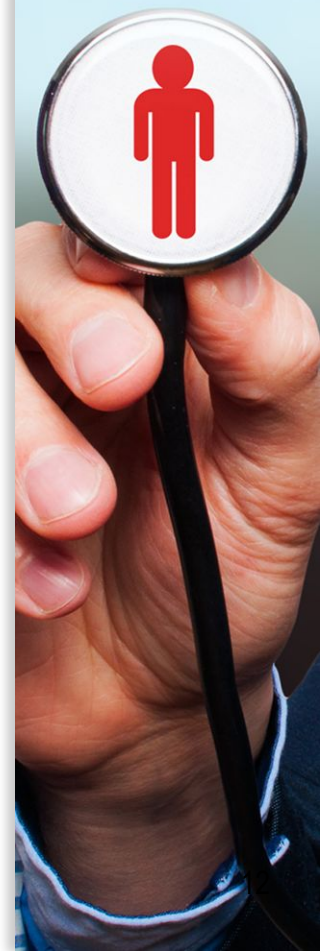
TOP DIAGNOSES LEADING TO READMISSION

ENT (NCH)	ORTHO (AIDHC)	GENERAL SURGERY (AIDHC)
<ol style="list-style-type: none">1. Tonsils and Adenoids [64]2. Tympanostomy [47]3. Laryngoscopy [11]	<ol style="list-style-type: none">1. Posterior Spine Arthrodesis [18]2. Osteotomy [11]3. Open fracture [10]4. Debridement [9]5. Implant removal[8]	<ol style="list-style-type: none">1. Laparoscopic Appendectomy [23]2. Insertion of Vascular Catheter [16]3. Removal of a tunneled CVA [11]4. Surgical gastrostomy [10]



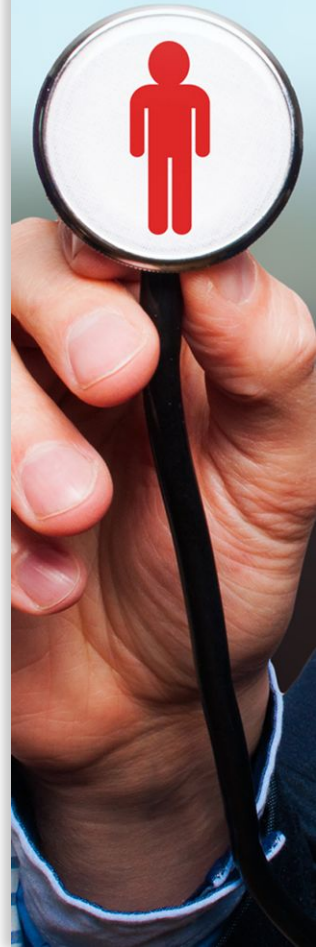
LAPAROSCOPIC APPENDECTOMY

	NCH	AIDHC
General Surgical Cases	1007	1339
Readmissions	93	242
Readmission Rate	9.2%	18.1%
Laparoscopic Appendectomy	235 (23.3%)	307 (22.9%)
Readmissions	20 (1 of 5)	23 (1 of 10)
Readmission Rate	8.5%	7.5%



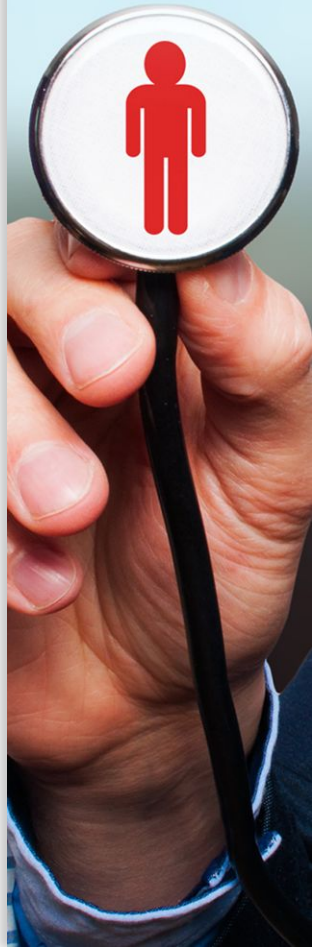
Appendectomy: Chart Review

- 23 ED revisits/readmissions
- 17 did not contact surgery team prior to ED visit
- 17 would have likely been preventable if patient had connected with system (could have been triaged by phone or office visit)
- Sample preventable return diagnoses: vasovagal syncope, rash, viral URI, UTI, superficial wound issues



Telehealth Intervention

- Worked with Nemours CareConnect team to design Nemours-initiated intervention
- Education for CareConnect docs on common post-op appy problems and how to triage
- Education for surgeons to expect possible communication from CareConnect docs
- Trepidation from CareConnect team about having to make lots of calls to parents who may not want to hear from them



Transition in Concept from CareConnect-initiated to Auto-text

- The Nemours Envoy: Text message to patients and families.
- New enhancement: Added capability to process text responses from patient and provide appropriate subsequent responses based on a pre-programmed message path.
- CPT Code trigger □ Text message laparoscopic appendectomy patients. (CPT Code 44970)
- Patients receive text messages 2, 6, 10, & 14 days after discharge.
- After the last interval, a text message is sent to elicit feedback.



We'll be in touch soon.

Here's what to expect following your surgery at Nemours.



Recovery from surgery is different for every child, depending on a variety of circumstances. To be sure that your child's recovery is progressing and to be sure all of your questions and concerns are answered, here's what you can expect:

- Within 48 hours you will receive a series of texts from Nemours to assess how recovery is going.
- If needed, Nemours may request an online video visit using Nemours CareConnect.
- With Nemours CareConnect video visit, the pediatrician can see and talk to you and your child in a secure environment.
- Please prepare for this follow up contact by downloading and enrolling in the free Nemours CareConnect app from Google Play or the IOS App Store, or you can enroll on your desktop at www.NemoursCareConnect.com.
- When you use Nemours CareConnect to speak to a Nemours pediatrician, use the coupon code : **POSTOP** to cover your telehealth visit for 15 days following discharge.



Nemours CareConnect is available to families as an app on both the App Store and Google Play.

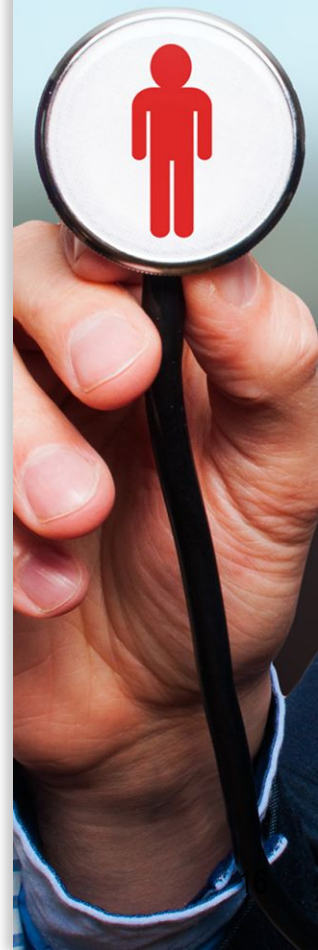


Nemours

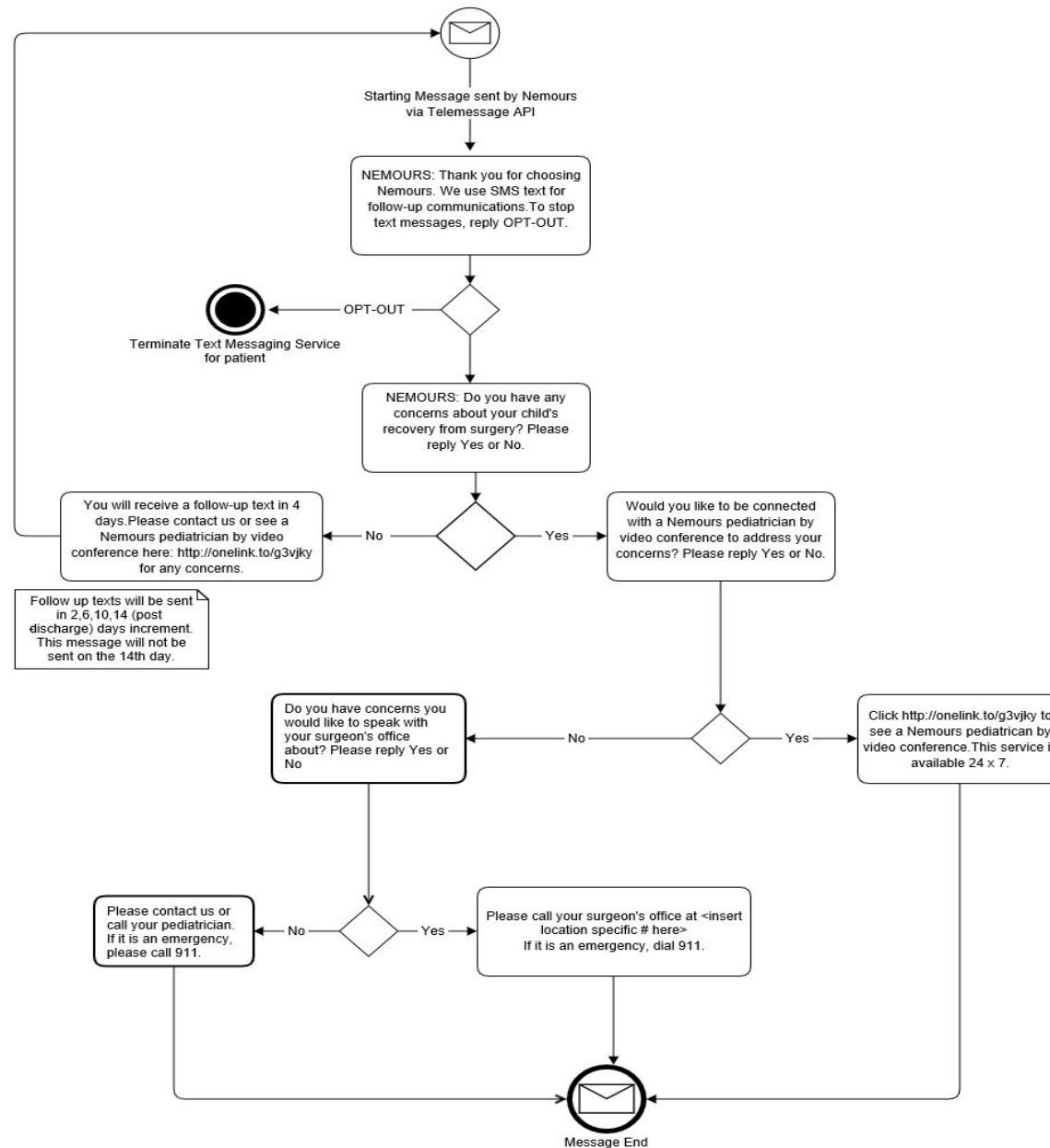
Your child. Our promise.

Nemours. Children's Health System

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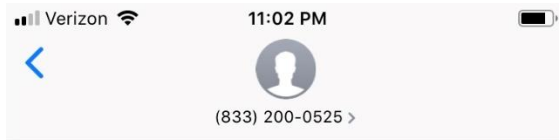


Message Flow / Rule for Post-Appendectomy Patients



Sample Message Flow 1 (With Welcome Message)

- Patient has concerns but does not want video conferencing



Text Message
Today 10:58 PM

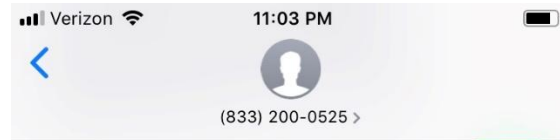
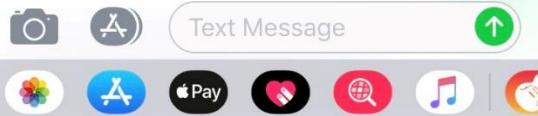
NEMOURS: Thank you for choosing Nemours. We use SMS text for follow-up communications. To stop receiving text messages, reply OPT-OUT.

NEMOURS: Do you have any concerns about your child's recovery from surgery? Please reply Yes or No.

Yes

Would you like to be connected with a Nemours pediatrician by video conference to address your concerns? Please reply Yes or No.

No



Yes

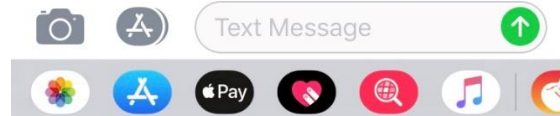
Would you like to be connected with a Nemours pediatrician by video conference to address your concerns? Please reply Yes or No.

No

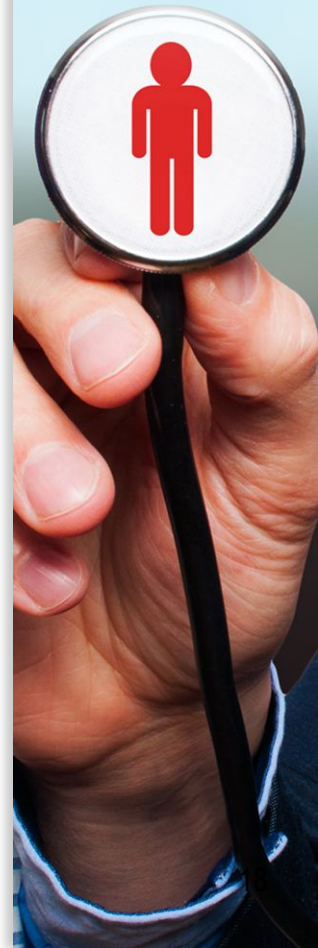
Do you have concerns you would like to speak with your surgeon's office about? Please reply Yes or No

Yes

Please call your surgeon's office at: [\(407\)-650-7622](tel:407-650-7622). If it is an emergency, dial 911.

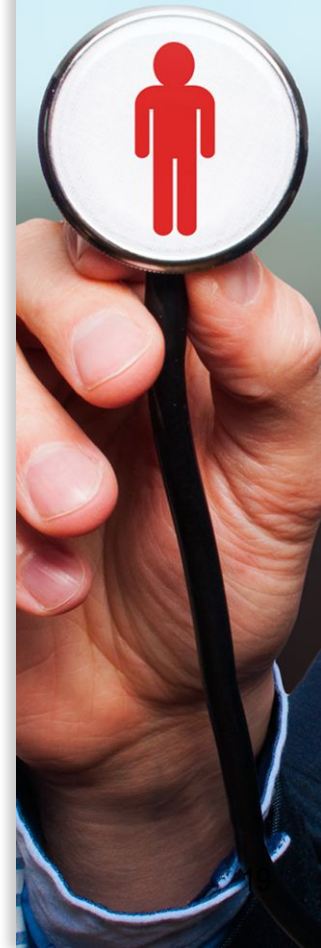
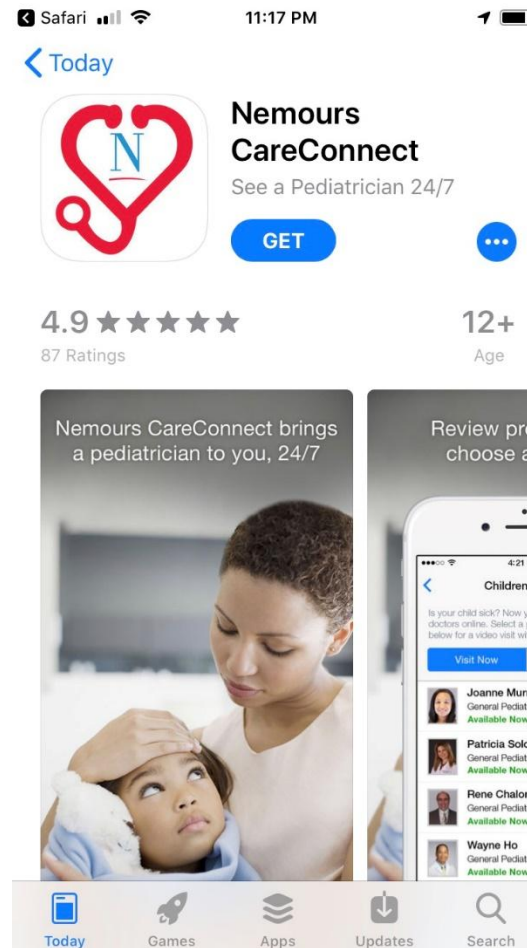
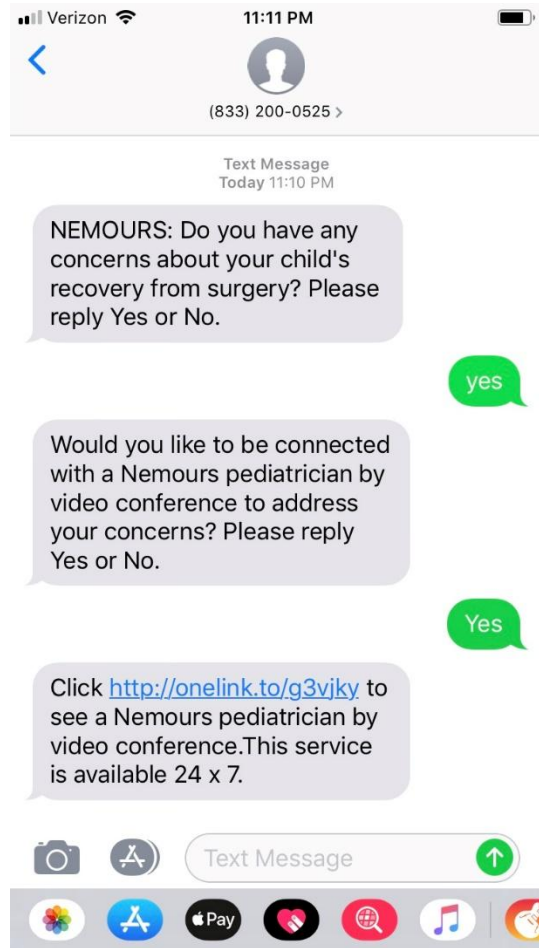


Your potential. Our promise.



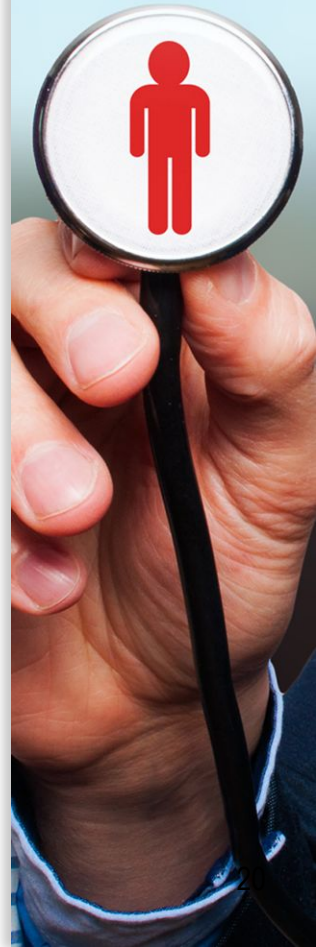
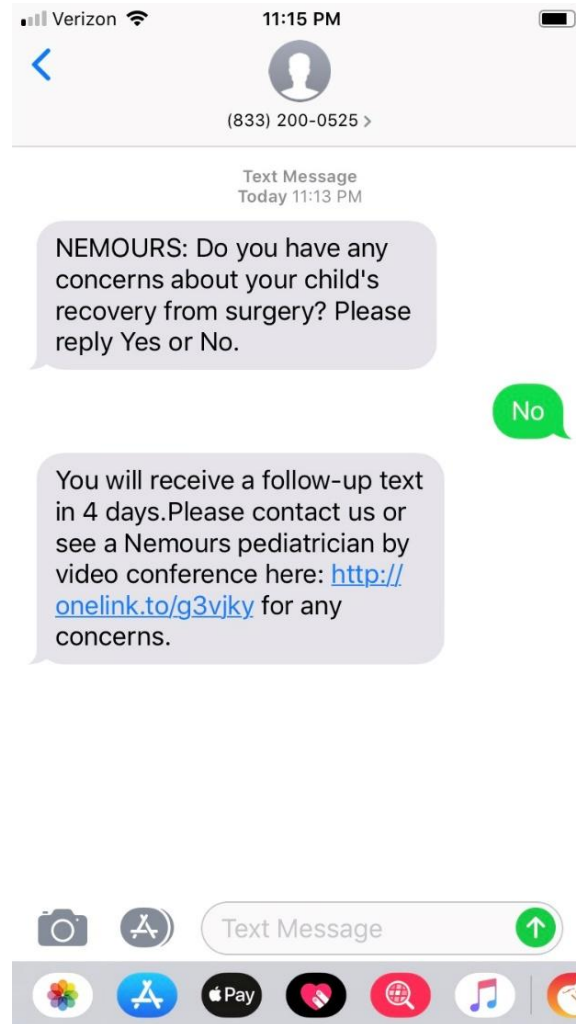
Sample Message Flow 2

- Patient has concerns and wants video conferencing

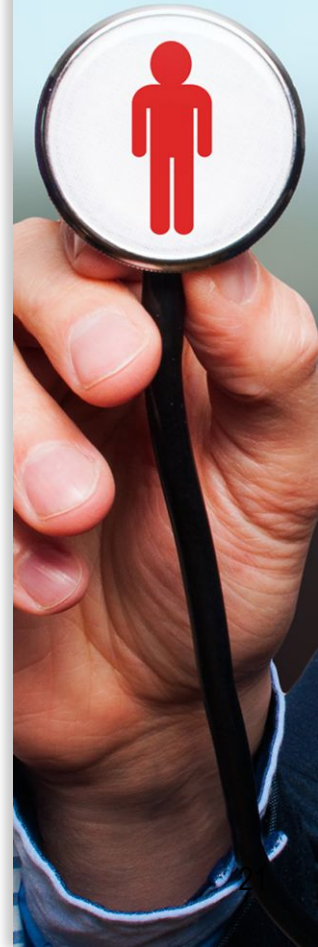
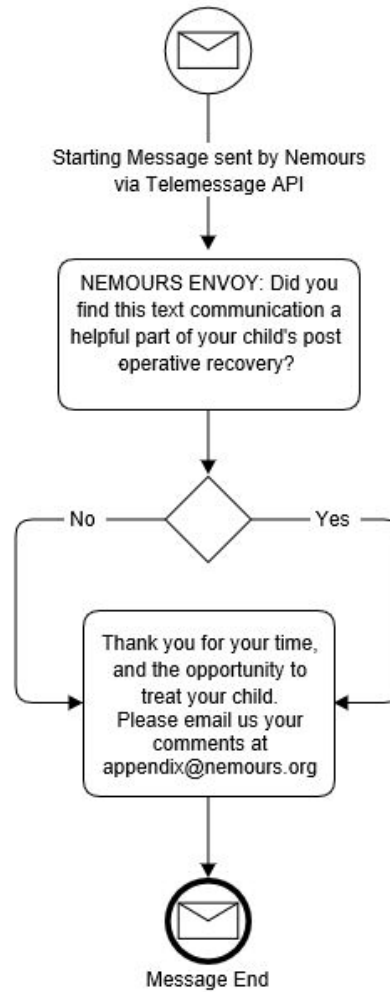


Sample Message Flow 3

- Patient has no concerns



Survey Text Message



Email Notification Report

- The follow-up messaging will run once a day.
- After each run, an email report will be sent to subscribers.

Reply Reply All Forward IM



noreply-onlinepaging@nemours.org

Reforma, Noel

10:29 AM

ENVOY: Post-surgery Followup Messaging Event Report 2018-12-18

Retention Policy 3 Year Delete All Other (3 years)

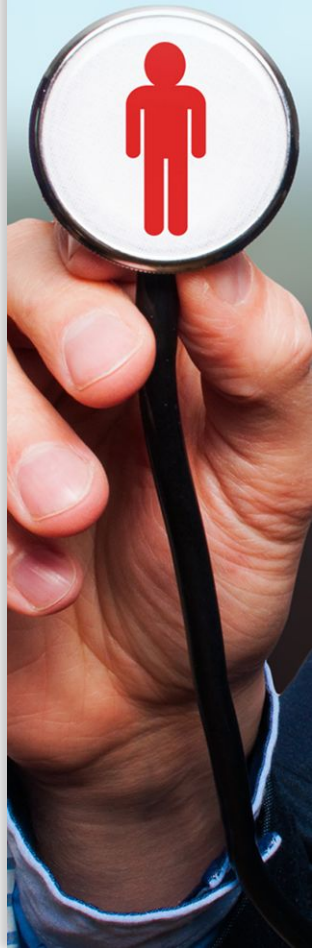
Expires 12/17/2021



ENVOY: Automated Post-surgery Follow-up Text Messaging Event Report 2018-12-18							
CPT Code	Discharged	MRN	Patient Name	Phone Number	Message Sent	Send Date	Status
44970	6 days ago	31859383	Chase Alexander	321-431-0256	NEMOURS: Do you have any concerns about your child's recovery from surgery? Please reply Yes or No.	2018-12-18T10:29:14.256	Sent
44970	10 days ago	31858399	Noelia Chinchilla	null	N/A	2018-12-18T10:29:14.520	Not sent

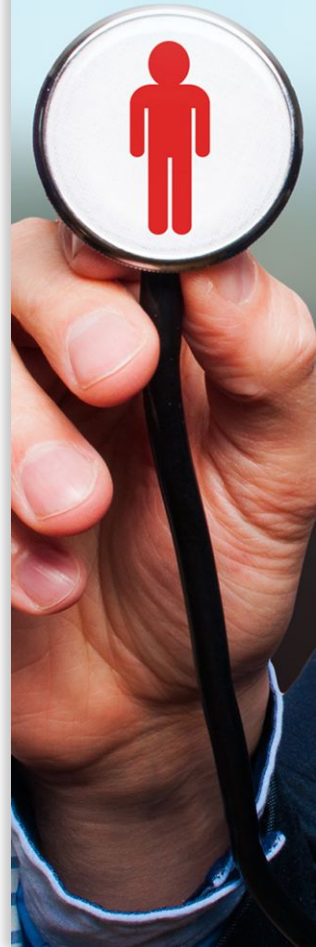
Next Steps

- Plan 3 to 6 month trial period
- Measure texting utilization
- Use dashboard to assess impact on ED visit rate for appy pts (NCH and AIDHC)
- ? Scale the intervention to include other operations
- Many potential applications for collecting patient-reported outcomes



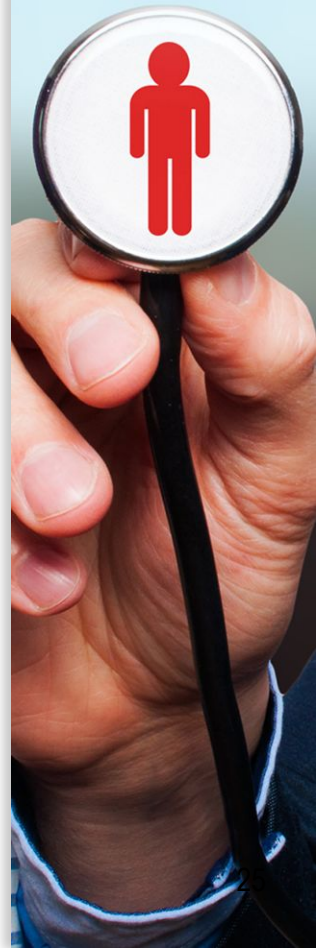
Future Considerations

- Higher revisits rates for Spanish speaking problem in Orlando, but not Wilmington, for some operations:
 - Need to advocate for interpreter services in Orlando
 - Texting can be done in Spanish
- Focus on patients with comorbidities
- Promoting transparency is important:
 - This dashboard should be made widely available to providers
 - Surgeons should be notified when their patients return to system in post-op period



Acknowledgements

- Mary Huntington
- Jackie Gustafson
- Noel Reforma
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- Natalina Zisa
- Carey Officer
- Martha McGill
- Lloyd Werk
- Steve Lawless



Questions?

