

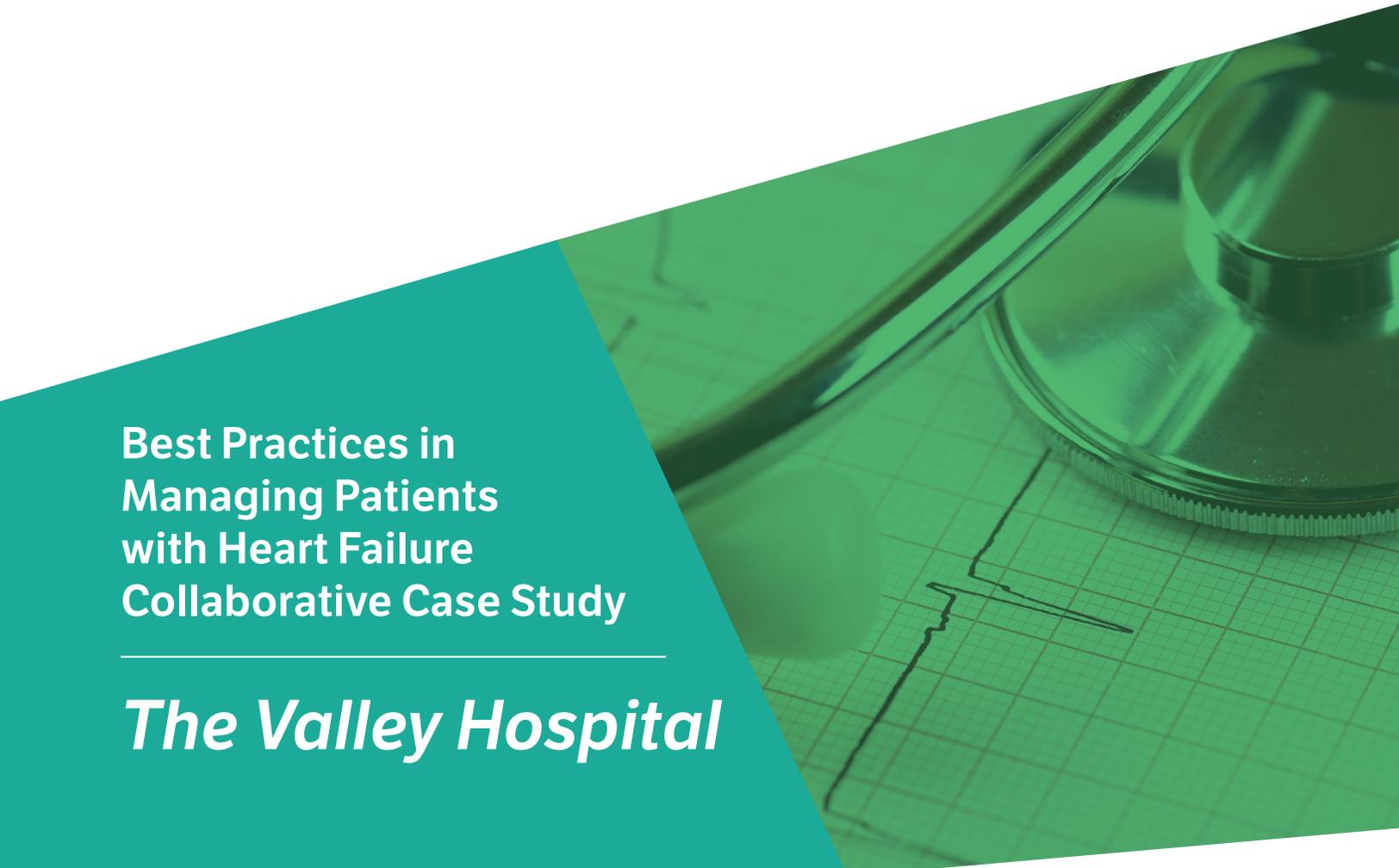


Advancing High Performance Health

AMGA Foundation

**Best Practices in
Managing Patients
with Heart Failure
Collaborative Case Study**

The Valley Hospital



Organizational Profile

The Valley Hospital, established in 1951, is a nonprofit community-based hospital serving the local township of Ridgewood and the surrounding communities of Bergen and Passaic Counties in New Jersey. Today, the hospital is comprised of not only the original main hospital campus with 431 licensed beds, but also multiple off-site and ambulatory adult patient, child, and diagnostic care services. The hospital has 1,109 physicians on active staff with a wide range of subspecialties offered to meet ever-growing community needs.

The Outpatient Transitional Care (OPTC) Program formerly known as the Outpatient Heart Failure Program, was established in 2012 as a pilot project to treat patients with heart failure (HF) after hospital discharge, in an outpatient setting, to try to prevent hospital readmissions. Located in an outpatient ambulatory care setting on the hospital's main campus, the program was designed to:

- Improve patient quality care by providing follow-up care by a nurse practitioner within 7-14 days of hospital discharge
- Maintain heart failure CMS quality documentation measures
- Reduce rate of readmissions in this high-risk patient population

The OPTC Program has grown and now employs a staff of one full-time cardiologist with a specialty in HF, three full-time advanced practice providers (APPs), and one part-time APP, together with two full-time registered nurses (RNs) and one part-time RN.

Since the program's inception, 662 patients have participated and more than 6,664 patient visits have been conducted. While the OPTC Program's scope is limited to cardiovascular care with specific practice in the care of HF patients, the inherent comorbid conditions of these patients ensure that referrals to pulmonary, electrophysiology, infectious disease, palliative care, home care, wound care and social services are quite common. Hence, the patients treated within the OPTC Program require full-scale comprehensive services and intense collaboration with other healthcare providers in order to provide high-quality evidence-based care.

Since the inception of the OPTC Program, The Valley Hospital has received two concurrent Disease-Specific Certifications for Heart Failure by the Joint Commission.

Executive Summary

The number of patients with HF in the United States is approximately 5.7 million adults.¹ About half of the patients who develop HF die within five years of diagnosis.² HF costs have reached an estimated \$30.7 billion each year.³ This total includes the cost of healthcare services, medications to treat heart failure, and missed days of work.⁴

With the exorbitant financial, emotional, and physical costs exacted from heart failure patients, their families, and the healthcare community, The Valley Hospital endeavored to trial solutions to prevent "preventable" readmissions for this high-risk patient population. The OPTC Program focused on this vulnerable population of post-discharge HF patients with the goal of reducing The Valley Hospital's overall 30-day all-cause readmission rates.

The program concentrated on the following interventions:

- Education in self-care disease management by the RN staff at the patient's bedside
- OPTC Program appointments scheduled prior to patient discharge
- Automatic referrals for HF patients to be seen in either the program or by cardiologist or PCP within 7-14 days post-discharge
- Utilization of a mobile health paramedic/RN transport service to assess and treat patients in-home, if patients deemed especially high-risk and unable to be seen in the OPTC Program

These interventions and others initiated by OPTC staff during participation in the AMGA HF Collaborative resulted in reductions in The Valley Hospital's overall 30-day all-cause readmission rate by 19.9%.

The OPTC overall 30-day all-cause readmission rate for patients enrolled in the Program is 3.4% for 2016.

Program Goals and Measures of Success

The primary goals of Valley Hospital's OPTC Program were to:

- Reduce 30-day all-cause readmission rates for the patients participating in the program, as well as hospital-wide
- Have all patients with a primary discharge diagnosis of HF be seen by the OPTC Program staff, or alternatively, in their PCP or cardiologist office within seven days of discharge

Data Collection and Measurement

In terms of data collection and measurement, The Valley Hospital's goals included:

1. Quantify documentation of use of evidence-based medicine (beta blockers, ACE/ARB) for HF patients through electronic medical record (EMR) system and audit reports
2. Increase referrals to the OPTC Program as measured by the number of patients with primary HF diagnosis discharged divided by how many of those patients were followed in the OPTC Program post-discharge
3. Increase actual confirmed follow-up visits to the PCP/ cardiologist post-discharge within 7 to 14 days, comparing patients who did or did not have a 7-day follow-up appointment
4. Monitor 30-day all-cause readmission rates for The Valley Hospital and for the patients seen in the OPTC Program with measurements from Crimson/hospital's EMR data base and internal audits by OPTC Program staff
5. Collect 30-day readmission rates for patients seen by Mobile Health Paramedic/RN services during participation in the AMGA Collaborative

Population Identification

The Valley Hospital has both employed (Valley Medical Group) and non-employed cardiologists numbering 1,109. The OPTC Program has one full-time cardiologist with a specialty in HF who was part of the team represented during the AMGA HF Collaborative.

The population for purposes of the HF Collaborative included any patient discharged from the hospital with a primary diagnosis of new or chronic heart failure.

Through collaborative and administration efforts, all of the VMG cardiologists agreed to have their patients automatically referred to the OPTC Program for follow-up care.

A descriptive study of the hospital's heart failure population 30-day readmissions completed in 2013 (sample n= 79) identified the following population demographics:

- 52.4% female, 47.6 % male
- Average age:= 80.5 years
- Mean ejection fraction: 45%.

Intervention

The Valley Hospital and the OPTC Program staff identified many opportunities to help reduce the risk of HF readmissions. The following were translated into interventions within the course of the HF Collaborative:

- Ensuring follow-up visits with healthcare providers post-discharge
- Continued reinforcement of HF education at each visit
- Improvement in care processes for accurate medication reconciliation
- Optimizing prescribing of neuro-hormonal medications, as appropriate in outpatient setting
- Treatment with IV-diuresis in patients deemed clinically volume-overloaded during OPTC Program visits
- Initiating mobile health paramedic/RN visits to patients between OPTC Program visits as necessary, to provide clinical assessment of volume status in the home and with administration of medications per approved care algorithms

Action Plan

The OPTC Program staff recognized that HF patients required a basic introduction to key self-care management strategies before they left the hospital. Repeated reinforcement of the same education would be necessary on an ongoing basis as part of their participation in the OPTC Program.

With the help of hospital IT staff, dashboards and reports were compiled and printed daily. These reports identified HF patients in the hospital. It was determined that the RN staff would provide HF education at the bedside to all VMG patients identified by the daily printed report, together with an introduction to participate in the OPTC Program post-discharge. The RN staff would then make a follow-up appointment for the patient prior to discharge.

Ideas collected and implemented through participation in the HF Collaborative included:

- Providing patients with their own personalized HF binders, to assist with daily weight documentation and written references for sodium and fluid restriction
- Equipping patients with a blue canvas bag for them to bring medication bottles with them on initial and subsequent OPTC visits to ensure accuracy of medication reconciliation
- Identifying gaps in education material (“heart failure zones”) and adopting a single HF education booklet for use throughout The Valley Hospital system and in the three partner sub-acute facilities.

It was determined that the OPTC Program visits would follow a specific protocol:

1. The patient would be seen by an APP or the HF cardiologist
2. A plan of care would be developed with optimization/ titration of their HF medications, along with provision of short-term IV diuresis as appropriate
3. Follow-up appointments back to their cardiologist or PCP would be made and confirmed
4. Referrals to needed services would be made during the visit (e.g., home care, telehealth management services, social work, wound care, consults to pulmonary, infectious disease, electrophysiology services, etc.)
5. Individual medication reconciliation would be conducted by pharmacists at each visit
6. Mobile health visits would be arranged by OPTC Program staff as deemed necessary to assist with management of urgent symptoms between visits to PCP/cardiologists or scheduled appointments in the OPTC Program

Outcomes and Results

The 30-day readmission rates have consistently trended downward since participation in the AMGA HF Collaborative. Those rates include the hospital as a whole compared to the national average, the OPTC Program population in general and those patients with VMG doctors/cardiologists (see appendix).

Patient referrals to the OPTC Program have grown by 13.6% between the fourth quarter of 2015 and the fourth quarter of 2016.

The Mobile Health Paramedic/RN transport team has seen 75 patients from the OPTC Program by referral in 2016 and has helped reduce The Valley Hospital’s 30-day all-cause readmission rate through their services. The 30-day readmission rates for HF patients who received Mobile Health visits in 2016 was 7.6%. Only 5 out of the 66 patients visited in 2016 were readmitted within 30 days of their HF discharge from the hospital.

Other measures tracked internally were 30-day readmission rates for those patients receiving sub-acute care post-discharge in the partner sub-acute facilities which ranged from 20% to 10%.

Lessons Learned and Ongoing Activities

The lessons learned while participating in the AMGA HF Collaborative included:

1. Reducing 30-day all-cause readmissions for HF requires intense collaboration and a team-based approach.
2. For best results, there should be a partnering of the patient’s primary cardiologist/PCP and extended outpatient services.
3. Reduction of readmissions for HF starts with identifying those patients within the hospital system who will go on to have a discharge diagnosis of primary HF. The development of processes for identifying these patients included the use of developed IT dashboards. The dashboards developed to date have not been perfected and still require ongoing review and audits by staff to correctly identify appropriate patients.
4. Patients seen in the OPTC Program required integration with palliative care services. Collaboration continues with

The Valley Hospital's employed Outpatient Palliative Care APP and Outpatient Hospice Care APP to streamline services.

5. Consistent, repetitive education and reinforcement of self-care management strategies pre- and post-discharge was key, as the OPTC Program staff endeavored to develop a partnership with patients and families to manage HF signs and symptoms post-discharge and between visits with physicians and/or the OPTC Program staff.

A descriptive study of the hospital's HF patients indicated that a large portion of them were being readmitted from sub-acute facilities. The hospital has a business model that partners with three local area sub-acute facilities. The sub-acute facilities are staffed with APPs with the intent to provide medical management and oversight of HF patients to reduce risk of readmission. The model has proved challenging to implement, but has produced some success with regard to readmission rates.

Prevention of readmissions for HF requires collaboration and support from the patient's entire healthcare team and all the ancillary services and resources that surround the patient's care.

One major challenge and barrier to reducing the readmission rate includes the enormous amount of communication required between healthcare services and providers. That communication, furthermore, is hampered by the fact that the patient's EMR exists in differing database systems that do not have linked access for viewing and documentation.

One crucial ongoing activity will involve having the OPTC Program documentation switched over to the same platform that is utilized in the VMG offices to facilitate more efficient communication and documentation of patient visits.

Follow-up care post-discharge is paramount in preventing readmissions for heart failure patients. In that vein, the business model of partnered sub-acute facilities—and having employed APPs medically manage the HF population in these facilities—has met with mixed success. Challenges include empowering APPs to consistently practice at the top level of their licensure and to make the crucial medication adjustments and care decisions to treat patients in the facility to prevent readmitting patients with decompensated HF back to the hospital.

Ongoing activities include:

- Additional management of population healthcare services for these patients
- Employment of a physiatrist to ensure sub-acute facility rehab goals are being met timely
- Employment of an MD champion and Director of Systems APPs working with sub-acute administration to remove barriers to APP/model practice

A large portion of care managed in the OPTC Program is palliation of symptoms and discussion of advance directives for those patients that have end-stage HF. Due to our specific patient population (average age of random sample for descriptive survey was 80.5 years), those patients with Class IV HF are frequently seen and treated. Despite the availability of inpatient and outpatient palliative care and hospice APPs, the OPTC Program team is challenged with initiating the enormous burden of care coordination and referral of these patients. Appropriate discussions for end-of-life care and decisions often initially occur with patients during their participation in the OPTC Program, outside of discussion with their PCP or cardiologist.

Ongoing activities are looking to provide the OPTC Program staff with sufficient resources and ongoing support to best serve these patients.

References

1. Mozzafarian D, Benjamin EJ, Go AS, et al. On behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2016 update: a report from the American Heart Association. *Circulation*. 2016; 133: e38-e360.
2. Ibid.
3. Heidenreich PA, Trogon JG, Khavjou OA, Butler J, Dracup K, Ezekowitz MD, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. *Circulation*. 2011; 123(8): 933–44.
4. Ibid.

Patient Story

B.S. is a 76-year-old white female with a past medical history of nonischemic cardiomyopathy diagnosed in 2006, ejection fraction 10%, due to treatment with chemotherapeutic agent for breast cancer. When initially seen in the Program in 2015, patient had NYHA Class IIIb/IV symptoms. She continued to have gross functional limitations related to her reduced pump function, despite aggressive diuretic management and use of currently available neurohormonal blockade medication. At the time, valsartan/sacubitril (ARNi) had just received FDA approval for use for systolic dysfunction heart failure. The patient's first trial with ARNi caused acute kidney injury and the drug was

discontinued. However, Dr. Kariann Abbate proposed a retrial of the drug, as the patient had no other medical therapy that could be offered to improve the patient's HF symptoms. At the time, the patient remained severely limited in her ability to perform simple activities such as dressing or bathing herself. As a result of restarting the ARNi, with careful titration of the patient's diuretics and close oversight, the patient has seen remarkable improvement in her functional status as well as stabilization of her HF symptoms. B.S. is stable and is now NHYA class II and continues to be followed in the OPTC twice a year for routine visits.

Appendix

Figure 1A: Measure 1 - ACE/ARB/ARNi (Valley MG)

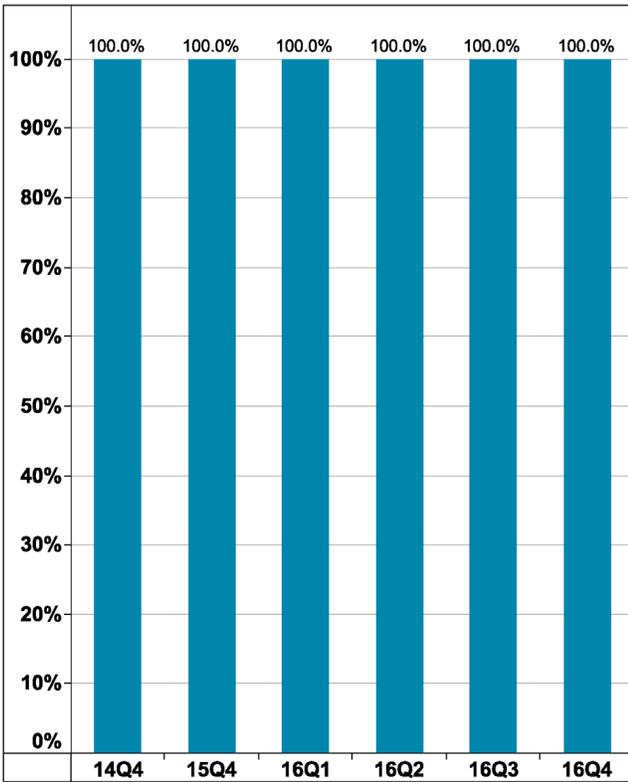


Figure 1B: Measure 2 - Beta Blocker (Valley MG)

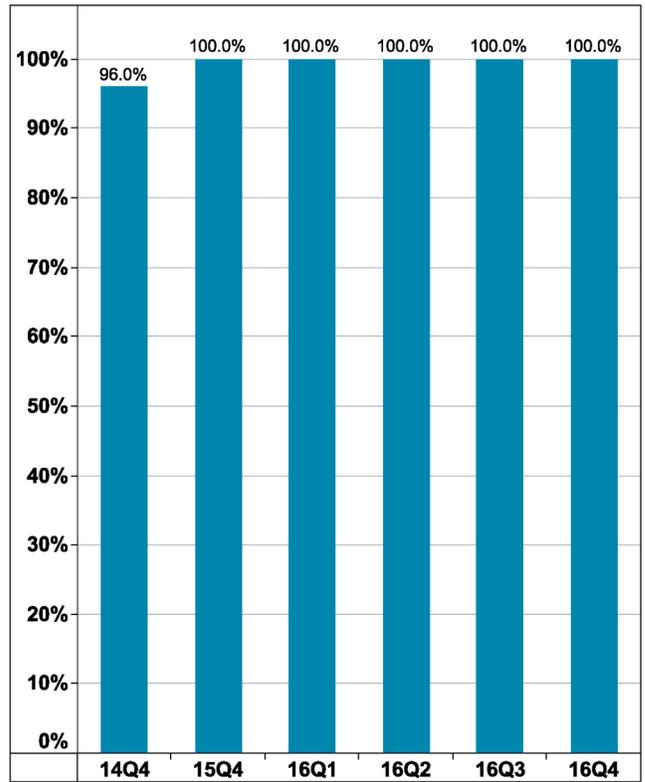
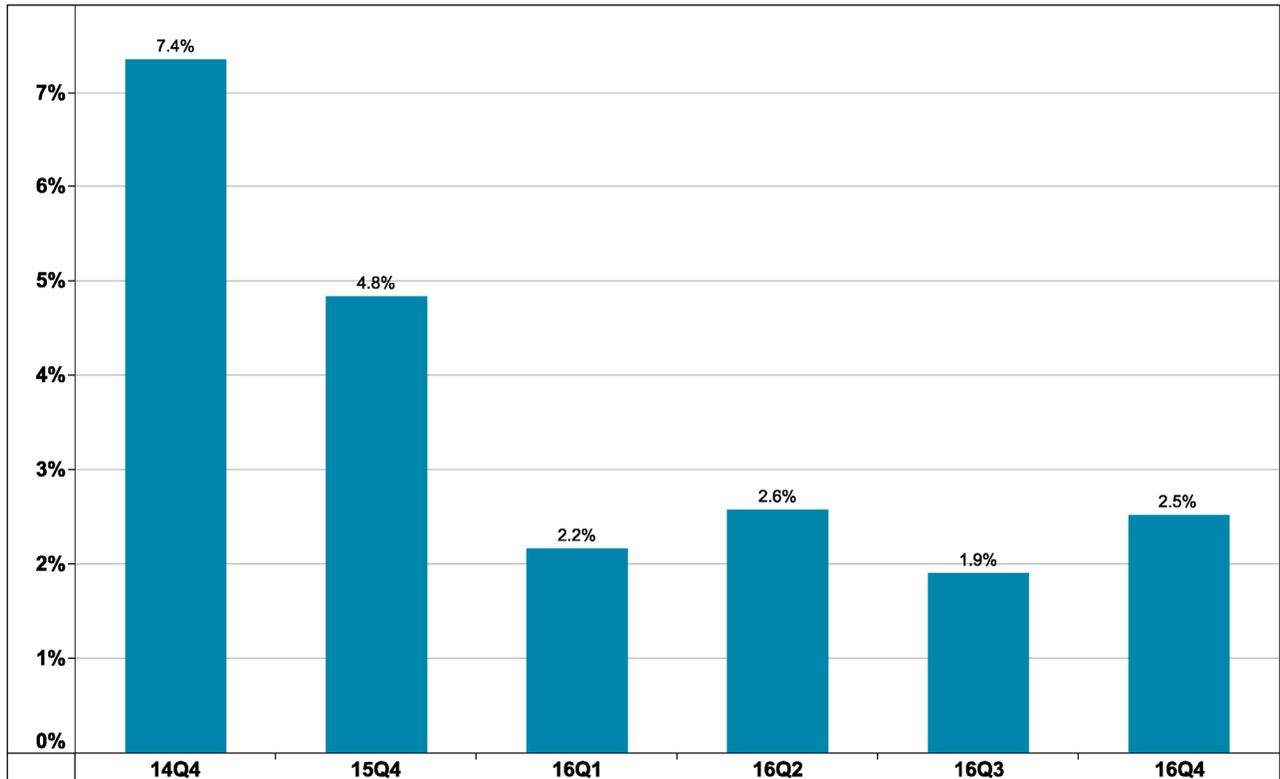


Figure 2: Measure 3 - Readmission Rate (Valley MG)





Project Team

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